

2009 SEDAAG MEETING

PAPER PRESENTATION ABSTRACTS

Asheville's Bele Chere Festival: The Entertainer's Perspective

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Asheville, North Carolina's Bele Chere festival is touted as one of the largest outdoor street festivals in the Southeast. In this paper, we explore the relationship between the festival and the entertainer from an economic perspective, and discuss how festivals fit into the framework of community life, specifically focusing on the social and economic aspects of the festival-community relationship. We investigate the spatial distribution of the entertainers' home locations at several points during the 30-year evolution of the festival's existence. We mapped the towns where the musical acts were based, for each of the following years: 1979, 1990, 1999 and 2008. We hypothesize that the distribution of entertainers/music groups can be a good indicator of a festival's success and argue that if musicians are willing to travel long distances to perform at a festival, it must be a successful event. As Bele Chere grew during the 30 years from 1979 through 2008, its reach also grew, drawing in artists from an ever-widening spatial area and indicating that the festival became progressively more successful.

KEY WORDS: music, festival, Asheville, spatial distribution

When a New Deal is Actually an Old Deal: TVA, Jim Crow and the Engineering of a Racialized Landscape in Norris, Tennessee

Derek H. Alderman, East Carolina University

Robert N. Brown, Appalachian State University

The creation of the Tennessee Valley Authority brought dramatic changes to the people and places of the American South. Yet, it also played a more under-analyzed role in reproducing traditional power relations and maintaining racial inequalities in the region. The TVA, despite its progressive, reconstructive focus, perpetuated a Jim Crow style of racial discrimination through its employment practices and community planning efforts, leading to the blatant exclusion of African Americans from the planned community of Norris, Tennessee. Later to become a white suburb of Knoxville, Norris was created in the 1930s to house TVA workers and as an experiment in social engineering—to demonstrate, ironically enough, the benefits of cooperative living. Our paper examines the racial politics of the TVA, seeking to understand why the Authority's bold experiment in regional planning reproduced the South's racial order rather than reform it. We also identify the social actors and ideologies underpinning the construction of Norris and how this town, as a racialized landscape, worked to reinforce, but also potentially challenge, racist social practices. The failure of the TVA to engineer adequate social change for African Americans can be traced to the contested political environment surrounding the project, the racist assumptions of its planners, and the "grass-roots" philosophy and "political arithmetic" that planners carried out in rationalizing discrimination.

Citizenship Contested: The 1930s Domestic Migrant Experience in the San Joaquin Valley

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With the rise in globalization, citizenship has come to the forefront of contemporary political, social, and geographical debate. Such research has importantly highlighted the multiple scales at which citizenship is acquired and maintained, but has typically theorized citizenship solely from the perspectives and experiences of transnational migrants. In this presentation, I explore access to full citizenship through a case study of Okie migrants to the California San Joaquin Valley in the 1930s. As poor whites pushed from their home states, Okies were not only subject to the abuses of large-scale commercial agriculture in California, but also experienced social and legal marginalization with regard to citizenship. Despite holding national formal citizenship, the domestic-born impoverished Okies faced public outcry and legal attempts at exclusion premised upon their inability to meet local expectations of citizens. Only with an acceptance and assimilation of local conceptualizations of citizenship did Okies acquire legal, social, and cultural citizenship.

Southern Saltpeter: A Social Geography.

Katie Algeo

Western Kentucky University.

Conventional treatments of the saltpeter trade during the early nineteenth century tend to emphasize political and economic factors. While not denying their importance, this paper adds a dimension to our understanding of linkages between gunpowder manufacturers and Southern saltpeter suppliers by examining the social relations behind the saltpeter trade. A case study of saltpeter purchases by the DuPont Company, at the time the largest US manufacturer of gunpowder, emphasizing their attempts and ultimate failure to establish a reliable Southern saltpeter supply, is used to illustrate the importance of networks of business associates, relations of trust, and business competency in creating and maintaining trade relations. Data is derived from the archives of the DuPont Company housed in the Hagley Library of Wilmington, Delaware, and numerous other primary and secondary sources. This paper argues that it was a failure of social relations and not a change in international trade laws that led to the demise of the Southern saltpeter industry following the War of 1812.

Becoming Erased: Human Rights, Social Exclusion, and State Power in Slovenia

Toby Martin Applegate

Rutgers, The State University of New Jersey and The University of Tennessee-Knoxville

This paper presents a unique human rights case in the Republic of Slovenia. In 1992, over 18,000 Slovenian residents were secretly erased from the public register of Slovenia. No clear reason has ever been given by the Slovenian government. Using this case, it questions and seeks to destabilize traditional approaches to addressing human rights violations by revealing the State and its institutions not as a landscape where victims of human rights violations can find justice, but as a place where the State is reconfigured by those violations and the subjectivity of those victims is locked in place by virtue of their status as “becoming.”

A Cluster Analysis of Tropical Cyclone Trajectories in the South Indian Ocean

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Hierarchical clustering has been performed on a sample of 191 tropical cyclones (TCs) spanning the years 1979-2008 in the South Indian Ocean (SIO). Twenty-four variables relating to the ranges of direction and speed of TC movement were utilized from the Joint Typhoon Warning Center Southern Hemisphere best-track data to cluster the TC trajectories, including a tortuosity index not previously found in TC research. The result is a seven cluster solution named generally by each type's mean trajectory: Southwest, South, Classic, Recurving, West, Meandering and East. Southwest and Classic TC trajectories are identified as posing the highest risk to populated islands and coastal regions of the western SIO basin because of their relative frequencies, intensities, and west to southwest bearings from their genesis area east and northeast of Madagascar. All trajectory types are compared and contrasted in terms of their defining movement characteristics and potential for landfall.

**Using GIS and Land Use Histories for Environmental Planning along
the South Fork New River, NC**

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Increasing population growth and resulting changes in land use in primarily rural areas are recognized as issues of significant importance to residents of western North Carolina. Previous studies have shown rapid growth in rural areas has been associated with decline in environmental quality as well as increased housing values that often price local residents out of the market. Since geographic information systems (GIS) analysis performed at an appropriate scale is difficult to provide with commonly used land use land cover (LULC) data sources, this study provides a GIS analysis of spatial density surfaces derived from land parcel data as a means of measuring exurban growth processes. In particular, a case study demonstrating housing trends based on density surface analysis over a nearly sixty year time period (1950-2007) at a scales of within a one mile buffer area of the South Fork of the New River in Watauga County, NC. This housing density surface analysis is supplemented with additional data on land cover change derived from Landsat TM remote sensing imagery spanning the last ten years. Finally, land parcel density surfaces and land cover data are used to create a residential development and land cover change risk potential layer that highlights hotspots of growth that may have negative significant ecological, cultural, or socioeconomic effects within the county. This analysis is discussed in relation to the environmental planning issues of mitigating potential land use conflicts, land conservation strategies, and increasing public participation in land use decision-making.

Keywords: Land parcel data, density surfaces, spatial processes, spatiotemporal analysis, GIS, environmental planning, rural gentrification, South Fork New River, Watauga County, North Carolina.

**Regional variation of convective structure at monsoon onset across South America
inferred from TRMM observations**

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This paper aims to study the changes in the vertical structure and horizontal organization of convective systems during the onset of the monsoon season in South America. In particular, we will contrast properties of convection for different regions where onset appears to be controlled by different large scale forcing mechanisms (e.g. frontal systems). We analyzed the Tropical Rainfall Measuring Mission (TRMM) 3B42 0.25° 3-hourly merged precipitation maps for 1998-2007 in each 5° x 5° land box. Changes in the organization and intensity of convective systems prior to and following onset are studied regionally via the metrics of vertical radar reflectivity structure, convective and stratiform rain rates, and lightning flash count using the TRMM Precipitation Feature database for 1998-2007. Time series and composite analysis of these metrics prior to and following onset for different regions were constructed. Results illustrate important regional contrasts in the timing of onset and buildup of deep convective systems in the deep Tropics, with an earlier onset and sharp increase in deep convection several months prior to onset in western Amazonia compared to eastern Amazonia. In higher latitudes, large rain systems associated with fronts persist year-round. Onset is thus less dramatic and appears to be linked to the establishment of the South Atlantic Convergence Zone.

Assessing the Relationships between Urban Form and Air Quality using Spatial Metrics

Bradley Bereitschaft, University of North Carolina at Greensboro

One of the most pressing issues in urban planning today is the complex spatial phenomenon of urban sprawl. Inefficient and ineffective urban land use configurations can contribute to a wide variety of social and environmental ills. This investigation uses spatial metrics derived from remotely sensed landcover data to characterize certain measures of urban sprawl and to assess their association with tropospheric ozone levels at the metropolitan scale. The results of this study corroborate previous findings, and suggest that urban areas with more sprawl-like characteristics are likely to have higher levels of troposphere ozone. As with pre-existing sprawl indices, spatial metrics appear capable of capturing this relationship, while also providing measures not available in existing sprawl indices. Furthermore, this study indicates that the value of spatial metrics, and their relationship with ozone levels, are highly dependent upon the spatial extent of the study area. Understanding the relationships between urban form and air quality will help us both develop healthier cities and combat global climate change.

Holograms, the U.S. Constitution, and Teaching Regional Geography.**Stephen S. Birdsall****University of North Carolina at Chapel Hill.**

Making sense of the world and helping others do the same is one of our discipline's most basic purposes. Even so, the previous century's disciplinary history provides numerous illustrations of the difficulty of integrating spatially distributed information of distinctly different character in ways that show regional coherence and yet are apparent to non-specialists. One fundamental pedagogical challenge of teaching regional geography, therefore, is to engage bright students in ways that intrigue them enough to learn such integration and see the world with greater subtlety and insight. Using the characteristics of holograms and a well-known portion of the United States Constitution, I have developed an end-of-semester project for my U.S. and Canada regional geography course that seems helpful in accomplishing this.

Derby Cruising in Louisville, KY: Historical Origins of a Contested Urban Festival

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University of Kentucky

This paper explores the origins and context of the once popular but now banned African American celebration in Louisville known as Derby cruising. The festival is understood as a social event within the larger context of the Kentucky Derby Festival. However, its political significance is also revealed by the strong contestations from the largely white city majority and the eventual prohibition of Derby Cruising by the city government. This paper considers Derby cruising within the festival tradition of using urban areas to claim space, control cultural representation, and assert a political voice. As such, this paper argues that the spatial location of the festivities, i.e. in the 'streets,' was an important factor in explaining both the popularity of the event and the strongly oppositional stance taken by many city residents and the city government.

Bankfull Indicators in Small Streams in Peninsular Florida: Reliability and Relations with Hydrology

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Bankfull stage and flow are considered important thresholds in geomorphology. Six field bankfull indicators were collected at 17 gaged and 28 ungaged as near-to-natural streams in peninsular Florida with drainage areas from 0.2 to 311 square miles and valley slopes from 0.02 to 2.27%. Based on an analysis of prevalence among sites and correspondence with hydromorphic data, the elevation of the flat floodplain was determined to be the most reliable bankfull indicator at sites with a wetland floodplain, while the elevation of the inflection on the bank was the most reliable indicator at sites with an upland floodplain.

Analysis of peak flow data for the gaged sites using Log Pearson Type III distributions, found that the bankfull discharge ranged from less than one year to 1.44 years, which is more frequent than the average 1.5-year return interval often cited in the literature. Using flow duration data, bankfull discharge is equaled or exceeded approximately 25% of the time on average. This suggests that small rivers in peninsular Florida achieve bankfull stage relatively frequently compared to the modal values elsewhere, implying that the channels are formed by relatively frequent flows.

Mennonites and Migration: A View of a 1940's Resettlement Program

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The Interior Plateau of central British Columbia seems an unlikely setting for Mennonite settlement. But in 1940 the governments of Saskatchewan and British Columbia combined with the Canadian National Railway to move twenty-five impoverished Old Colony families from Mennonite reserves in Saskatchewan to new homes near the Cheslatta River, south of Burns Lake. Other families followed in the next few years. Government and railroad documents, supplemented by local and family histories, newspaper items, interviews, and field work, make it possible to obtain a clear picture of these settlers and their community. This paper reviews the circumstances that led to the migration, describes life in this isolated place, explains why most families departed, and tracks the movement of these families to other Mennonite communities. It shows that a common faith and outside assistance were not enough to sustain this settlement in the face of numerous obstacles.

Holocene Paleoenvironmental Investigations of an Abandoned Paleochannel and Meander Scar Feature, Fort Benning, GA

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Two sediment records from a Holocene terrace of Upatoi Creek, Fort Benning, GA provide insight into Holocene floodplain formation and environments. A paleochannel exposed by cutbank erosion provides a early (c. 10 ka) to mid Holocene record, with a drier, diverse and dynamic early Holocene forest dominated by oak (*Quercus*) and pine (*Pinus*). Increases in tupelo (*Nyssa*) and other indicators indicate increasingly wetter conditions by the mid-Holocene. Similar patterns are observed in a second record from a meander scar feature near the paleochannel, which spans the entire Holocene. Floodplain forests continue to be dominated by tupelo until historic times, when declines in tupelo indicate a lowering of the water table due to incision of Upatoi Creek to its current floodplain.

The 2007-09 Drought in Athens, GA:

A Climatological Assessment

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During 2007-09 an extreme drought event occurred in the Athens, Georgia region (Clarke, Barrow, Oconee, Jackson Counties) that, in conjunction with widespread drought across north Georgia, led to declaration of a state of emergency by Georgia Gov. Sonny Perdue. An examination of Palmer drought indices reveals that drought conditions during this period were not unprecedented. In terms of intensity, the 2007-09 drought was similar to or less severe than droughts during 1925-27, 1954-56 and 1985-87. A drought of similar duration would be expected to occur approximately every 25 years. Analysis of streamflow on the Middle Oconee River in the Athens region reveals that record-low discharge levels at Athens occurred in 2007 and actually rebounded during the peak of the drought in 2008. The return intervals for the 2007 low-flow values along the river were 75 years at Athens, but only 11 years upstream at Arcade. Water withdrawals from the Middle Oconee below Arcade into Bear Creek Reservoir, the main source of water for the Athens region, appear to explain this anomaly. Based on the climatological and hydrological data, the exceptional societal impact of the 2007-09 drought in the Athens region cannot be explained solely by natural causes.

**Geomorphology of diamondiferous alluvial deposits of the Birim River valley in Ghana,
West Africa**

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Diamonds were first discovered in Ghana in 1919 and since 1920, organized mining of the diamond deposits yielded over 100 million carats of total diamond production. Diamond mining in Ghana represents an important economic activity and employs tens of thousands of artisanal miners, diamond traders, and related activities. Little detailed work has been done on the geomorphology of the Birim River alluvial deposits. A thorough understanding of the geomorphology of the diamondiferous gravel deposits needs to be developed in order to conduct geologic resource assessments of the diamond resources.

A geomorphologic model of the diamondiferous deposits of the Birim valley is developed using historical research, traditional field mapping, and geochronology techniques. This study reveals that diamonds may be classified into one of four deposit types. The four modes of occurrences are alluvial-flat deposits, low terrace deposits, high terrace deposits, and active channel deposits. Active channel deposits represent a new type of deposit in the Birim River. The new mode of occurrence is an important contribution to the understanding of the geomorphology and modes of diamond occurrence in the Birim River.

**Lost in Space:
The Changing Economic Geography of Ports and the
Spatial Dispersion of Economic Activity**

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The changing economic geography of port economies has transformed the relationship between cities and ports in ways that have increased the spatial “disconnection” between costs and benefits of port-related economic activities. Due to containerization, the globalization of production, the shipping of discretionary cargo, and the efficiency of the national intermodal transport system, the costs of the port economy tend to be geographically concentrated while the benefits are more widely dispersed regionally and nationally. In this sense, a greater proportion of the potential benefits are “lost” to the growing spatial reach of the port. In this paper we review the literature that has conceptualized and attempted to empirically examine the relationship between the port economy and the urban host. We begin to unpack the spatial dispersion of port-related economic activities by using the case of JaxPort, Jacksonville, Florida. Our initial analysis of local impacts suggests that these impacts are important and significant: the number of businesses connected to the port is large and concentrated relatively close to the port terminals. However, initial analysis raises more questions than answers and extensive further analysis is warranted.

“And I Christen You as Subject:” Reconceptualizing Governmentality in the Production of Neoliberal Citizenship

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Neoliberalism has emerged as the political and ideological foundation of post-Fordist social regulation. A revanchist reaction to the Keynesian-Fordist system of strong state control, it accompanies post-Fordism in a dominant system of economic production, consumption and associated socio-economic phenomena like deregulation, labor flexibility, competitiveness, privatization, and devolution of state programs. Neoliberalism also has ramifications on citizenship, which has been rescaled, reterritorialized, reoriented and recodified. This paper explores how neoliberal ideology has conditioned citizenship: how people perceive their roles in society (relationship to others, relationship to government, and relationship to self), and how and where that relationship is situated. This is primarily accomplished by examining notions of governmentality and self-disciplining, as described by Foucault – processes which enable the production of a neoliberal subject, an entrepreneurial and self-regulating individual. By thinking about such manifestations in the context of neoliberal property relations and neoliberal attempts to devolve power downward, this paper attempts to present a nuanced understanding of the creation and regulation of the neoliberal citizen.

**RURAL ROMANIA: BETWEEN COMMUNIST COLLECTIVIZATION
AND INTEGRATION INTO THE EUROPEAN UNION**

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During the second half of the twentieth century, the Romanian countryside experienced significant transformations -- from communist-forced agricultural collectivization, followed by a dramatic program of rural systematization, to a very controversial post-communist reform (the Law on Land Resources) aimed at the decollectivization of agriculture and the restoration of private rural property rights. Given the significance of agriculture to the European Union (EU) social model, the state of Romania's agriculture was a central topic of discussion in the country's effort to join the EU. Through examination of archival records and interviews with key individuals, the research proposed here investigates how Romania's efforts to join the EU have impacted agricultural practice and land-use patterns, addressing the consequences of adjusting Romanian agriculture to Common Agricultural Policy (CAP) requirements.

Key Words: Romania, agricultural collectivization, transition, EU integration, CAP, land reform, decollectivization, rural property

So, what do we do now? A Critical Analysis of ENGO Climate Campaigns

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Global climate change presents the single largest environmental concern to date but, as has been increasingly recognized, environmentalism will not be able to solve this problem alone. I examine the discourse of climate change within the campaigns of three environmental non-governmental organizations (ENGOS). Using a critical analysis of ENGO Web material, I analyze the role of ENGOS in shaping the issue of climate change through the use of specific language that privileges themes like “clean energy”. I consider the social implications of a narrow problem definition and market-oriented, technical policy solutions like carbon trading for building a broader climate coalition. I further argue the case for a human-rights based approach to climate change advocacy that privileges the needs of communities and vulnerable groups in adaptation and mitigation over the market.

When Geography Goes to Court Will It Get to Testify?

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Geography, particularly remotely sensed imagery and geographic information systems, is a powerful tool seldom used by legal entities and participants. Geography can play a significant role in litigation cases if geography experts and their work are allowed into Court by case gatekeepers (judges). Acceptance of scientific evidence is guided by the 1993 Daubert v Merrell Dow Pharmaceuticals Supreme Court Decision. Daubert scientific evidence guidelines seek scientific methodologies to be falsifiable, have a known error rate, have survived scientific peer-review, and are generally accepted by the relevant scientific community. Daubert and its implications for geography are explained. An example Federal case is examined with respect to Daubert and improvements are identified. Attending to Daubert increases the likelihood that when geography goes to Court it will get to testify.

**A FIELD-BASED DECISION SUPPORT TOOL
FOR LAND USE PLANNING AND MANAGEMENT**

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Knowledge of land use is important to those in government and private industry alike. Conventionally, patterns of land use have been mapped through use of remotely sensed imagery. However, the complexity and expense of using raster based imagery presents a barrier to many users. Furthermore, a raster format imposes an artificial grid upon the land use pattern that does not necessarily correspond to the boundaries between uses. Therefore, for many users a field-based approach to land use mapping is needed. This paper presents the approach developed by the Tennessee Department of Economic and Community Development (ECD) to develop a field-based tool to support land use planning and management functions of the agency. This approach leverages existing property assessment and property boundary data sets in an effort to reduce costs and yet still achieve a robust classification of uses. The immediate result of this effort is a tool capable of mapping land use throughout the state. However, the larger contribution is an example of how property assessment and property boundary data sets can be merged to produce a new resource for users of land use maps and data.

Key words: planning, field-based GIS, land-use classification

**Improving summer drought prediction in the Apalachicola-Chattahoochee-Flint River Basin
with empirical downscaling**

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The Georgia General Assembly, like many U.S. states, has enacted pre-defined, comprehensive, drought-mitigation apparatus, but they need rainfall outlooks. Global circulation models (GCMs) provide rainfall outlooks, but they are too spatially coarse for jurisdictional impact assessment. To wed these efforts, spatially averaged, time-smoothed, daily precipitation observations from the National Weather Service cooperative network are fitted with linear regression to eight points of 700 mbar atmospheric data from the NCEP/NCAR Reanalysis Project for climate downscaling and drought prediction in the Apalachicola-Chattahoochee-Flint (ACF) river basin. The domain is regionalized with a factor analysis to create specialized models. All models complied well with mathematical assumptions, though the residuals were somewhat skewed and flattened. All models had an R-squared > 0.2 . The models revealed map points to the south to be especially influential. A leave-one-out cross-validation showed the models to be unbiased with a percent error of $< 20\%$. Atmospheric parameters are estimated for 2010–2011 by GCM and by empirical extrapolations. The transfer function was then invoked on both GCM output and empirical extrapolations for drought predictions. All models and data indicate drought especially for 2010 and especially in the south.

KEY WORDS: Empirical downscaling, Global circulation model, Synoptic climatology, Drought prediction, Water resource management, Southeastern U.S

Revisiting *Silent Violence*: leveraging Michael Watts to research the political ecology of oil in the United States

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The objective of this paper is to investigate the political ecology of Michael Watts for application in dissertation research targeting a geographic subsection of the US oil industry. Watts' first book, *Silent Violence* (1983), serves as an important basis for the analysis. That volume scrupulously studies famine in northern Nigerian, and then attributes mass starvation to political-economic indifference, not drought. With respect to research into the geography of oil, the paper concludes that such *natural hazards* research is not merely an historical sidebar in the evolution of political ecology, but continues as a useful foundation. Second, this paper elucidates key conceptual perspectives tackled by Watts in *Silent Violence* and developed throughout his career. These continue to be relevant in oil research specifically and political ecology generally, both in the industrial and non-industrial world—namely, nation-state, nature, and imaginaries.

The backcountry's "urban revolution" and Indian roads: the Indian Trading Path and town development in the North Carolina Piedmont

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While the South is broadly speaking less urban than the North, certain "backcountry" regions of the colonial South underwent rapid town-building during the 18th century. This paper looks at one such region, the North Carolina Piedmont, and considers the relationship between this "urban revolution" and existing roads such as the Indian Trading Path. A new model is introduced, expressing how such a road could have influenced the emergence of a backcountry town, specific to conditions in the North Carolina Piedmont but adaptable to other frontier circumstances. Research results are presented for an area corresponding to the present-day Research Triangle area and focusing on the emergence of the town of Hillsborough on the Indian Trading Path. This research utilizes archival landgrant documents in a GIS analysis and relates the outcome to the introduced model.

Looking at Physician Maldistribution Using Service Areas: The Case of Retina Specialists

Dawn M. Drake

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Health policy scholars and medical geographers have studied the physician maldistribution problem that the United States is afflicted with. Certain areas have excess physicians, while others struggle to serve a population that greatly exceeds the healthcare system's capacity. This puts forward concerns regarding healthcare cost, quality, and access. Most researchers conclude that access is an issue for all Americans based on their location in rural or urban areas. This paper presents a brief overview of the problem, causes, and concerns related to maldistribution. It focuses on the plight of rural areas, which are usually the hardest hit by issues of physician maldistribution. The paper uses a case study of retina specialists in the United States, demonstrating the problem in real world dimensions by calculating service areas. Looking at service areas for retina specialists in the United States reveals that while maldistribution exists, many Americans, whether living in rural or urban areas can access healthcare within an hour's travel time. This reframes the maldistribution problem not in terms of access for all, but a social justice issue for those without personal transportation.

**The Interpretations of Knickpoints along the Big South Fork River system
in Southern Kentucky**

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The longitudinal profile has been used to describe the natural gradient of a stream; many studies have tried to describe the concave profiles and many other studies have demonstrated that this smooth concave profile is not able to describe most natural stream systems. A knickpoint or discrete step in the channel gradient (detected in the longitudinal profile) demonstrates where the theory breaks down. This study focuses on the Big South Fork watershed in Tennessee and Kentucky and the causes of knickpoints within it. The main focus in this study is downcutting, tributary, landslide, structure, and lithology. Different methods are used to identify a variety of possible causes of the KPs in the study area. However, the knickpoints and convexities developed on the long profile of the streams in the study area cannot be attributed solely to a single controlling factor. Multiple contributing factors seem to play significant roles in the formation of knickpoints.

Keyword:

Causes, Knickpoints, Longitudinal Profile, Big South Fork

Red Bird Mission Craft Program: A Case Study of Moral Economy

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Red Bird Mission is a non-profit agency located in Eastern Kentucky. Craft production and marketing are promoted by the agency to provide economic opportunities to its service area, which includes portions of Bell, Leslie, and Clay counties. Since the early 1900's, craft production, that is the production of handmade items, has grown in Eastern Kentucky and currently serves as a primary or secondary source of income for many families in this region.

While small-scale economic alternatives may be beneficial to regional economies, like Eastern Kentucky, academics have a tendency to romanticize these forms of production. Thus, there has been a lack of analysis directed towards organizations that market craft products as well as social elements that influence the methods these organizations employ. However, the literature on moral economy provides an initial starting point for analysis of Red Bird Mission's economic decisions. This literature has gained significant ground within the discipline of economic geography, as well as the social sciences, since the 1970's. Rather than continuing to romanticize craft production, the examination of economic decisions made by the agency through the lens of literature on moral economies will create a critical dialogue regarding small-scale forms of production in Eastern Kentucky.

**Cultural Diffusion of the Asian Martial Arts:
A Brief History of the Development of Okinawan Karate**

Carlo Fortner

University of Southern Mississippi

The historical account of the development of the Okinawan combat system of Karate is said to be based on the Chinese martial methods of Kung Fu. This paper examines the validity and structure of this account by employing the theory of cultural diffusion. The theory itself suggests that innovations are developed from central cultural nodes and it subsequently dispersed to the surround regions by way of cultural interaction. If the historical understanding of Okinawan Karate's development is true, then the belief that China is the central node of combat innovation will be verified based on the intrinsic and fundament elements that Karate shares with Kung Fu. Eight texts on the history of Kung Fu and Karate were analyzed. The analysis of the cultural traits of both of these fighting arts indicates that the majority of the foundation of Karate is an incomplete diffusion of Kung Fu methods and that China is the central of combat innovation.

LATINO PLACE-MAKING IN RURAL NORTH CAROLINA**Owen J. Furueth****The University of North Carolina at Charlotte
Department of Geography and Earth Sciences**

The immigration stream of Latinos into rural North Carolina at the end of the century coincided with economic and demographic restructuring in many rural areas. In rural communities struggling with economic challenges, Latino newcomers present unique opportunities for place-making and community development. This paper reports on Latino entrepreneurship and development activities in five Latino high growth rural counties. The research discusses the pattern of incipient business development, the spatial structure of Latino economic activity, and offers commentary on future place-making impacts.

Lake Okeechobee: What's the Story?

Jacqueline Gallagher, Department of Geography, University of Mary Washington

Lake Okeechobee, Florida, is the headwater for the Everglades and as such plays an important role in the ongoing restoration project. Much research has been carried out on the ecology and hydrology of the lake, but its geological evolution is still patchy. This paper pulls information on the development of this lake from many different sources and adds recent original data. A beach ridge on the eastern edge of Lake Okeechobee has an absolute date coinciding with those from peats in the south, while recent wind-wave and sediment circulation studies demonstrate that geomorphic forms recorded in a 1913 map were formed under conditions similar to today.

Local-scale analysis of the Caribbean mid-summer dry spell on San Salvador, Bahamas.

Douglas W. Gamble, Department of Geography and Geology, UNC Wilmington

The annual rainfall pattern of the Caribbean is bimodal in nature with an early-season peak, April to June, and a second late-season peak, August to November. Both peaks are separated by a low period of rainfall termed the mid-summer drought or mid-summer dry spell (MSD). The origin of the Caribbean MSD is enigmatic with an incomplete understanding of the atmospheric processes associated with its genesis. One reason for the incomplete understanding is that the majority of existing research has focused upon regional or global scale analysis. Few if any studies have focused upon daily weather patterns associated with development of the Caribbean MSD at one specific location. In order to expand this limited range in scale of analysis, the purpose of this research is to investigate the daily weather patterns associated with the Caribbean MSD for San Salvador, Bahamas. Results from the analysis indicate that the San Salvador MSD is most likely created by the absence of cold air masses and/or blocking of northern frontal storms by the expansion of the North Atlantic high pressure. The rainfall that does occur on San Salvador during the mid-summer drought period is associated with weak convection formed as easterly winds travel across the warm island surface perpendicular to topographic barriers.

OFFSETTING DEFORESTATION: HONEYDEW BEEKEEPING IN RURAL VERACRUZ, MEXICO**Heather A. Gamper, Department of Geography, Florida State University, Tallahassee, FL**

Honeydew, a waste excretion from scale insects, can be used as a carbohydrate resource for honey production. Some of the foremost honeys in the world come from scale insect, honeydew. By setting up beekeeping within a local community, it may be possible to catalyze interest in a livelihood that could lessen the dependence upon livestock grazing, the primary contributor to forest fragmentation. Honeybees could provide direct benefits to the local community both as a source of a food with a high nutritional value, and also as a source of additional income through the sale of honey or for persons renting out or safeguarding locations with access to honeydew. Honeydew beekeeping is discussed in relation to its global context and specifically, this paper examines the potential for honeydew beekeeping among local inhabitants of Chiconquiaco, Mexico and beekeepers from the nearby countryside. Included is an examination of the socioeconomic and ecological characteristics of Chiconquiaco honey production and a synopsis and social context of the potential for these fragmented forest lands to provide an alternative to the agricultural land uses that are driving forest fragmentation.

Influence of Rock Glaciers on Stream Hydrology in the La Sal Mountains, Utah

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This article examines summer runoff from two basins in the La Sal Mountains: the non-rock glaciated Wet Fork and rock glaciated Gold Basin. Runoff events were analyzed for volume of stormflow, stormflow duration and peak flow duration. Four events were recorded in Wet Fork ($n = 4$), five events were recorded in Gold Basin ($n = 5$), and six events at a flume immediately adjacent to the Gold Basin rock glacier ($n = 6$). Wet Fork hydrographs are dominated by baseflow throughout the summer and a small proportion (0.13 – 0.31%) of precipitation leaves the basin as stormflow during storms. Gold Basin hydrographs are characterized by early season snowmelt with flood peaks associated with summer storms. Runoff from the gaged rock glacier represents 15 – 30% of total basin runoff, and is inversely related to precipitation and directly related to rainfall intensity. Removal of rock glacier hydrographs from total basin hydrographs indicate that there is increased surface runoff from alpine drainage basins that contain rock glaciers, suggesting rock glaciers act as impervious surfaces. Alpine drainage basins with rock glaciers have greater surface runoff and higher flood peaks than drainage basins which lack rock glaciers.

The U.S. State and Evangelicals in Sub-Saharan Africa

Hannes Gerhardt

University of West Georgia

This paper focuses on the positioning of the U.S. state with regard to evangelicalism's rapid spread in Africa. I argue that conservative U.S. evangelicals have been allowed to become a key component of an emerging, U.S. supported governmentality in Africa. The basis of this development is that there is a clear yet superficial synergy between U.S. global interests and conservative evangelical aims. Yet, in its sanctioning of evangelical discourse and practice in Africa, the U.S. state is contributing to a perceived clash of civilizations between Christians and Muslims. The best way to avoid such a development, I argue, is for the U.S. state to dedicate itself to the promotion of a secular vision for Africa that is based on establishing the social, political, and economic infrastructure needed to accommodate and deal with difference as opposed to conservative religious visions aimed at overcoming difference.

**MANAGING EU'S SOUTHERN BORDER:
THE SLOVENIA – CROATIA DISPUTE***

Anton Gosar

University of Primorska

Koper-Capodistria, Slovenia

The paper will focus on the border dispute between Slovenia and Croatia after the disintegration of Yugoslavia and in the light of European Union's expansion in 2004. The discussion of the border region in regard to the historic, economic and cultural situation will be presented. Results of recent field works done in north-eastern and south-western Slovenia will be presented. The relatively favorable situation, which allowed ownership and employment regardless of (Yugoslavian provincial) border, has gone from worse to bad prior to Slovenia's inclusion into the European Union and have become a burden as the s. c. Schengen border crossing regime is becoming increasingly tighter. As Croatia is seeking EU membership as well, disagreements in regard to the actual border delimitation are flaming up - despite the fact that Slovenia strongly supports Croatia's intentions. The Mura River and Pirano Bay case will be analyzed.

A New Ecology for Sweetgrass (*Muhlenbergia filipes*): Harvesting practices and land management along the South Carolina coast

Brian Grabbatin, Department of Geography at the University of Kentucky

Theories of balance, stability, and equilibrium dominated ecology for the first half of the 20th century (Botkin 1990). In conservation practice, these theories were used to justify community relocations and restrictive land-use policy (Neumann 2004). “New ecology” emphasizes nonequilibrium, instability, and change in natural systems. Political ecologists use new ecology to show how conservationists can utilize nature-society, by making human settlements sites of conservation and incorporating livelihood practices into management regimes (Zimmerer 1998). I present a case study of sweetgrass harvesting in Mt. Pleasant, South Carolina to show how ecological knowledge shapes relationships between land management and livelihoods.

In Mt. Pleasant, rapid coastal development has destroyed sweetgrass habitat and restricted access to harvesting grounds. Analysis of interviews and participant observation data show no specific reference to new ecology in land-use agreements between harvesters and land managers. However, the logic underwriting these agreements resembles new ecology because it suggests plant health and ecological diversity benefit from this anthropogenic disturbance. This study shows how conceptualizations of human activity from the physical sciences shape management regimes. It also illustrates how alternative environmental knowledges are utilized to negotiate access to resources, reshaping conservation practice.

Potential Costs of Implementing the Proposed Municipal Zoning Changes Post-Hurricane Katrina: A Case Study of the Coastal Region Parcels in Long Beach, Mississippi

Wendy J. Griffioen, University of Southern Mississippi.

Hurricane Katrina destroyed most of Mississippi's coastal communities. The city of Long Beach, Mississippi lost over 50% of the structures and CBD located south of the CSX railroad tracks to the water's edge. The rebuilding plans set in motion by the Governor of Mississippi propose changes to the city of Long Beach to attempt to redesign the community. This will be an enormous project, if implemented. South of the CSX railroad tracks, 87% of the structures sustained significant damage by Hurricane Katrina and the changes needed to achieve *SmartCode* are going to be costly. This study addresses the various concepts needed to achieve *SmartCode* and illustrates one variable available to the city of Long Beach, Mississippi to buy the parcels needed to proceed with the Master Concept Plan of rezoning and rebuilding to meet *SmartCode*. Results indicate the city does not have the financial resources to purchase the targeted parcels slated for rezoning.

Evolving Perspective on Land Cover Change and Biogeography

Jerry Griffith, University of Southern Mississippi

While many features of the earth's surface remain essentially unchanged, many other biophysical and human features are dynamic. Globally, 40% of land has been converted to agricultural use and many places have lost more than 90% of their natural habitat. Land cover and land cover change have been tied to biogeography primarily through the patch-mosaic model of landscapes. However, the remote sensing of land cover and its change is becoming more sophisticated with increasingly advanced sensors, and there exists a dichotomy between using discrete land cover units or biophysical measurements to indirectly link to species occurrence predictions or species richness estimations. The patch mosaic model is being increasingly seen as inadequate in tying land cover to biogeographical phenomena such as species occurrence and density predictions.

When the AAG Came to Town—Knoxville: Winter of 1945.

Margaret M. Gripshover, Western Kentucky University and Thomas L. Bell, University of Tennessee and Western Kentucky University.

After World War II travel restrictions had been lifted in 1945, the Association of American Geographers (AAG) decided to hold its annual meeting in Knoxville, Tennessee. The Knoxville meeting marked the beginning of the end for the two disparate professional organizations that threatened to split the profession in two. At the time, the Association of American Geographers (AAG) was a small clubby, invitation-only largely academic organization. The rival American Society for Professional Geographers (ASPG) was a larger group of geographers, many of whom were not in academe. By 1949, the two professional organizations merged with the regional structure of the ASPG contained underneath the AAG umbrella. Today, there are just enough hotel room accommodations in downtown Knoxville to house the attendees of the annual SEDAAG meeting let alone an annual meeting of the AAG. This paper analyzes why Knoxville was chosen as the location of the national AAG meeting, the participants involved and an overview of the content of the papers that were presented, and how the events of this meeting contributed to the merger of the AAG and the ASPG and the formation of SEDAAG.

Keywords: American Society for Professional Geographers (ASPG); Association of American Geographers (AAG); Knoxville, Tennessee; Southeastern Division of the Association of American Geographers (SEDAAG); World War II

Dendrochronology as a Technique in Biogeography for Reconstructing Environmental Processes

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Today, more and more trained dendrochronologists have established laboratories in the Southeastern U.S. that can conduct tree-ring analyses. The need for such research is great as more and more land management agencies require information on past environmental processes at high temporal resolution across broader, landscape-level spatial scales. The methods used in the field to collect tree-ring samples and in the laboratory depend on the objectives of the study and the sample design(s) necessary for any one particular study. Critical among these methods is crossdating, a technique that ensures the assignment of the exact calendar year in which the tree ring was formed. The derived tree-ring data can be used in numerous types of studies, perhaps most importantly the reconstruction of forest stand history. Such studies are often conducted together with studies that evaluate disturbance history, and perhaps the most important of these disturbances is wildfire. Alteration of fire regimes by human activity has changed the structure, composition, and successional trajectories of most Southeastern forests. To truly understand the past environment, however, we must understand the effects of trends in past climate on tree growth. Dendroclimatologists analyze the climate response in trees to evaluate the one dominant climate signal to which the trees are responding, and use this information to reconstruct climate back in time.

The relationship of weather with the geography of infant mortality in parked vehicles

**Andrew Grundstein, Department of Geography, University of Georgia;
Jan Null, Department of Geosciences, San Francisco State University;
and Vernon Meentemeyer, Department of Geography, University of Georgia.**

Each year in the United States an average of 37 children die from hyperthermia in enclosed vehicles. In this study we first develop a data set (N=409) of the dates and locations of deaths (1998 - 2008) based on newspaper accounts. For each date/location the maximum daily temperature, average daily solar radiation, and cloud cover is "reconstructed". Deaths follow a seasonal pattern as expected with a peak in July (one quarter of deaths) and no deaths in December and January. Deaths occurred over a wide range of temperature and radiation levels and across virtually all regions, although most occur across the southern tier of states. On death-days the average temperature was 32°C with >70% on days >30°C. Based on a model of predicted cabin temperatures, average temperatures were 65°C (149°F). Finally, we developed a hyperthermia death index (HDI) for the expected versus actual deaths in a metro area based on the area's population of <5 years of age and its maximum daily air temperatures. The HDI indicates that Salt Lake City/Ogden and Memphis have more deaths than "expected" while Phoenix, which has the largest number of absolute deaths, ranks 9th of 15 metro areas on the HDI index.

An Investigation of Barrier Island Topographic Characteristics Using LIDAR and GPS Mapping Techniques

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Barrier islands are dominated by several dynamic processes that determine their size, shape and structure. A comparison between field mapping techniques using high spatial resolution GPS and remotely detected LIDAR elevation data was conducted to identify topographic characteristics of an undeveloped barrier island in southeastern North Carolina. Research was conducted to verify if a high resolution GPS survey and LIDAR data can be used to determine the relationship between topography and the location and size of overwash fans. LIDAR is more spatially comprehensive, though it can be very expensive, and a GPS survey is very precise and spatially accurate, but is very time consuming. It was found that the LIDAR and GPS elevation data are both viable techniques and have comparable results. Importantly, there was an inverse relationship between the height of the dunes and length of overwash fans. Therefore, during storm events, where there are lower dunes there is more sand transferred from the foredune to the back barrier resulting in larger overwash fans.

Faith-based Gentrification

Katherine B. Hankins, Georgia State University

Andy Walter, University of West Georgia

In the 1990s, the East Lake Foundation and FCS Ministries began their work to transform the marginalized Atlanta neighborhoods of East Lake and Summerhill, respectively. The founders of these organizations deployed an explicit strategy of recruiting middle-income residents from churches and seminaries to “reneighbor” these poor, majority African American neighborhoods. Using qualitative analysis, we identify the multiple objectivities and subjectivities that emerge from this spatial approach to addressing poverty—what we call “faith-based” gentrification—as expressed in the redevelopment projects in East Lake and Summerhill. First, we argue that place itself develops a particular poverty-objectivity, as it becomes a product of the relations of power—of the state, the market, and civil society (in this case faith-based nonprofit organizations)—as a place of poverty. Second, place emerges with subjectivities of home (residents), of frontier (gentrifiers), and of neglect (community leaders). Next, we argue that gentrifiers and the gentrified develop complex spatialized subjectivities in these faith-based urban transformations. “Strategic neighbors” are motivated not just by economic gain (Smith, 1996) or cultural consumption (Zukin, 1985) but explicitly by faith and the desire to “serve the poor.”

**Potential implications of REDD for a real landscape.
Case study of East Usambaras Tanzania**

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Reducing Emissions from Deforestation and Degradation in Developing Countries (REDD) will reward largely rural developing countries to reduce carbon emissions from deforestation and degraded lands. The REDD scheme, if implemented successfully, will lead to a reduction of the global green house gas emissions and the provide other environmental benefits such as hydrologic stability, less soil erosion, and protection of habitat for terrestrial biodiversity. This study examines one landscape, the East Usambara Mountains of Tanzania, to assess the potential benefits that would have been created if a RED, REDD, or REDD+ plan had been successfully implement in the early 90's. Benefits that are estimated include potential area of forest that could have been saved from deforestation, potential area degraded forest that could have been financed to regenerate, and potential carbon that could have been kept from being emitted. The financial benefits available to rural communities is difficult to predict due to the complexity of implementation within specific locations, and these issues are discussed.

**Mapping Memories of Slavery and Emancipation: John Washington's Map of Civil War
Fredericksburg.**

Stephen P. Hanna

University of Mary Washington

On April 18th, 1862, John Washington escaped slavery by leaving Fredericksburg, Virginia, and crossing the Rappahannock River to the Union Army's camp in Falmouth. In 1873, he penned a remarkable memoir, *Memorys of the Past*, in which he detailed his life as a Fredericksburg slave and his flight across the Rappahannock. One of the most notable, and possibly completely unique, aspects of his memoir is his hand-drawn map of Fredericksburg. As a work of cartographic memory, John Washington's map offers insights into the urban slave landscape of Fredericksburg and suggests how this man's subsequent life in Washington, DC during Reconstruction shaped his memories and his geographic imagination.

Bank Erosion Dynamics of Southern Appalachian Headwater Streams

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Models of stream sediment loading and measures taken to reduce stream sediment loads generally target uplands as sources of sediment, but sediment can also enter streams from channel bank erosion, a less studied and less predictable set of processes. To develop the data needed to compare upland to stream channel bank sediment inputs to southern Appalachian streams, we have tracked changes on erosion pins installed on channel banks of tributaries to the Little River, in east Tennessee. This paper presents interim erosion-pin data from 12 of the monitored streambanks. Bank erosion is widespread, and 10 of 45 erosion pins in this sample have lost more than 10 cm in the 2.5 years since monitoring began. Patterns of change in erosion pin exposure over time at these sites include gradual and sudden changes, reversals from erosion to swelling or deposition, and differences between upper and lower banks. Some erosion pins on lower channel banks have been completely buried by deposition or lost to erosion, but upper banks have also experienced centimeters of erosion. The results demonstrate the dynamic nature of fine-grained channel banks and the diversity of processes active on them.

Key Words: stream bank erosion, sediment load, sediment source, Southern Appalachians

Blight Surveying Mississippi's Southern Three Counties: Hurricane Katrina Plus Four**David Harms Holt, Ph.D.****Assistant Professor, Geography, College of Science and Technology****Coordinator of Senior Honors for the Gulf Coast Campuses, Honors College****Faculty Adviser for Gamma Theta Upsilon, Iota Alpha Gulf Coast, Chapter of the International Geographical Honor Society**

The geography department at the University of Southern Mississippi has been conducting studies using Geographic Information Systems (GIS) to document and monitor the recovery rate of the Mississippi Gulf Coast. This has been problematic as GIS data are not readily available before 2005 and the movement of people after Hurricane Katrina has been difficult to quantify. Using boots on the ground field work, we have identified over 8,200 parcels that are either damaged or blighted in the area south of Interstate 10. We are now trying to use utility data to help track populated houses to help understand the migration caused by Katrina.

**“It's Better You Don't Go Home”: Mapping the State in Zambia's Bbilili and
Sichifulo Game Management Areas**

**Allison Harnish
University of Kentucky**

In the summers of 2007 and 2008, I conducted preliminary research into the extractive use of environmental resources amongst residents of the Sichifulo and Bbilili Game Management Areas (GMAs) outside Zambia's Kafue National Park. Participants were invited to reflect on the role of the Zambian Wildlife Authority (ZAWA) in easing or constraining their access to natural resources and the overall advantages and disadvantages to living in a GMA. This paper represents an attempt to engage the interview data with two key literatures in political ecology—Arun Agrawal's (2005) study of forest management from India's Kumaon region, and Roderick Neumann's analysis of nature conservation in Tanzania's Arusha National Park. Creating a dialogue between the case studies, I shed critical light on the role of the state in implementing environmental conservation and the tendency for militarism within protected area law enforcement. I conclude that, while contemporary political ecological research is useful for making sense of the Zambian data, no single framework is perfectly suited for describing the dynamics observed in the two GMAs. In this case, the comparative analysis of alternative narratives provides a more productive foundation for theorizing the complex relationship between conservation territories and the margins of the modern state.

High bills, energy inefficiency, and isolation: Living with fuel poverty in Eastern North Carolina

**Conor Harrison
East Carolina University**

Geographers have long recognized the ways in which an individual's life experience is shaped by broader societal relationships in areas such as aging, disability, poverty, health, and housing. The role of energy in these societal problems has not been considered by social geographers, however, leading to a lack of research by geographers into the lives of the fuel poor. Fuel poverty is the condition in which households are unable to maintain a comfortable indoor temperature due to a combination of financial constraints, energy inefficient housing, and inadequate public policy. A life in fuel poverty is more than simply a physical housing or financial problem as it can drastically impact lives by reinforcing social segregation and isolation of the poor.

In this paper I examine the experiences of individuals living in fuel poverty in Greene, Lenoir, and Wayne counties using two sources of data. The first is a database of low income recipients of the Weatherization Assistance Program (WAP) containing financial, housing, and socio-demographic data. The second is in-depth interviews conducted in the summer of 2009 with elderly and disabled recipients of WAP. In conclusion, I will present a brief research agenda for further geographic inquiry into fuel poverty.

Effects of climate and disturbance on growth of eastern hemlock at its southern range limit**Justin Hart****Department of Geography, University of Alabama****Saskia van de Gevel****Department of Geography and Planning, Appalachian State University****John Sakulich and Henri Grissino-Mayer****Department of Geography, University of Tennessee**

We developed a tree-ring chronology using eastern hemlock individuals from three disjunct stands at the species' southern limit to quantify the influence of climate and disturbance on radial growth patterns. The tree-ring record extended 158 years from 1850–2007. Significant negative relationships were found between the Standard chronology and monthly mean, maximum, and minimum temperatures during the previous and current summer, while significant positive relationships were documented between the Standard chronology and monthly minimum temperature for September and October of the current year. Significant negative relationships were documented between the Standard chronology and monthly total precipitation for July and August of the previous year and May–August of the current year. Response function analysis showed that monthly climate variables were less important to eastern hemlock growth than prior-year growth. Climate variables ($r^2 = 0.22$) and prior growth ($r^2 = 0.40$) explained 62% of the variance in the tree-ring chronology. A time series plot for the eastern hemlock chronology showed that actual tree growth agreed relatively well with predicted growth based on significant climate variables, although positive departures were documented. Dendroecological analysis revealed these departures were likely related to disturbance events.

**THE RADNOR LAKE PROJECT: COALESCENCE OF GEOGRAPHY,
HISTORY AND ARCHAEOLOGY**

Doug Heffington, Steve Ward and Megan Sutton McClure

Middle Tennessee State University, Radnor Lake State Natural Area

Radnor Lake State Natural Area (RLSNA) has long been heralded as one of central Tennessee's best kept secret. With close to a million visitors a year and with an almost hundred year history, it is hard to believe that many residents outside Nashville metro have seldom heard of Tennessee's "Walden Pond." The 1200+ acre natural area is nestled in the rolling Overton Hills of southeast Nashville. With all its natural beauty, it is no wonder that the cultural history and cultural landscapes of the natural area often go unnoticed, or unacknowledged. Since the early 2000s, MTSU's Cultural and Historical geography program has taken steps to document, preserve, interpret, and understand the rich cultural mosaics that comprise Radnor. This paper provides information on the Oral Geography Program at RLSNA - a program that not only provides insight into a person's "sense of place" when it comes to Radnor, but one that serves as a preservation and interpretive tool.

The role of Sediment-transport evaluations for development of synthetic Instream-Flow Regimes: An Example for the Texas Environmental Flows Allocation Process

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Instream-flow programs, including the Texas environmental flows allocation process, include hydrologic, geomorphic, biologic, and geochemical evaluations designed to ensure that river and riparian systems are environmentally healthy. Streamflow is considered the “master variable” and other evaluations are commonly considered ancillary; designed to either reinforce or adjust streamflow statistics. A statistical evaluation of pre-regulation streamflow for the Sabine River (Texas-Louisiana border) was done using the Hydrology-Based Environmental Flow Regime (HEFR) model, which was recommended by a Texas advisory committee. HEFR output includes seasonally-tuned flow rates, frequencies, and durations of overbank, high-pulse, base, and subsistence flows. HEFR also accounts for naturally-expected variations associated with wet, normal, and dry years. A sediment-transport “overlay”, which compares a synthetic HEFR-based annual hydrograph to observed flows during normal hydrologic conditions (December 1993 – November 1994), was also analyzed at this location using the SAM Hydraulic Design Package for Channels. Analyses show that effective discharge of bed-material load bifurcates from an observed peak of 425 m³/s to bimodal peaks of less than 142 m³/s and about 480 m³/s for the synthetic hydrograph. Further, average annual sediment yield is reduced by 67% for the one-year period.

The Urban Landscape and Gender in the Interior West: Preliminary Findings from the Mapping of Women in Helena, Montana, 1884 – 1930

**Sarah E. Hinman
Idaho State University**

The textual historical record of women's imprint on the landscape of the North American West is faint, particularly that of working class women. The use of historical geographic information systems provides a model for a new women's history of the West by utilizing previously neglected sources to map the experience of women in the urban West. Most literature focused on women in the American West during the nineteenth century has highlighted the homesteading or "frontier" experience. The argument here is that the West's population clusters exhibited urban characteristics early in their development, and GIS offers useful tools for analysis in studying the gendered western city. This paper introduces the preliminary investigation of the spatial make up of Helena, Montana, 1884 - 1930. Digital technologies provide a different lens to view how women shaped the spatial composition and social structures within western urban spaces. Digital models of Helena, constructed using contemporary map sources are the first step toward providing an integrated visualization of city's changing spatial structure. Preliminary findings indicate that regulatory laws represented elite female attempts to marginalize immigrant and working women, and to segregate sexual and economic threats to cultural hegemony through alterations to commercial and ethnic districts.

Amazon Fisheries: Threats, Uses, and Dynamics

Fritz Hoogakker, Roger Rios Arenas, David S. Salisbury

Fish form not only an essential element of Amazonian ecosystems and biodiversity but are also critically important sources of income and protein for rural Amazonians. Despite this, little is known about the health and sustainability of fish populations throughout the Amazon, with many scholars calling for further studies on the subject. Currently, gold mining, chemical based fishing, and unsustainable harvesting rates appear to threaten the Peruvian Amazon's freshwater resources. Field work on harvesting rates and methods (both local and commercial), analysis of mercury contamination in fish tissue, and ethnographic research with fishermen promise to greatly increase our understanding of the state, threats, and future of this valuable resource.

From Shore to Summit: Paleolimnological Records Across Costa Rican Ecosystem Regions**Sally P. Horn, Department of Geography, The University of Tennessee, Knoxville, TN 37996****Kurt A. Haberyan, Department of Biological Sciences, Northwest Missouri State University,
Maryville, MO 64468**

Costa Rica has an abundance of lakes, distributed from sea level to the nation's highest peaks and within each of the major terrestrial ecosystem regions. These lakes exemplify nearly every natural process of lake formation, including volcanic activity, faulting, fluvial dynamics, glaciation, and landslides and other forms of mass movement. Natural lakes in Costa Rica are popular hiking and tourist destinations today, and had practical and perhaps symbolic importance for prehistoric cultures. They contribute to Costa Rica's high habitat and biological diversity, and their sediments provide key evidence of ecosystem history. Here we focus on what sediment records reveal about the long-term history of Costa Rica's principal ecoregions, and on data gaps and research opportunities. The study of sediment profiles from lakes and wetlands in Costa Rica is a key tool for understanding late Quaternary climate change, complementing and extending what can be learned from the study of ancient soils, cave speleothems, tree rings, and glacial geomorphology. Sediment records from Costa Rican lakes also contain abundant evidence of the activities and impacts of preColumbian people.

This Contested Terrain Is Not a Metaphor: Coal vs Wildlife Preservation in the Cumberland Mountains.

**Thomas F. Howard
Armstrong Atlantic State University.**

In 2007, the state of Tennessee, with the assistance of the Nature Conservancy and the Doris Duke Foundation, carried out a complicated land acquisition program in the Cumberland Mountains and created what is now known as the North Cumberland Wildlife Management Area. Although this has been hailed as the largest conservation project in Tennessee since the Great Smoky Mountains National Park, the 127,854 acres in the project are far from enjoying the same level of protection as a national park. Threats of forest clearcutting and parcelization of mountain land for second home development have been greatly reduced, but the threat of massive landscape rearrangement through strip mining and mountaintop removal is still present. The persistence of the notorious broad form deed means that most of the wildlife management area is in effect co-owned by mining companies or the Tennessee Valley Authority, the country's largest consumer of strip-mined coal. This presentation will consider how this contradictory situation came about and how it might develop.

**Use of LiDAR Data in Defining the Urban-Rural Transition Zone
in Stream Cross-Section Morphology.**

Kirsten J. Hunt

Geography Department, University of South Carolina

Stream channel geometries have been found to enlarge with urbanization of the upland drainage basin. Although enlargement has been documented in a variety of climatic and urban regimes, little is known about how the geomorphic effects of urbanization translate into rural areas downstream. Models derived from Light Detection and Ranging (LiDAR) data from the North Carolina Floodplain Mapping Program were used in conjunction with field surveys to explore the urban-rural transition for North Buffalo Creek in Greensboro, NC. Although the model did not accurately represent at-a-point channel geometries, it was able to represent the prevailing geometric relationships between contributing drainage area and averaged channel capacity for channel reaches of approximately 140m. The urban-rural transition for North Buffalo Creek was found to be linear, with decreases in enlargement beginning well within the current urban boundary. Using linear regression, a truly “rural” state was predicted to be achieved when the channel reaches a contributing drainage area of 400 - 450km². Local increases in enlargement were found to be directly influenced by the junction of major tributaries.

Cumulative Impacts of Small Reservoirs in the Apalachicola-Chattahoochee-Flint River Basin

Amber Ignatius

University of Georgia, PhD Candidate

Dams and reservoirs in the Apalachicola-Chattahoochee-Flint (ACF) Rivers have been associated with significant hydrologic change including water quality decline, habitat loss through stream fragmentation and habitat conversion, temperature alteration, disrupted riparian zone function, modified sediment distribution, and loss of water through evaporation. As this river basin is both an international hotspot of biodiversity and one of the fastest growing areas of the country, the implications of these alterations are of great importance both economically and environmentally.

While the basin's few large government and public utility owned reservoirs have been examined extensively, the cumulative impact of the tens of thousands of small reservoirs is less well known. To assess the impact of these small reservoirs, a geographic database of reservoirs was constructed for the ACF basin for a range of reservoir sizes. The initial framework for this reservoir database was generated through inspection, standardization, and synthesis of data from several agencies. The database was edited using high-quality aerial photography from 2005 through 2008, topographic maps, and landcover data and then assessed for accuracy. The creation of this dataset confirmed over 24,500 small reservoirs throughout the basin.

Reconciling the Truth: Legacies of Racial Violence in the American South

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This paper explores the way grassroots activists address the legacy and memory of violence through a truth and reconciliation process undertaken by citizens in Greensboro, NC (Greensboro Truth and Reconciliation Commission) in response to a Ku Klux Klan massacre that occurred in 1979. Historically the U.S. racial project (Omi and Winant 1994) is predicated on the use of violence; and violence is an inherent part of the processes that construct racial inequality in North America (Gillmore 1998; Tyner 2008). Consequently, the way community groups address histories of racial violence is important to combating long-standing racial divisions in U.S. society. The outcomes of such efforts affect the dynamics of national identity as well as civil society's understanding of the long-term effects of violence directed at minority populations. This research leverages insights from Critical Race Theory, the Black Atlantic and work on race and racism to understand the legacy of racial violence against African Americans in the U.S. South and the ways memory of that violence contributes to the construction of the U.S. racial project.

**Analyzing Small Watersheds with High-Resolution Topographic Data:
The LiDAR-Side of Mapping Headwater Streams**

L. Allan James

Geography Department, University of South Carolina

Kirsten Hunt

Geography Department, University of South Carolina

Methods of automated channel headwater mapping are reviewed and three methods are used to map a small watershed in the South Carolina upper Piedmont based on local-resolution LiDAR data. First, channels are mapped manually using the contour crenulation method on 0.6-m contours generated from the LiDAR data. This map is a tremendous improvement on channel network maps based on 1:24,000 scale topographic quadrangles. Second, channel networks are generated using the standard flow accumulation method with three critical area thresholds: 30, 50, and 100 grid cells (drainage areas of 480, 800, and 1600 m²). Third, channel networks are generated using a slope-area product that is proportional to stream power ($\Omega_{i,j} = k A_{i,j} S_{i,j}$). This multivariate method appears to improve on the standard flow accumulation method. While all of the methods are capable of simulating fairly accurate channel networks with an appropriate drainage density, they cannot eliminate errors of omission and commission. Additional network simulations using powers of slope ($A_{i,j} S_{i,j}^B$) are being explored.

Teaching Energy: A Neglected Endeavor in Geography?

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Geography's position in the intersection of the natural and social sciences makes it a natural fit for energy research and education; however, very little is known about the teaching of energy geography. In this paper, 41 energy geography courses are identified and syllabi content is analyzed. Existing energy courses tend to be taught at large departments, but primarily for an undergraduate audience. Courses are equally divided between broad exposes of energy issues and more narrow and specialized energy topics. Moreover, the course content is usually within the human geography than physical geography tradition. However, energy is limited to being an interest of individual geographers rather than a departmental program specialty; therefore, the teaching of energy seems to be a neglected endeavor in geography. To rectify this, departments should reconsider their nature-society curriculum to create space for energy courses, and energy geographers should produce text material that emphasizes the geographic perspective on energy. Geography needs to rethink the position of energy within the discipline and award it a higher status.

Title: Nature and the Nation-state: The European Water Framework Directive and the De-territorialization of Environmental Governance

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During the 1990s, the European Union embarked upon a project to create uniform standards for water quality among member states. This process resulted in the EU Water Framework Directive (EUWFD) of 2000, which requires that all member states “protect, enhance and restore” rivers to attain good surface water status. From an environmental protection standpoint, EUWFD is notable because it establishes the environment as a consumer of water alongside human economic uses. In this paper, I wish to examine the deterritorialization of decision making associated with nature by looking at one example of environmental governance in Europe. There are three parts to the paper. First, the background and nature of the of the European Union (EU) Water Framework Directive as an environmental governance regime are explored. Second, it is argued that contemporary environmental regulatory regimes, especially the EUWFD, constitute a profound, if underappreciated, challenge to existing nation-centric thinking in the EU. In conclusion, it is argued that the redrawing of political-administrative scales along physical geographical lines, as is the case in these river basin districts, represent a “politics of scale” that should be brought to the fore of intellectual debates about political geography in Europe.

Geographic Disparities in Contraceptive Needs and Services in the United States

**Lisa Jordan, Poon Rollinson
Florida State University**

Half of all pregnancies in the US are unintended, but the gap between contraceptive needs and services across the country is uneven. This article contributes to the very limited literature on spatial inequities in reproductive health services by assessing county data on women in need of contraceptive services and availability of public contraceptive services from the Alan Guttmacher Institute in a GIS environment. Initial observations show that Western cities, and even in many Western rural areas, in general, many more women who are in need of public contraceptive services are provided for, and the Southeastern states and cities should be targets for improving access for poorer women to contraceptive needs and services.

The effects of stream restoration on woody riparian vegetation in the northwestern North Carolina mountain region: A comparative study of restored, degraded, and reference stream sites

Chris Kaase

Appalachian State University

In North Carolina, over 500 stream restoration projects were documented since 1990, though only 36 % report monitoring after project completion. Abundance of restoration and dearth of outcome documentation presents valuable research opportunity. We study the effects of stream restoration on riparian plant communities in the mountains of northwestern North Carolina. We examined 27 sites within three groups: restored, degraded, and reference. Field-based sampling defined woody species composition and structure in three geomorphic positions (channel bed, channel bank, top of bank) on two transects per site. Woody structure at restored sites was compared to reference and degraded sites by calculating metrics (species richness, stem density, basal area, canopy cover) and by assessing community composition using multivariate analysis. Restored sites had higher richness, density, and basal area than degraded sites, but did not differ in canopy cover. Restored and reference sites were similar in richness and density, but not basal area and canopy cover. Composition differed among treatments, with notable effect of species used for re-vegetation at restored sites.

Market intelligence and entry: the case of US machine tool manufacturers in China**Ronald V. Kalafsky****University of Tennessee****Department of Geography****Knoxville, TN 37996****kalafsky@utk.edu**

Exporting provides additional difficulties for manufacturers due to myriad reasons, including physical distance to new markets and the varying institutional environments of the targeted international destinations. This paper provides the case of machine tool manufacturers from the United States and their entrance into the Chinese market. Many of these firms once relied on domestic customers and are now attempting to explore the world's largest market for these advanced industrial products. The trade organization for these manufacturers has established offices in China to enable this process. Organizational-level interviews with this trade group indicated that a strong physical presence is needed, both in terms of personnel and exhibiting the actual machine tools. Such efforts, to date, have enabled many firms to successfully enter the Chinese market and to minimize many of the difficulties associated with accessing distant export markets.

Keywords: exports, China, manufacturing

Why Scale Matters: A Hazard Research Perspective?

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Due to availability of data at varying observational scales of analysis, the impact of scale on modeled outcome was and still is a major concern among researchers using spatial data. Thus, for years both physical and social scientists have investigated this issue and concluded that scale matters. However, research from a hazard perspective still is at its incipient stage. In recent years, due to continued coastal population growth, hydro-meteorological hazards, such as tropical storms and floods, affect about two-thirds of the coastal population of the world. The result is significant financial loss due to property damage. As hurricanes cannot be prevented, and both physical and human processes behave in certain ways at different spatial scales; in this study an attempt was made to understand the influence of scale on spatial distribution risk that would aid in mitigation and preparation for hurricane events. To fulfill the goal, financial loss due to surge damage to single-family residential structures was computed at five different scales (parcel, block, block group, tract and county) for six coastal counties in Florida. The outcome indicates a monotonic reduction in loss at coarser resolution, especially in densely populated counties.

The Stochastic Properties of High Daily Maximum Temperatures

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The statistical properties of the excursions of maximum daily temperatures above various critical thresholds of interest are analyzed with a view to developing models of heat wave events using the 115 years of record from the meteorological station in Lake City, Florida. These stochastic variables include; event density (numbers of such events per unit time), duration, timing, and peak values over the threshold. The theoretical basis for the modeling is found in Crossing Theory which states that as the threshold of interest becomes particularly large with respect to the mean of a Gaussian process, the number of crossings (up or down) becomes Poisson distributed. The changing seasonal intensity of such events can be incorporated by utilizing a temporally non-homogeneous Poisson model, with time varying rates. Environmental health studies indicate that both the magnitude and duration of the excursion above the critical threshold are important. As both the number of up-crossings and down-crossings follow a Poisson distribution it is reasonable to approximate the length of time between the two (the duration of an event) by an exponential, or exponential-like distribution. Similarly, the peak magnitudes of event over the threshold (POT) represent the extreme tail of the distribution of daily maximum temperatures and might be assumed to follow the same sort of distribution.

Environmental Controls on Multiscale Spatial Pattern of Salt Marsh Vegetation

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In coastal environments, biogeographic patterns are generally influenced by surface elevation and distance from sea water. However, it is still unclear whether these major topographic factors are significant controls of vegetation pattern *across* spatial scales at which different physical processes operate. This study investigated such a topography-vegetation relationship in a Danish salt marsh focusing upon two scales: a macro-scale (ca. 500 m) across marsh platform encompassing seaward and landward areas and a micro-scale (ca. 25 m) across tidal creeks. While long-term sea-level variation and grazing were factors of the broad-scale pattern, short-term fluvial-geomorphic processes drove the fine-scale pattern. Despite these different processes, similar floristic gradient structures between the two scales were identified by nonmetric multidimensional scaling. The gradient represented an ecological sequence from early- to late-succession, and strongly correlated with micro-elevation (0.30 – 1.30 m Danish Ordnance Datum). However, the gradient did not show any significant relationship with distance from shoreline or tidal channels. Our results suggest that in salt marshes elevation plays a still more important ecological role than the horizontal position relative to sea water at both macro- and micro-scales. The presence of such one fundamental component makes the system relatively simple, and will facilitate future scaling attempts.

**Using Large Scale Circulation Indices to Predict the Intensity of Cold Air Outbreaks over
Extended Time scales across the Southeastern U.S.**

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Extreme cold outbreaks have significant economical and social impacts across the southeastern U.S., particularly in terms of agriculture and energy demand. Recent research has established that these outbreaks are embedded within a distinctive planetary scale circulation regime. In this study relationships are identified between selected large scale circulation indices and the occurrence of different intensities of cold outbreaks across the southeastern U.S. These relationships are exploited to develop empirical models that predict the possibilities of different outbreak intensities over forecasting periods of one week to several months. A 57-yr time series of temperature is constructed from 18 stations to identify cold air outbreaks and quantify their intensity. Daily (PNA, NAO, and AO) and monthly (ENSO 3.4, PDO, and QBO) circulation indices are extracted and combined to characterize aspects of the hemispheric circulation. Summary statistics are used to describe the relationships between circulation anomalies and outbreak intensity. Tree regression models are then developed to predict the long range probabilities of ordinary, strong and extreme cold air outbreaks from the large scale circulation as summarized by the circulation indices.

Did you Reboot?: The Metropolitan Distribution and Growth of the Computer Service Industry in the South, 1998 to 2006.

Jonathan Kozar, UNC Charlotte

It is hard to argue the importance of computers and computing technology in society in general and business in particular. The role of computers and computing technologies in business has been ever increasing since the 1970's. The computer service industry not only represents a key industry within the overall service economy but is also integral in all producer services and manufacturing operations. This paper examines the distribution and growth of the computer service industry in the southern metropolitan United States. It was found that the southern metropolitan computer service industry outpaces the growth of the industry at the national level. Overall, high order computer programming and computer design services represent the largest shares of computer service industry employment in the south, regardless of metropolitan size. Although, high order computer services have moved down the urban hierarchy and low order computer maintenance and related services have increased in share of employment and across all levels of the urban hierarchy.

Acorns, Billboards and Bed-Ins:**The Symbolic Uses of Space in John and Yoko's 1969 Campaign for Peace****Robert J. Kruse II, Ph.D.****West Liberty University**

As evident from the upcoming book, *Sound, Society and the Geography of Popular Music* (Bell and Johansson, eds. Ashgate 2009) from which this paper is drawn, popular music continues to interest geographers working within a variety of theoretical frameworks. This paper focuses upon the peace campaign of John Lennon and Yoko Ono undertaken through the staging of a series of events that utilized art and media for the promotion of peace. Specifically, this paper addresses the symbolic uses of space by Lennon and Ono during their "Acorns for Peace" events, their "War is Over" billboards and their two bed-ins for peace. With links to geographical literatures that draw from literary theory and popular culture, this study analyzes the campaign in terms of its uniqueness and in the ways it anticipated future engagements of popular music artists with political statements made through contemporary media.

Advances in Species Distribution Modeling: Applications in Applied Biogeographic Research.

John A. Kupfer. University of South Carolina, Columbia, SC.

In recent years, species distribution models (SDMs) have become an important tool for addressing applied and theoretical questions in biogeography, ecology, climate change research and conservation biology. Most applications of SDMs follow a similar approach in which empirical models relating field observations to environmental predictor variables are used to derive species response functions that are then propagated across space through the use of GIS. Statistical approaches for quantifying species-environment relationships are varied and include traditional regression-based techniques as well as more advanced methods utilizing machine-learning approaches, and this diversification of SDMs in recent years has been accompanied by comparative studies that have provided insights into the robustness and limitations of different techniques under varied settings. In this talk, I specifically summarize approaches to creating and applying SDMs, including the statistical methods involved and key factors that affect model accuracy and transferability, and provide an overview of biogeographic applications of SDMs, focusing on four specific application areas: 1) the projection of species responses to climate and land use change, 2) the assessment of the potential spread of non-native species, 3) the facilitation of species management and conservation planning, and 4) the development of neutral models of species pattern.

Identity, Banal Nationalism, Contestation and North American License Plates**Jonathan Leib****Associate Professor and Director, Geography Program
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One of the most visible expressions of a person's place of residence is found on the license plate attached to his/her automobile. Within several decades of the first issuance of license plates in the early 1900s, state and provincial governments in the USA and Canada began to use their plates for advertising purposes, such as promoting local economies and tourism. In recent decades, however, governments have used license plates to promote national identities and nationalist ideals. Using examples from the USA and Canada, I examine how governments have used such banal signifiers of place as license plates to craft and promote these identities and how drivers have contested that usage.

**Morphology and channel evolution of small streams in the southern Blue Ridge Mountains of
Western North Carolina**

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Small streams are understudied in the southern Blue Ridge Mountains, which is the impetus for this study. Morphologies of 44 streams (0.01 to 20 km² watersheds) from western North Carolina are characterized and couched in the context of historical channel evolution and human impacts. Topographic cross-sections and longitudinal gradients, channel and floodplain widths, and bed particle sizes are the basic data. Regression equations describe channel form. New luminescence, radiocarbon, and cesium-137 dates resolve channel evolution. Results indicate that channels behave in a predictable linear fashion of changing in response to increasing watershed size. However, forested reaches have wider channels than pastured/grassland reaches, indicating more than 50% loss of instream habitat due to conversion of riparian forest to pasture/grassland. Floodplain widths indicate long-term lateral erosion rates of at least 0.5 to 5.0 cm/yr. Colluvial inputs are found to be significant drivers of channel form and particle size on the smallest headwater streams. The modern floodplain appears to have established itself about 100 years ago and is still evolving.

Mapping forest canopy density in Leon County, Florida

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Understanding the current forest status is important to forest managers. This study aims to assess the status of forest density in Leon County, Florida. A hybrid classification method was performed on a Landsat Thematic Mapper (TM) image to generate the latest information on forest canopy cover for Leon County. The forest coverage in Leon County was found to be 56%. Then, the forest density distribution was derived by overlaying the forest map with a vector grid mesh and calculating the percentage of forest falling within each grid cell. A 300m × 300m cell size was iteratively determined considering both of the accuracy of the results and computational efficiency. The forest density statistics revealed that 36% of the forest land in Leon County is occupied by forest density having a value of more than 50%. The forest density output was then verified by using Normalized Difference Vegetation Index (NDVI) data. A positive correlation ($r=0.99$) between average NDVI values and forest density suggests that our forest canopy cover mapping has been accurate.

Building a GIS Model to Re-Discover Historic Roads in the Carolina Backcountry

Dale Loberger

ESRI

This paper describes a process of creating a predictive GIS model to identify potential routes of historic roads in the colonial Carolina Backcountry. The most important factor in this process turned out to be the SSURGO soils data and its associated attributes. This discovery has led to the theory that the location of hydric soils can be an important predictive factor in determining preference for routes over large areas during the colonial period.

Finding old infrastructure: field-based research and the Southern backcountry**Tom Magnuson****Trading Path Association**

The Trading Path Association uses GIS in a variety of ways to aid in finding and mapping pre-modern (age of muscle-power) infrastructure: paths, trails, roads, and associated artifacts. The methods used are fundamentally empirical processes enhanced by layered GIS data revealing otherwise indiscernible relationships in space and suggesting areas and objects of further study. This paper reveals for comment the methods used and some results obtained.

Prospects for Involvement of Biogeographers in Environmental Restoration

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Ecologists have formalized environmental restoration as a major cornerstone of their discipline, calling it ecological restoration, and referring to the science on which the practice is based as restoration ecology. However, biogeographers have largely ignored this significant and lucrative area of inquiry. Restoration requires a broad perspective and range of expertise, and biogeographers provide the interdisciplinary background inherent to geographic training that squarely situates us to make significant contributions to the practice and science of environmental restoration. All three of the main sub-disciplines, ecological, historical, and cultural biogeography, and many of the research specialties within them, have important roles to play in one or many aspects of environmental restoration. In addition, environmental restoration is an excellent way to introduce undergraduates and graduate students to field research, apply research findings to real world problems, and train students for careers. Biogeographers need to get involved directly in restoration projects and influence the underlying assumptions and perspectives in the restoration discourse instead of hoping that our basic research is relied upon for scientifically driven practice.

Classification and analysis of channel disturbance zones along an Ozark river, Southwest Missouri

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In the rural watershed of Finley Creek, Southwest Missouri, stakeholders are concerned about the current state of channel instability based on initial investigations of channel migration, or, disturbance zones. This project applies geographic information systems and the use of historical aerial photograph analysis to (1) identify the locations and extent of channel disturbance zones, (2) classify disturbance types, (3) quantify rates of channel change, and (4) investigate some of the physical controls responsible for disturbance zone formation on Finley Creek. Historical aerial photograph coverage of the main stem of Finley Creek was acquired for the years 1955 and 2005. Channel center lines were digitized from each of the georectified photographs and overlaid in a GIS to identify disturbance zones. Disturbance zones were then classified into one of four types: (i) extension, (ii) translation, (iii) cutoff, and (iv) mega-bar based on a simple classification decision tree. Disturbance zones tended to occur ($\alpha=.05$) in areas with high confinement ratios as compared to stable areas and occurred in higher density clusters roughly associated with the location of fourth order tributaries and higher valley widths. Local instabilities combined with a static watershed-scale sinuosity suggest that Finley Creek is experiencing a period of relative stability.

**Comparing radar-derived convective precipitation with lighting data in
landfalling tropical cyclones**

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University of Florida

This study examines regions of convective rainfall in landfalling tropical cyclones (TCs) through a GIS-based analysis of radar reflectivity returns. The centroids of regions enclosed by 40 dBZ reflectivity values are calculated relative to the direction of storm motion and wind shear. Each storm is analyzed every three hours for 24 hours post-landfall, yielding 387 observation times across 43 landfalls. Results show that convection shifts counterclockwise towards the front of the storm as forward velocity increases, and clockwise from the upshear left towards the downshear left quadrant as shear increases. The shift with increased shear may result from overlap between the right front and upshear left quadrants. These results are compared to studies that used lightning flashes to investigate TC convection. These studies included TCs that were offshore and featured more overlap between right front and downshear right quadrants. However, both the radar-based and lightning flash density approaches find that when vertical wind shear is strong, most convection is located in the downshear half of the storm, and that convection mainly occurs in the right front quadrant as a result of storm motion.

Drought-Busting Tropical Cyclones in the Southeastern Atlantic United States: 1950-2008**Justin T. Maxwell¹, Peter T. Soulé², Paul A. Knapp¹, Jason T. Ortegren³, and Matt G. Sufficool²****¹ Carolina Tree-Ring Science Laboratory, Department of Geography, University of North Carolina at Greensboro, Greensboro, North Carolina****² Department of Geography and Planning, Appalachian State University, Boone, North Carolina****³ Department of Environmental Studies, University of West Florida, Pensacola, Florida**

Droughts and tropical cyclones (TCs) are climatologically-common events in the southeastern United States, yet little research has examined the potential for TCs to ameliorate drought impacts. In this manuscript, we identify the frequency of TCs that abruptly end drought conditions (i.e., drought busters, DB) and determine possible influences of coupled ocean-atmosphere teleconnections on the likelihood of a TCDB. Using the HURDAT database and Palmer Drought Severity Indices from 1950–2008, we identified every TCDB for 31 climatic divisions in the southeastern Atlantic United States. We present the spatial patterns of the total number of TCDBs and the percentage of all droughts ended by TCs using choropleth maps. To determine what teleconnections influenced TCDBs, we used logistic regression analysis and included multiple synoptic-scale circulation indices as predictor variables. We found that up to 41% of all droughts and at least 20% of droughts in three-fourths of the climatic divisions were ended by TCDBs. NAO was a significant predictor ($p = 0.005$) in the logistic regression model ($\chi^2=10.91$, $p = 0.001$). An odds-ratio calculation showed that TCDBs are 5.8 times more likely to occur during a negative NAO phase than a positive NAO phase.

Waffle House and Huddle House in the South

John W. McEwen, University of North Carolina, Greensboro

Although the (Northern) concept of the diner as it was perceived by Southerners did not succeed in the South, there are two distinctly Southern restaurants that do succeed as diners. Waffle House and Huddle House both have their origins in the cultural region of the South. Both have their individual self-perceptions about their place in Southern culture as well as expectations about who their clientele are. Preliminary research (actually eating at a Waffle House or Huddle House) has shown that each holds true to their own self-perceptions regarding dining experience. The spatial distribution of each is also examined to determine if the distribution of each is related to their self-perceptions about who their clientele are.

**IT HAS TO START SOMEWHERE: PLACE, OPPOSITION AND PRESIDENTIAL
ELECTIONS IN TAIWAN**

Daniel McGowin

The Florida State University

The Republic of China, popularly known in the West as Taiwan, held its first direct presidential election in 1996. In that historic election, popular president Lee Teng-hui of the long-ruling Kuomintang party won by an overwhelming margin, including securing 24 of the 25 districts. Beginning with the 2000 election, the relatively solid voting bloc fractured and a cleavage formed with southern Taiwan becoming the center for the opposition movement. The electoral map that formed in 2000 has held true during both the 2004 and 2008 presidential elections.

The purpose of this paper is to examine the formation of Taiwan's south as a site of resistance with regards to the presidential election. It is posited that long-standing opposition in southern Taiwan, as well as the role of ethnicity and the emergence of multiple parties all played a major role in shaping the current electoral landscape in the Republic of China. It is conclude that place is the primary explanation for Taiwan's presidential electoral geography.

Modeling spread dynamics of infectious disease: Putting geography into the mathematics

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Understanding the biogeography of emerging infectious diseases in plants and animals is a frontier for the discipline, which requires interdisciplinary linking of concepts and methods across epidemiology, ecology and evolution, and geography. To date, models of disease spread have utilized either a biogeographical pattern-based or epidemiological process-based approach. Biogeographical models have provided significant insight into how landscape structure affects disease spread, but largely ignore epidemiological processes underlying spatio-temporal dynamics of disease, rendering them of limited use for examining epidemic outcomes. Epidemiological models commonly consider effects of spatial heterogeneity on mechanisms of disease dynamics, but rarely incorporate geographical parameters, thus limiting their ability to predict epidemic outcomes for particular places or regions.

I describe an approach for combining dynamic epidemiological models with biogeographical models to predict the spread of disease through realistic, heterogeneous host populations and dynamic environmental conditions. Using the forest disease Sudden Oak Death as a case study, my analysis addresses 3 objectives: (i) development of a parsimonious, stochastic epidemiological model; (ii) parameterization of the model from snapshots of incomplete mapped data on host and pathogen distribution that considers the principal scales of spread; (iii) use of the model to predict likely spread under different climatic scenarios.

**Impacts of the Closure of the Jamaican Export Banana Market: Adaptive Responses
of Banana Farmers**

**Mario A. Mighty
Department of Geography
University of Florida**

In recent years, Jamaica has faced a number of crises with its traditional agricultural export of bananas. Despite being a steadily growing global commodity, the Jamaican banana industry has had many cycles of growth and decline. Once a world leader in exports, the nation now ranks 37th in production and barely registers on the export market. Declining production and earnings, fuelled by several hurricanes strikes and the uncertainty of the European Union (EU)'s banana regime and declining world prices have led to the end of exports. A major source of employment in the island, the closure of this market have forced people involved in the industry to face the daunting challenge of pursuing alternative livelihood strategies. Through the interviews with farmers and other stakeholders, various means of adaption from the export market to the domestic market have emerged. These included shifts in land allocation, changes in crop production and the search for new markets within the industry. The role of government support was also found to be an important factor in the response mechanisms among farmers.

**Trends and impacts of forest coverage and fragmentation in the
Georgia Piedmont from 1974 to 2005**

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The forests of the Georgia Piedmont have experienced significant reductions in forest coverage and increased fragmentation in recent decades. The urbanization of the counties surrounding Atlanta is driving the greatest losses of forest coverage and initial fragmentation of forest landscapes. Habitat loss and fragmentation are known to have many detrimental ecological and genetic impacts on species; however overstory trees have been noted as potentially being resistant to some of these impacts due to long life spans and long distance dispersal of pollen and seeds. Sustained urbanization eventually results in a reduction in landscape fragmentation with unknown impacts on the ability of overstory trees to withstand the genetic consequences of these changes in landscape structure. This study examines the trends of forest coverage, fragmentation, and forest edges in the Georgia Piedmont from 1974 to 2005 at the county scale to inform the further analysis of how landscape patterns can potentially impact the genetic structure of species.

Incarceration-as-Migration: Spatial Analysis of Georgia's Prison Flows

Matthew L. Mitchelson

University of Georgia

In this paper, I report an analysis of prisons under the Georgia Department of Corrections' jurisdiction. My goal is to analyze and characterize the state's prisons and prisoners simultaneously, in relation to one another. I perform the analysis with two widespread claims in mind: first, that prisoners disproportionately come from urban origins, whereas prisons are located in rural areas; second, that prisoners are often held great distances from their homes. The first claim is treated using a principal components analysis of the Georgia prison-prisoner system. The second claim is treated using a gravity model approach. The analysis isolates a set of five regionally structured prison-prisoner linkages across the state, and finds geographically qualified evidence to support the aforementioned claims.

Political Geography 2.0: Informing Local Political Action with WebGIS**Sarah Ann Moncelle****Department of Geography and Planning****Appalachian State University****Boone, NC 28608****Email: sm64615@email.appstate.edu**

Organized political campaigns are increasingly integrating emerging technologies to manage constituent data and increase voter turnout in contested elections. Politically active community-based organizations in Watauga County, North Carolina presently struggle to efficiently manage and generate voter activation data to launch meaningful “Get Out The Vote” (GOTV) campaigns at a local level. Here, a limited precinct-level model ArcIMS application was built using data collected during the 2006 General Election to visualize voter distribution and perform basic analyses of countywide voting trends as a proof of concept of its utility for political organizing and voter targeting in Watauga County. Assessment of this ArcIMS application indicates it is a valuable solution for mapping and analyzing voter distribution data for the purpose of local grassroots organizing efforts. In particular, local organizers could use this application to allocate their outreach resources more efficiently by similarly using an ArcIMS application to visualize voter distribution, perform basic analyses of county-wide voting trends, generate call-sheets and canvass routes, generate mailings lists, and to organize specific voter targeting for GOTV campaigning.

**The role of government policies in protected area management: A case
study from Central India.**

Pinki Mondal and Jane Southworth

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Tropical forests are known to experience rapid changes through different land use practices as most of them support dense human populations. In an effort to protect forest and its species, the number of protected areas or parks has increased exponentially in the last few decades. Clearly protectionism seems to play a crucial role in the conservation effort and has been found by several studies to be successful. However, pockets of protected areas are often found to be embedded within a matrix of non-protected forests supporting huge human population, especially in developing countries. It is therefore critical for park management to think beyond just the core protected area, and promote reforestation in the surrounding matrix as well, so that as a whole it can act as a single large protected region. This study integrates Landsat and ASTER data, GIS tools, and complementary field observations to examine the effects of various government policies on forest cover changes. Findings of this study suggest that protectionism plays an important role in conservation, while acknowledging that conservation is also possible in scenarios other than strict protection in the presence of favorable management policies.

**“YOU CAN’T ALWAYS GET WHAT YOU WANT”:
RESPONSE TO SEVERE WEATHER WARNINGS**

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Despite extensive research on responses to warnings for severe events, we continue to wonder why warnings are not heeded. Progress has been made in using different formats and in increasing lead times. Yet, the uncertainty inherent in warnings remains a problem. The role of uncertainty is explored using two events, Hurricane Charley in 2004 and the Mothers Day tornado in 2008. Interviews were undertaken of people affected by each event, in an attempt to understand how they responded to the warnings, why they responded as they did, and how they perceived their personal risk. There were striking similarities in the findings, despite the differences between events. Both were well warned events, yet there appeared to be misunderstanding of the risk within the warned area. As the storm systems developed, the information that was provided changed. This variability in the progress of each event seems to have complicated understanding of warnings. While graphics were important to the warnings, different interpretations led to unwise responses. These findings suggest understanding the uncertainty associated with warnings, the spatial attributes of events, and one’s risk with respect to the event are keys to effective response, but these must exist long before a warning is issued.

Temperature Trends Relative to Rock Glaciers in the La Sal Mountains, Utah

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University of Mary Washington

As part of a larger study on the status of rock glaciers in the La Sal Mountains of southeastern Utah, an array of temperature data loggers was placed throughout the mountain range, beginning in the summer of 2002. One goal of the study, and the subject of this paper, is to determine whether the active rock glaciers in the La Sals now exist above or below the present lower limit of discontinuous permafrost. It should be noted, however, that there is no specific consensus on just what mean annual air temperature (MAAT) does coincide with the limit of permafrost. Haeberli assumed -2°C for rock glaciers in the Alps, but others have suggested -4°C . It is possible the rock glaciers may be able to accumulate and/or store internal ice in ways that does not happen in the ground. Long cores of banded ice have been cored from the Galena Creek rock glacier in the Absaroka Mountains of Wyoming.

If we presume that active rock glaciers contain internal ice in some form, and that they are therefore permafrost landforms, is the present climate such that the ice is being maintained, or are these features moving toward relict status? Recent studies have indicated that temperatures in the western United States exhibit a warming trend. To answer this question, the recent and current positions of the -2°C isotherm is estimated, using a model based on air temperature data, elevation, and solar radiation inputs. Data loggers give a detailed view of temperatures in the mountains, where elevation, aspect, and topographic position (e.g. ridge or valley) cause high spatial variability in diurnal and annual temperatures. However, the data logger record is, as yet, very brief, only going back to 2002. Therefore, an attempt was made to extend the record in order to observe temperature trends over a longer period, by using National Weather Service (NWS) stations nearby as proxies for temperature trends within the mountain range.

State Parks and Jim Crow, or America's Best Idea Meets America's Worst Idea

William E. O'Brien

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The Southern racial segregation system known as Jim Crow has been well-documented in areas such as education and transportation. However, little work has been published on the exclusion of African Americans from the region's state parks. Tracking the emergence and establishment of state park systems during the Jim Crow years, I document the slow official response toward making facilities available to Southern black populations from the 1920s until the mid-1960s. After ignoring African American needs entirely in the 1920s and early 1930s, a federal push during the New Deal for Southern states to provide facilities for its black populations resulted in only a few successes. Meanwhile, 'white only' state parks proliferated during that time. After World War II, segregated offerings increased significantly in number as state officials attempted to demonstrate that the 'separate but equal' doctrine was indeed working. They felt the pressure of federal lawsuits, filed by the NAACP, which sought to end Jim Crow in various arenas, including parks and recreation. Prior to integration in the mid-1960s, facilities available to African Americans in the region remained small in number and unevenly distributed due in large part to the NIMBY resistance of white residents near proposed sites.

“Setting the Stage: Cultural Landscape Creation and Evolution Along National Park Access Roads”

Stephen O’Connell
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Visitor experiences in national park settings are often dependent on tourists’ expectations set before they even reach their destination. A portion of those expectations are established on the journey to the park itself. This paper examines the ways in which park gateway communities transformed the landscapes of park access roads during the early stages of park development. These transformations were made as part of larger efforts to entice new visitors to park sites and to promote growth in communities surrounding parks. Some changes to the landscapes of park access were based solely on travel infrastructure developments, yet others were conscious plans to maintain aesthetically pleasing travel corridors for potential park visitors and were directed by community leaders and interest groups rather than National Park Service policy. Specific examples of the evolution of park access landscapes will be shown, with a particular focus on the link between Crater Lake National Park’s western access road and the community dynamics in its western gateway of Medford, Oregon.

KEYWORDS: cultural landscapes, national parks, historical geography

**HOMOGENEOUS SUMMER DROUGHT REGIONS IN THE CONTIGUOUS U.S.A., AND THEIR
RELATIVE SUSCEPTIBILITY TO MULTI-YEAR SUSTAINED DROUGHT EVENTS**

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Nine distinct regions of summer drought homogeneity in the contiguous U.S.A. are identified by Principal Components Analysis. The drought metric used is the Palmer Hydrological Drought Index (PHDI) for state climate divisions covering the common period 1895-2008. Length and severity characteristics of prolonged (≥ 3 yr) droughts during the instrumental period are analyzed for each climate division in all regions, and compiled into regional averages. A composite measure of average drought length times average drought severity for each region is indexed to rank regions based on their overall susceptibility to sustained droughts. Preliminary findings and a synthesis of existing literature indicate that the synoptic influences on drought in the Southeast and Gulf South regions are counteractive in that periods of summer drought generally coincide with periods of autumn/winter/spring wetness, and vice versa. This raises the question of whether large-scale climatic forcing mechanisms could ever align to produce the types of multidecadal megadroughts that have periodically impacted most of North America in the instrumental and paleoclimatic records.

Sustainable Development and Ecotourism in Chiapas, Mexico: Sustainable or Not?

Jonathan Otto

University of Kentucky

Since the 1990s ecotourism has gained popularity as an alternative form of tourism and development. Governments and development agencies present it as a substitute for a tourism industry that is increasingly viewed as unsustainable, promising the persistence of economic prosperity through the embrace of local environmental and social concerns. These perspectives have recently obtained currency in Chiapas, Mexico's southernmost state, and parallel increased efforts to expand tourism in the state. Discourse promoting this view of sustainable development and ecotourism in Chiapas is disseminated in a variety of sources including government documents and popular newspapers. However, despite its promises, some suggest that ecotourism may fall short of its desired goals, marginalizing local populations, and creating alternative pressures on resource use (Bandy 1996; Stonich 1998; Young 2003). Influenced by this critical work, and conversations with NGOs and people in Chiapas, the argument advanced in this paper is that ecotourism objectives in Chiapas are blind to indigenous social realities and histories, and that despite its promises to serve as an ecologically and culturally sustainable alternative to the current tourism industry, the development of ecotourism in the state could result in the destruction of the elements it promises to protect.

Quantifying Relationship between Landscape Factors and Lake Primary Productivity in Arctic Alaska using Remote Sensing Techniques

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Landscapes interact with lakes to influence their chemical properties and trophic levels. Arctic Alaska landscape are experiencing changes due to global warming. These changes are bound to affect the Arctic lakes in near future. Hence, it is necessary to understand how different landscape factors are related to Arctic lake trophic structure especially primary productivity.

In this research, multiple-regression model was run to analyze relationships between Chlorophyll a, Total Nitrogen and Total Phosphorus contents of forty Arctic lakes to selected landscape factors, at watershed level. Remote sensing and GIS tools were adopted to derive landscape variables.

It was observed that Chlorophyll a content has positive relationship with Percentage of Riparian Shrub where as negative correlation with Patch density of Moist Non-Acidic tundra, Shrub, and Fen. Fractal dimension index for snowbed class and landscape shape index for aquatic vegetation were negatively correlated to total nitrogen content in the lakes. Percentage of Riparian Shrub and Fen were positively correlated to total nitrogen content. Fractal dimensions of Shrub and Snowbed were negatively correlated with phosphorus content. Percentage of Barren land was positively correlated with phosphorus content.

Legacy Hg-Cu contamination of active stream sediments in the Gold Hill Mining District, North Carolina.

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Mined watersheds offer a unique setting to investigate the geography of fluvial processes, contaminated sediments, and alluvial deposits. This study examines the longitudinal trends of active channel sediment mercury (Hg) and copper (Cu) concentrations in the Little Creek-Dutch Buffalo Creek river system (254 km²) draining the Piedmont Province of North Carolina. The Gold Hill mining district produced gold (with Hg amalgamation) and Cu from 1844 to 1915. Ninety three active channel samples were collected at: (i) contaminated mainstem and (ii) background tributary sites from both high energy, low bars and mid-level bench surfaces. Two-parameter regression models combining the effects of both watershed-scale dispersal processes (Log distance) and reach-scale sediment transport (sand %) explain 85% of Hg and 90% of Cu variance in active channel sediments. Background models explain 84% of the variance of Hg and Cu in uncontaminated tributary samples using parameters related to grain-size, geochemical substrates, and mineral weathering sources. The importance of reach-scale factors in describing metal dispersal underscores the need for more research on the effects of bed sorting, selective transport, and sedimentation on legacy metal storage and cycling in mined watersheds.

Precursors to Southwest Florida Tornado Development

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Predicting and warning for tornadoes developing near the complex coastline of urban Lee and Charlotte counties in Southwest Florida is often a challenge. The closest National Weather Service Doppler radar is 130-180 km to the northwest. Four preliminary 2006-2008 warm season tornado cases examined from coastal southwest Florida showed striking similarities in tornado development. Southeast flow and Gulf Coast sea breeze development interacted with local topography to create cyclonic meso-circulations around 50 km in diameter. These circulations led to more predictable boundary collisions and enhanced convection with strong updrafts capable of supporting brief tornadoes. Twenty one additional tornado cases from 1980-2005 were found with similar atmospheric wind patterns. To gain more insight into the timing of various interactions, the cases were composited to show ambient flows and the degree of instability. The results of this study should help forecasters identify the patterns conducive to southwest Florida tornado development.

Snowfall Patterns and Processes in the Southern Appalachians: Preliminary Results from an Interdisciplinary Field Campaign, 2006-2009

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The complex spatial patterns of snowfall in the southern Appalachian Mountains remain a forecasting challenge due to incomplete information on upstream and mountain slope atmospheric processes associated with orographic lifting and snow particle development. This paper assesses the multi-year patterns as well as several individual snow events using data collected from NOAA/NWS cooperative observing stations, CoCoRaHS (Community Collaborative Rain, Hail, and Snow Network) volunteers, and interdisciplinary field campaigns on Poga Mountain, NC, during the 2006, 2007, and 2008 snow seasons. Field campaign data include snowfall and snow water equivalent (SWE) measurements, surface meteorological data (e.g., temperature, humidity, wind, and pressure), upper-air data from special rawinsonde releases both upstream and near the crest, observations of snow crystal morphology and degree of riming, and data from a vertically-pointing 24.1 GHz radar. Preliminary results indicate that 87% of the total observed snowfall (84% of SWE) at Poga Mountain during the multi-year period occurred in association with low-level northwest flow and that most of the northwest flow snow (NWFS) events were shallow (radar echo tops < 3000m asl). Analysis of several events (including the 1-2 Mar 2009 and 6-7 Apr 2009) highlights the pronounced spatial variability and vertical structure of the snowfall.

Amplifiers, Filters and Geomorphic Responses to Climate Change in Kentucky Rivers.

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Abstract. Responses to climate change are influenced by several levels of potential amplifiers, which exaggerate, and filters, which reduce, climate impacts. Climate forcings are mediated by ecological and hydrological processes which may amplify or filter impacts. Then, geomorphic responses may be threshold-dominated or dynamically unstable, producing disproportionately large reactions. Or, responses may be dynamically stable, whereby resistance or resilience of geomorphic systems minimizes effects of changes. A geomorphic response could represent (at least) two levels of amplification or filtering. For the Kentucky, Green, and Big South Fork Rivers, climate impacts in the early Quaternary were amplified by glacial reorganization of the ancestral Ohio River system, and by dynamical instability in the incision responses. Subsequent climate changes were filtered to varying extents. Using alluvial terraces as an example, the rivers show distinctly different responses. The lower Green River has extensive terraces recording several episodes of aggradation and downcutting, while the Big South Fork has no terraces. The Kentucky River is intermediate, with limited preservation of relatively recent terraces. Differences can be explained in terms of (1) filtering effects of constraints on fluvial responses imposed by incised, steep-walled bedrock controlled valleys; and (2) amplifier effects of periodic damming by outwash.

Re-envisioning Social Space: HOPE VI, Neoliberalization, and Urban Politics in Charlotte, NC.**Jeff Popke and Katherine Jones, East Carolina University**

HOPE VI is a public housing demolition and redevelopment program administered by the U.S. Department of Housing and Urban Development. Hailed as a new approach to urban policy, the HOPE VI program embodies many of the key tenets of neoliberal urbanization, including an emphasis on entrepreneurial forms of urban regeneration and a focus on individual responsibility. In this paper, we examine this HOPE VI model, focusing in particular on its implementation in Charlotte, North Carolina. In doing so, we highlight the epistemology of urban space that lies behind HOPE VI-style redevelopment. Charlotte's approach, we argue, bears the twin hallmarks of neoliberal urban policy: a concerted attempt to secure the participation of the private sector, and a significant focus on individual conduct and responsibility. This neoliberalization of space, we suggest, has served to depoliticize the process of urban change, with significant consequences for inner-city neighborhoods and residents.

An Analysis Of First Episode Psychosis In South Ulster, 1995-2007: Findings To Date

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Maynooth, Maynooth / Department of Geography, University of Kentucky, Lexington.**

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The objective of this study is to assess whether there is evidence to suggest the risk of developing schizophrenia and/or other psychotic disorders is influenced by environmental factors. Details were collected on all psychotic patients presenting for the first time between 1995 and 2007 in Counties Cavan and Monaghan (n=334). Patients' addresses at the time of onset were geocoded using Health Atlas Ireland. This enabled incidence rates to be calculated for 155 small areas (EDs) using 2002 census data for patients classified by diagnosis and other factors (e.g. gender). The observed variations in the incidence rates were tested for statistical significance using Monte Carlo techniques. Empirical Bayes estimates were used to minimise the spurious impact of small numbers. Over 150 socio-demographic indicators, including measures of deprivation and population change, were constructed using 1996, 2002 and 2006 census data. Spatial correlations were calculated between incidence rates and socio-demographic indicators.

The findings suggest that the risk of first episode psychosis is influenced by a number of factors that collectively operate in a random manner. However, the significant correlations suggest that incidence rates may be raised in areas having a particular social milieu. Further investigation of these factors may reveal important aetiological clues.

Regionalism and Elections in Tennessee

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Florida State University

Electoral politics in Tennessee are regularly conceived in two alternative ways. On one hand, the state is essentialized as a Republican stronghold on the edge of the US South. On another hand, Tennessee's electorate is differentiated into a mosaic of support and opposition for particular candidates, parties, or issues. This paper is a part of a broader study to demonstrate that electoral politics in Tennessee encompass both of these viewpoints simultaneously. Included are discussions of state-wide elections held between 1998 and 2008 that highlight both similarities and differences within Tennessee's electorate.

Online courses at a regional state university**Esther Long Ratajeski****Verdie Craig****Morehead State University**

Online education has been growing rapidly for the last decade. In the U.S., online education grew nearly ten percent from 2005 to 2006, and 12% the next year. This study examines reasons students took online classes at a regional state university in the South. During 2009, 149 students explained why they chose to take Geography 100 or 101 online. Although online education is commonly targeted at off-campus students who would not otherwise travel a great distance for face-to-face classes, we found that only ten percent of students cited distance as the main reason they took the course. Instead, almost half of all students reported scheduling conflicts as the main reason for enrolling in an online course.

Citizenship and its Meaning in Istanbul

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University of South Carolina

Istanbul is advertised as one of the major cosmopolitans and the city of religious tolerance and ethnic diversity. Yet, Istanbul's cultural landscape is dominated by the elements of popular nationalistic discourse. As citizenship rights are exercised through complex power dynamics in a highly political city space; minority rights and identities are often challenged. By analyzing the formation of the Turkish citizenship; this paper aims to answer how Turkish ethnic identity has taken over the definition of citizenship in public space, and how it reflects on the minorities' everyday lives in Istanbul.

Keywords: Istanbul, urban landscape, citizenship, nationalism, minorities

Retooling Historic Data with ArcGIS

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In 1978, Dolan et. Al., developed a methodology to quantify the dynamic nature of barrier island morphology using a 'common-scale' mapping system. The system was designed to overcome problematic issues common to dynamic environmental systems: ever changing landscapes and no stable ground information to serve as a (point of) reference. The methodology required the creation of 1:5000 base maps from USGS quad sheets and overlaying these maps on aerial photographs, marking the position of the high waterline. Trossbach (1989) refined this method, utilizing a zoom transfer scope and ERDAS Imagine. Even so, by today's standards, this method was cumbersome, slow, prone to error, and complex. We report on a new approach based on ESRI's ArcGIS application. ArcGIS allows not only for the input and storage of point data, but also allows data to be easily organized, converted to lines, mapped and analyzed. In addition, imagery and other relevant spatial data sets can be incorporated into a comprehensive project. The addition of new data, access to new analysis tools, and the ability to build custom techniques within ArcGIS offers a stable environment for continued research.

**Seasonal Change in ENSO Region Sea Surface Temperature Anomalies and
Atlantic Tropical Cyclone Activity**

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Department of Geography

Thomas R. Boucher, Plymouth State University Department of Mathematics

The relationship between the annual frequency of U.S. landfalling tropical cyclones and the El Niño–Southern Oscillation is examined utilizing Pacific Ocean sea surface temperature (SST) anomalies. U.S. Atlantic landfalling hurricane frequencies from 1900–2007 are regressed upon the seasonal change (SST_c) and seasonal mean (SST_{mag}) anomaly values using a Poisson regression model. The results indicate the numbers of U.S. Atlantic intense landfalling hurricanes and U.S. Atlantic landfalling hurricanes overall decrease as SST_c increases. After adjusting for the effect of SST_c , SST_{mag} did not have a significant effect on the occurrence of U.S. Atlantic landfalling hurricanes, regardless of their intensity. These results agree with previous work comparing tropical cyclone frequency among El Niño, Neutral, and La Niña phases.

**An Initial Evaluation of the Geopolitical Ontology in
True Knowledge's Answer Engine**

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ABSTRACT: The goal of knowledge computation engines, such as True Knowledge, is to automate reasoning over all systematic knowledge. In order to function, True Knowledge relies on an ontology to structure its data so the computer system can understand a user's query and correctly compute with information in its database. This paper compares and contrasts True Knowledge's understanding of basic geopolitical terms ("state," "nation," "nation-state," and "country") with their definitions in political geography, as articulated by an introductory textbook. This paper shows that True Knowledge understands these terms differently from the way they are used in political geography. This is especially true regarding "nation" and "nation-state." Furthermore, True Knowledge relies too heavily on understanding states and countries as geographic areas. This overwhelms its ability to reason with these entities in ways other than calculations about size or area. This paper concludes with a call for experts in the field of political geography to assist in the construction of a geopolitical ontology that can be imported into knowledge computation engines.

KEYWORDS: ontology, knowledge computation, state, True Knowledge, knowledge engineering

**Genes, Bodies, Economies and Environments:
How Political Ecology Benefits from Seeing Genetically**

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The gene, as an object and metaphor, mediates a complex international political economy. It pulls together actors as diverse as pharmaceutical companies, heads of state, anti-globalization activists, and conservationists and necessitates site-specific articulations of cultural imaginaries and resource-use decisions within an international forum. Not only does the gene transform political economic arrangements worldwide, but it also brings forth the emergence of previously non-existent organisms. I argue that political ecology has the conceptual tools to study the gene's articulation of ecology and economy in diverse translocal contexts. Additionally, political ecologists might benefit from attention to how the gene pulls together institutions, ecologies, actors, economies, and laws internationally. In this paper, I compare the commodification of the gene with political ecological discussions on the commodification of nature. The profitability of DNA relies on intellectual property laws that encourage the manipulation of genes and environments. This imperative to modify is embodied by different site-specific practices that redefine the boundaries of life and species, and thus tie together the realms of biodiversity, conservation, pharmaceutical research and speculative capital. I illustrate that by embracing the gene as an object of enquiry, political ecology must engage both political economy and ecology in novel ways.

**Civic engagement in Milwaukee's green space production: countering
neoliberalization of nature**

Parama Roy

Georgia State University

This paper explores the changing scene of urban green space management in Milwaukee within the backdrop of neoliberal political-economy, urban environmental governance, and the rise of civil society. Using qualitative data collected through twenty in-depth semi-structured interviews and archival research this paper attempts to reveal the contradictory implications of increasing civic involvement in Milwaukee's green space management. While most scholarly work on urban neoliberalism have emphasized on the socially regressive and environmentally damaging impact of neoliberalism, privatization in the hands of nonprofit, community-based initiatives have the potential to challenge and/or (partially) undo its negative impacts. Reflecting on such counter-neoliberal contributions of Milwaukee's civic greening initiatives this paper argues that the rising civil society should not be necessarily interpreted as an artifact of neoliberalism. Rather it should be recognized for its potential strength as an antidote to the negative effects of nature's neoliberalization. These civic initiatives contribute towards ameliorating environmental inequalities and improving ecological health in small, albeit significant ways. Although such contributions may seem marginal we should recognize the agency of civic initiatives instead of reifying the hegemonic representation of the inevitable and omnipotent neoliberal phenomena.

In-Channel Alluvial Benches in Small Watersheds: Examples from the Southern Piedmont**Dan Royall, University of North Carolina - Greensboro****Lisa Davis, University of Alabama**

A knowledge of the process dynamics and forms of river sediment storage is important for understanding the impacts of climate and land use change on sediment yield, longitudinal and cross-sectional stream channel morphology, and aquatic and riparian habitat. Among the important forms of sediment storage are in-channel alluvial benches: level, step-like fluvial deposits occurring at different heights above the channel bed but below the main floodplain surface. In this study, a subset of stream channel sites originally studied in 1964 was selected for resurvey to determine changes in the number of in-channel alluvial benches, and current bench occurrence and morphological characteristics. Up to three new (post-1964) bench levels were observed at all sites having less than 600 km² drainage area. Benches were generally found to be highly discontinuous, dominated almost exclusively by herbaceous vegetation, and well-stratified. The number and degree of expression of in-channel alluvial benches is likely to be a function of the combined influences of drainage area, topographic characteristics, land use history and climatic regime. It is possible that drought conditions in particular, which have been prevalent in the southern Piedmont over the last decade, have had a large impact on the growth of new in-channel alluvial benches.

**Local Food Strategies in the Agricultural Transitions of the Post-Tobacco Southeast:
A Status Report**

Richard A. Russo, University of Maryland

In the wake of significant changes in the U.S. tobacco market, some state and regional agricultural economic development agencies have promoted local markets (local food systems, niche farming for nearby urban markets, direct marketing, etc.) as a post-tobacco alternative. The local food system approach employs a *new agrarian* discourse that is at odds with the dominant paradigm of agribusiness traditionally promoted by state departments of agriculture.

Through an analysis of direct sales data from the U.S. Census of Agriculture, this study tries to determine if local food system approaches in tobacco-producing counties have strengthened relationships between producers and consumers over the decade 1997 to 2007. Results show promising increases in direct sales despite figures below national figures. The ability of these regions to successfully transition to new, profitable alternatives will have a significant impact on farmland conversion in several states as well as on agriculture as viable way of life in these often peri-urban areas.

Biocultural Diversity in the Amazon Borderlands: A basin scale GIS analysis

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The 12,000 kilometers of international boundaries within the Amazon basin form the axis of an understudied Amazon borderland region replete with ecological and cultural diversity. However, development planning, resource extractors, and demographic frontiers increasingly threaten these remote borderlands from multiple angles. This paper uses a basin scale Geographical Information System analysis to compare the ecological and cultural diversity of two definitions of Amazon borderlands with the biocultural diversity within both the lowland Amazon rainforest biome and the nine Amazonian states. Preliminary results using conservation units and indigenous lands as proxies for ecological and cultural diversity demonstrate increasing levels of biocultural diversity as one draws closer to the Amazonian international boundaries. This trend promises to influence protected area creation in the Amazon and underscores the need to devise management strategies capable of addressing the unique challenges and opportunities existing in these extensive Amazon borderlands.

Variability of Annual Growth across the Geographic Range of *Tsuga canadensis* (L.) Carr.**John Sakulich****Department of Geography, University of Tennessee****Justin Hart****Department of Geography, University of Alabama****Saskia van de Gevel****Department of Geography and Planning, Appalachian State University**

The mitigation of critical conservation challenges, such as rapid global climate change, requires accurate information on the general processes that affect range limits as well as specific factors that influence the dynamics of range boundary shifts. Spatial networks of tree-ring chronologies that span the entire range of a tree species can provide valuable insights on controls of the range limits of trees. Here, we present an analysis of annual growth variability of *Tsuga canadensis* across its current geographic range. Analysis of the mean sensitivity of 46 tree-ring chronologies across longitudinal and latitudinal gradients indicates latitude is the most important broad-scale geographic variable influencing the radial growth of eastern hemlock. Chronologies along the northern portion of the range have the highest mean sensitivity, especially near the northwestern range boundary. Longitude and distance from range edge are not strongly associated with growth sensitivity. These geographic patterns in climate sensitivity indicate that climate is a major limiting factor along the northern range limit of eastern hemlock, but in other locations such as the southern boundary, the species may be limited by biological or topographic factors.

Hurricane Storm Surge Spatial Representation and Visualization Using GIS

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Dr. Thomas R. Allen, Associate Professor, Department of Geography, East Carolina University

With North Carolina being one of the most at-risk states in North America for both direct and indirect hurricane strikes it is important that decision makers and the public have the most accurate and appropriate geovisualizations of the impacted area. Emergency managers have expressed an interest in new and advanced visualization techniques of storm surge in the hopes to better communicate risks and encourage compliance with evacuation of the general public. Two storm surge models, SLOSH (Sea, Lake and Overland Surge from Hurricanes) and ADICRC (ADvanced CIRCulation), have been evaluated for potential to visualize model output and expose the results for spatial analysis. This project investigates the appropriateness and tradeoffs for spatial characterization within GIS, data models, and data structures. Issues with both models such as grid type, spatial/temporal resolution and storage volumes will be discussed, with emphasis on visualizing in GIS. The future of storm surge visualization will be examined with experimental examples of 3D-storm surge maps, animations and online applications.

Unprotected sex in the midst of an HIV epidemic: how understanding the choice could improve Swaziland's condom campaigns

Sarah E. Schwartz, University of South Carolina

In response to the country's high HIV prevalence, Swaziland's government recently produced a report that included a recommendation to increase access to condoms on college and university campuses. This paper argues that access to condoms is already adequate and it is likely that students would be more apt to alter their condom-use behaviors if campaigns focused on why they choose not to use condoms. Focus group interviews with university and college students indicated that men—the partners in heterosexual relationships who most often have final say in condom-use decisions—often prefer sex without a condom because it is more enjoyable. However, before engaging in unprotected sex, they rationalize the decision in one or more of four main ways: 1. the woman appears healthy; 2. the woman is trustworthy; 3. alternative birth-control methods are available; or 4. the moment made it impossible to remember to use a condom. If on-campus condom campaigns challenged these rationalizations, it is possible that men would choose to use condoms rather than mentally eliminating the need for them.

Methods of Assessing the Perceived Threat Location of Hurricane Evacuees

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Hurricane evacuations in the United States are costly, chaotic, and sometimes unnecessary. Many coastal residents consider evacuation after viewing a forecasted graphic of where the storm is anticipated to make landfall. During the evacuation process, hurricane tracks commonly deviate from the forecast and many evacuees may not pay attention to track deviations after evacuating. Frequently a disconnect may occur between the actual landfall track, the official forecasted track, and the perceived track of each individual as they made their evacuation decision. Specifically for evacuees, a shift in track may decrease the hazards associated with a land-falling hurricane since evacuees perceive their threat level to be high at the time of evacuation. Using survey data gathered during the evacuation from Hurricane Gustav (2008) in coastal Louisiana, we calculated a type of Z score to measure the distance error between each evacuee's perceived landfall location and the actual landfall location. Furthermore we validate the authenticity of the above procedure by employing two additional methods of error assessment. A large regional error score might possibly be a predictor of evacuation complacency for a future hurricane of similar magnitude, although there are many other variables that must be considered.

Future Flood Risk in China's Poyang Lake Region

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Poyang Lake is the largest freshwater lake in China. It drains into the Yangtze River at its northern end through a narrow outlet. During the last half of the twentieth century average annual maximum stage and number of severe flood events in China's Poyang Lake region increased significantly. There are two primary causes for this trend. One was increasing Yangtze stage, which is the most important determinant of Poyang Lake stage. The second cause for increasing lake stage was levee construction at the margins of Poyang Lake that greatly limited lake size, and therefore, reduced floodwater storage. More recent changes affecting future flood risk include completion of the Three-Gorges Dam that is used to hold back floodwater for common annual floods. The reservoir's storage capacity, however, is too small to reduce downstream discharge during the most severe floods. Also, flood control policies were modified during the past decade, and now focus on permanent removal of some levees and the opening of others during severe floods to increase floodwater storage. These policies have not been fully implemented, and the threat of severe floods affecting densely populated areas in the Poyang Lake region has not been eliminated.

Racial/Ethnic Intermixing in Intra-Urban Space in Columbus, Ohio**Madhuri Sharma and Lawrence A Brown**

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This paper examines intra-urban intermixing in Columbus Ohio, using Census tracts as objects of study. Theil Entropy Index is used as a statistic to measure intermixing among multiple racial/ethnic groups and at nested scales of geographies. This research is motivated from growing racial/ethnic diversity in US urban spaces, more so in mid-sized MSAs in recent years that are fast transforming residential mosaics at local scales. How does growing diversity translate the residential racial/ethnic intermixing at local neighborhoods within Columbus, which typically represents a Sunbelt city within a Rustbelt region? What are the correlates of change, and what does the changing trend in intermixing among various racial/ethnic groups and nested scales of geographies say about the conceptual frameworks on segregation? This study finds that the race-based segregation is declining whereas there are instances of class-based segregation that has shown recent increase. Also, increasing diversity at the local neighborhoods does not necessarily translate into increased intermixing, suggesting further evidence of resurgent ethnicities. While the new developments by master-plan communities supported by builders and developers could be instrumental in these changes, there are other limitations posed by unsustainable urban plans that creates uneven geographies of intermixed (or segregated) spaces.

(Re)placing resources: capital, space and electronic waste**John Taylor Shelton****Department of Geography, University of Kentucky**

Although the internet has historically been described as being spaceless and placeless, recent research into the geography of cyberspace has focused on illuminating the inextricability of cyberspace and place. This paper hopes to further this research by focusing on the material production and destruction of the internet via the production of electronic waste. It is argued that the technoscientific fixes of high-speed broadband access and constantly improving consumer electronics are contingent upon a constant maintenance of the third world's subservient role in capital relations. Using insights from Stephen Bunker (1992), this paper sees electronic waste as both an anomaly and affirmation of previous thought regarding the interplays between capitalism and the spatiality of natural resources. Using Bunker as a frame, this paper builds on his formulations to argue that electronic waste requires a rethinking of the spatiality and lifecycle of natural resources and the political-economic relations they are situated within.

“Space in the Digital Age: A Case Study of the Online DiY Phenomenon”

**Benjamin Shultz
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Geography in the digital age faces a paradox. How can we reconcile the continued importance of clustering, on the one hand, with the emergence of distributed innovation and decentralization on the other? This research contributes to unraveling the digital paradox through a study of the online do-it-yourself (DiY) movement, which uses the web to facilitate decentralized collaboration and information exchange. This research examines the extent to which the movement is actually decentralized in the U.S. using a web-based questionnaire to solicit responses from DiY enthusiasts. While some of the respondents live in rural areas distributed throughout the country, most live in high human capital cities and benefit from face-to-face interaction. For DiY projects requiring skill and creativity, information is best communicated in-person. Enthusiasts in cities are more likely to share information, work together, and learn from one another. Respondents from low human capital areas are significantly more reliant on the web for DiY information and collaboration. Decentralized information exchange permits some enthusiasts to overcome the constraints of geography and collaborate online. However, the bulk of the movement continues to be associated with high human capital cities, suggesting that geographic concerns like place remain important in the digital age.

Private Property as a Commons: When Does the Public Have a Right to Real Estate not its Own?

Byron Smith, University of South Carolina

Here in the United States we tend to think of a common area or commons as public land like Yosemite or Yellowstone. Yet we entertain assumptions about some public lands that in essence make them a commons. When I go out to an eatery, for example, I expect service if am properly dressed. Yet this is a privately owned establishment. Blacks in the South historically were not afforded this treatment until 1964. If I am desperate and need a roof over my head can I expropriate a vacated home? Suppose I get sick and have no insurance or it is the middle of the night. Can I expect there will be an open emergency room nearby with enough doctors? If I want to watch my local professional football will they be on television? Will there be a blackout if my city does not have enough well off individuals buying tickets to the game? We tend to think of private property every day as a commons even if we do not think so.

The Spatial Distribution and Clustering of New Municipalities in North Carolina: 1990 – 2008**Russell M. Smith, Ph.D.****Winston-Salem State University**

Between 1990 and 2008, North Carolina experienced the second most municipal incorporations out of any State in the Union. Examining the spatial distribution of these newly incorporated municipalities (NIMs) within North Carolina reveals that the Piedmont Region, Metropolitan Statistical Areas and Micropolitan Statistical Areas saw greater number of incorporations than the Coastal and Mountain Regions or Non-Metropolitan Areas. Additionally, the clustering of new municipalities within individual counties reveals that a 'herd mentality' exists among incorporating entities as once unincorporated areas look to prevent the annexation of their community into an existing municipality and protect their 'distinct local identity'.

**Comparison of Changes in Runoff and Channel Morphology as a Consequence of Urbanization
for Three Chattahoochee River Subbasins, Georgia, USA**

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Hydrologic analysis was performed for three similar-size Chattahoochee River, Georgia, subbasins for the period 1961-2005, each reflecting differing degrees of urbanization. Mean yearly runoff volume was found to be higher for the highly urbanized Peachtree Creek subbasin than for the less urbanized Big Creek subbasin and the nearly rural Snake Creek subbasin. A comparison of median direct runoff relative to median streamflow for the periods 1961-1989 and 1990-2005 indicated 6.0, 11.7, and 2.8 percent increases for Peachtree Creek, Big Creek, and Snake Creek, respectively. Analysis of basin outlet cross-section geomorphic data obtained over the past four or more decades for the same three subbasins revealed markedly different patterns; while both Snake Creek and Big Creek showed evidence of channel widening and deepening since the onset of increased urbanization (roughly 1970), Peachtree Creek, the basin with the longest history of urbanization, showed no significant change in channel area during the entire period for which field measurement data were available, suggesting that the majority of the channel adjustment for Peachtree Creek may have accompanied earlier phases of development.

Masculinities in KY: Perspectives of rural migrant farm workers**Mitchell Snider****University of Kentucky****Dept. of Geography**

This paper is concerned with the construction of gender identities, specifically masculinities in transnational migrant populations in rural Kentucky. Gender is navigated, (re)produced and interpreted by individuals through “reiterative power of discourse to produce the phenomena that it regulates and constrains” (the symbolic construction) (Butler 1993, 95). It is also mediated through other people, institutions and space/time (as a social relationship). Transnational studies approach questions of multiple identities, complex articulations of these identities in multiple overlapping spaces that include incorporations and resistances to globalizing effects of neoliberal economies, urban progress and national belonging (Silvey and Lawson 1999). This paper is placed at the intersections of these two literatures. The purpose is to give a third reading of masculinities in some social contexts to problematize the over generalization of masculinities as a social category by engaging in theoretical approaches that highlight the contingent and contradictory expressions of masculinities as they are articulated through certain aspects of transnational spaces. This paper is taken from a thesis conducted with 14 migrant men on two rural Kentucky horse farms.

How a backcountry entrepôt developed at the site of a pre-Columbian village

David Southern

Duke University Press

In the 18th century the Indian population of the North Carolina piedmont was replaced by an influx of Europeans, primarily of British stock. At the vanguard of the latter group were the explorers and hide traders who traveled the Indian Trading Path deep into the southeastern interior. This ancient path followed a diagonal course very similar to that of present-day Interstate 85, and its northern terminus was at the head of ocean-going shipping on the James River in Virginia. At favorable nodes along the Trading Path, Indian villages appeared and disappeared in cyclical patterns of formation and abandonment. This paper examines one particular node at the junction of the Trading Path and the Eno River and introduces contemporary documents that describe it first as Occaneechi-Town (1701), then as abandoned Indian oldfields (1737), then as the site of James Watson's tavern (1753) on the Trading Path where Orange County court met in 1755 while a permanent courthouse was being constructed on adjacent land. First called Corbinton, then Childsburgh, then Hillsborough, the emerging county town took on urban functions to serve the court that met there quarterly, to serve the traveling public, and to serve a growing population of permanent residents.

THE NEW GEOGRAPHIES OF APICULTURE

Tony Stallins, Department of Geography, Florida State University, Tallahassee, FL

The goal of this paper is to situate beekeeping (apiculture) as a topic of research for geographers. The emergence of Colony Collapse Disorder in the European honeybee, and the recognition of the dependence of food production on pollination are motivations. However, there are many more facets of beekeeping, pollination services, and honey production that have underappreciated resonance with geography. Apiculture constitutes a global commodity chain. Honey is a product, like wine, that has a context of place. And like other foods, its quality is constructed, with ethical issues hidden in its production. Local debates over access to floral resources to global trade wars over the price of honey and pollination services invoke issues from political ecology. Domesticated bees and their pests are transported around the world, and generate debates about alien versus native and the social construction of nature. The bee is a cartographer, a source for bioinspired mapping and problem-solving in spatial science. Perhaps lingering stereotypes of beekeepers have limited geography's interest in apiculture. Given the interdisciplinary nature of beekeeping, geography is an academic discipline well-suited to its study, especially now that our precarious dependence upon the bee has been brought to light by Colony Collapse Disorder.

Frequency/Magnitude of Aeolian Events

Christy Swann

East Carolina University

This research uses a frequency/magnitude analysis of aeolian events, conducted on the *Outer Banks of North Carolina*, to uncover the temporal distribution of geomorphic work imparted on dune landscapes. Wind events are defined by wind blowing over the threshold of motion, in a uniform direction, for a minimum of three consecutive hours. This methodology examines the long-term record of the process conditions that operate in the Outer Banks, with the idea of providing context in which to place short-term observations (events).

Using a partial duration series, all events are standardized by the single highest event within the long-term dataset. The magnitude of events are calculated using a modification of Lettau and Lettau's (1977) sediment transport equation based on the event average wind speed and duration. A wind potential index is created to standard events of varying magnitudes. The goal of this research is to correlate potential sediment transport to event magnitudes and examine the temporal distribution of geomorphic work.

Paleoecological Evidence of Late-Holocene Forest Expansion in Central South America

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Lowland eastern Bolivian is an important location for paleoenvironmental research because it lies near the climatically-controlled boundary between the Amazon basin rain forest and the seasonally dry savannas to the south. Multiproxy analysis of a 2.4 m sediment core from a lake in the region, Laguna Yaguarú, yielded a >5600 year record of environmental change. Evidence from pollen, charcoal, and stable carbon isotope analysis indicates three distinct phases in the history of Laguna Yaguarú. The lake basin was dominated by a cattail marsh from the time the lake formed sometime prior to 5600 BP until ~5270 BP, when the basin was altered by a flood that deposited a 15 cm-thick mineral facies at the core site. After the flood, Laguna Yaguarú became an open water lake, and was surrounded by a mixture of savanna and dry forest vegetation. An increase in dry forest vegetation around 1200 BP, indicated by a sharp rise in *Celtis* pollen and lower charcoal concentrations, suggests wetter conditions that are likely the result of a stronger South American monsoon. The timing of the moisture increase agrees well with other late-Holocene records of paleoclimate in central South America.

Bluegrass Hegemony and the Struggle for Old Time Ascendancy in Eastern Kentucky

Deborah J. Thompson, University of Kentucky

At first glance, Bluegrass and Old Time seem to be very similar types of music, but the musical communities in these are not necessarily the same. There can be quite a virulent reaction when old time music is mistaken for Bluegrass. Many old time aficionados feel that Bluegrass has “taken over” that they must consciously reject it. One series of events that has taken place over the last two summers is meant to revive an interest in old time music in the Tri-County area of Knox, Laurel, and Whitley counties in southeast Kentucky. This paper will examine these events, their genesis and context, to see if a geographical analysis will help determine what factors help differentiate old time music from bluegrass, and how participants enact traditional music in eastern Kentucky.

**Inclusion and Exclusion in Memorial Landscapes: The Relocation of the Bronze Soldier
Memorial in Tallinn, Estonia**

**Meagan Todd
University of Kentucky**

This paper examines the relocation of the Bronze Soldier memorial in Tallinn, Estonia to illustrate how memorial monuments work as spaces of inclusion and exclusion, and how they provide a useful entry point into analyzing the spatial politics of remembrance within a society. First, I am going to review literature on invented traditions and imagined communities to understand the political nature of history and collective memory in order to show that the decision to relocate the Bronze soldier can be understood as a political act. Then I will look at the discussion of the auto-dialectization of the 'other' within societies, to show how the removal can be seen as a way the Estonian government actively seeks to create distance from their Soviet past and Russian practices of memory. Finally, I will explore how liberal landscapes of memory can be inclusive and exclusive, and how the relocation of the Bronze Soldier illustrates how liberal governments can exclude “other” cultural spatial practices of memories and mark them as inferior.

Rediscovering Rural Appalachian Communities with Historical GIS: A Case Study of Summers County, West Virginia

**George Towers
Concord University**

Abstract: From the late 19th century until World War Two, agrarian southern Appalachia was a patchwork of small, close-knit farm communities. This historic rural settlement pattern is locally recorded in community case studies by ethnographers and historical geographers but has not been mapped systematically. This paper explores the hypothesis that GIS analysis of historic topographic maps adequately identifies the boundaries of bygone southern Appalachian agricultural neighborhoods. Using the ArcGIS cost allocation analysis function, least cost regions are generated around neighborhood nodes based on the energy cost of foot travel relative to distance and slope. These prospective agricultural neighborhoods closely match ethnographers and historical geographers' spatial descriptions. Mapping historic Appalachian agricultural neighborhoods provides an important basis for comparison with past and present settlement patterns. The research method is significant because it is easily replicated and may be extended across southern Appalachia and the past century.

A Politics of Education through the Teaching of Political Geography: Lessons from the Cambodian Genocide

James A. Tyner, Kent State University

Between 1975 and 1979, the Khmer Rouge carried out genocide in Cambodia. Approximately two million people died—through starvation, disease, torture, and murder. While it is commonly understood that the Khmer Rouge set out to destroy existing social infrastructures (e.g., health, education, religion), what is less known is that the Khmer Rouge sought to replace these structures with their own ideologically-based versions. This paper, based on a political geography text published by the Khmer Rouge in 1977, seeks to recover the pedagogic practices that served to ostensibly justify and legitimate the brutal practices surrounding genocide.

Invasive species distribution modeling (iSDM): Do we need absence data and dispersal constraints for accurate predictions?

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Species distribution models (SDMs) are increasingly used to predict spatial patterns of biological invasions. However, invasive species distribution models (iSDMs) face special challenges because (i) they violate modeling assumption that the organism is in equilibrium with its environment, and (ii) species absence data are often unavailable or believed to be difficult to interpret. This often leads researchers to generate pseudo-absences for model training or utilize presence-only methods. I examined the hypothesis that true absence data, when accompanied by dispersal constraints, improve prediction accuracy and ecological understanding of iSDMs. I evaluated the impact of presence-only, true-absence and pseudo-absence data on model performance using an extensive dataset on the invasive forest pathogen *Phytophthora ramorum* in California. Two traditional presence/absence models and two alternative presence-only models were developed based on 890 field plots of pathogen occurrence and several climatic, topographic, host and dispersal variables. The effects of all three possible types of occurrence data were evaluated with receiver operating characteristic and omission/commission errors. Results show that prediction of actual distribution was less accurate when true-absences and dispersal constraints were ignored. Presence-only models and models without dispersal tended to over-predict the actual range of invasions. I suggest that true-absence data are a critical ingredient not only for accurate calibration but also for ecologically meaningful assessment of iSDMs.

**How Far to the Nearest Arsonist? Protecting the State Through Culture in
Great Smoky Mountains National Park**

Chris Van Dyke

University of South Carolina

While the frontier concept has often structured narratives about American history, its lack of explanatory power and theoretical nearsightedness has led researchers to abandon its conventions in favor of a more complex investigation of the past, but even so, the frontier has remained vivid in popular representations of the American West and many take for granted its ability to capture the essence of our national identity. During the late-1930's and early-1940's the National Park Service (NPS), as it planned a cultural preservation agenda for the landscape of Great Smoky Mountains National Park (GSMNP), sought to position local history and culture as the product of a frontier environment. This paper argues that favoring this interpretation led NPS officials to ignore the particularities of context in an effort to shape a distinctively national landscape. Adopting an object-oriented framework to landscape analysis, I suggest the frontier was a useful heuristic through which the state mobilized a cultural ideal to empower itself. Applying this portable frontier narrative to a grounded landscape reconvened history, letting the state position itself as indissolubly connected to the nation. This objects-based framework moves us beyond questions of authenticity, offering instead a fuller description of how landscape functions.

The European Blue Card Initiative: Managing Skilled Migration

Micheline van Riemsdijk

University of Tennessee

This paper investigates the management of skilled migration in Europe, particularly the European Blue Card initiative that aims to attract more skilled workers to Europe. European member states are competing with Australia, the United States and Canada to try to attract skilled workers, and the Blue Card is designed to ease migration restrictions for third country nationals who possess skills that are in high demand. An analysis of migration documents and in-depth interviews with policy makers in the European Commission in Brussels reveals that structural barriers to skilled migration remain despite efforts to create a common European migration policy. In this paper I offer three critiques of the Blue Card initiative. I argue that the Blue Card does not alleviate restrictive migration policies in Europe, that the Blue Card initiative is more concerned with security and integration issues than with migrant rights, and that the European Blue Card alone is unlikely to increase the number of skilled migrants in Europe. Xenophobic attitudes and fears of rising unemployment make it difficult to create a common skilled migration policy in Europe.

Towards a Queer Heterotopology as a Framework for Study

Tim Vatovec, Department of Geography, The University of Kentucky

The social construction and study of space continue to be important projects within the field of geography. This paper proposes a general framework for the study of queer spaces based on Foucault's concepts of heterotopias and heterotopology. Feminist and social theories concerning the concepts of both queer and space are used to support this framing. The resulting sketch offers a different perspective on how alternative spatialities may be approached as subjects of study within geography.

Sunset or Rebirth of an Industry? Furniture Foothills Factory Case Studies

Susan Walcott
University of North Carolina at Greensboro

The furniture industry of the North Carolina-southern Virginia piedmont region declined precipitously over the last two decades following a century of dominating U.S. production. The method of examination for discussing this situation is a series of case studies involving several pairs of factories in the same “furniture foothills” regional location. Theoretical frameworks employed include structurationism, which provides room for the impact of the individual decision maker acting within a constrained set of circumstances, and global production network literature which offers the catalyst for systemic change. The research hypothesis is that the manager matters; competitive advantage remains in the U.S. furniture industry, and the ability to improve performance by using process techniques such as hybrid forms of lean manufacturing has increased. The requirement of changing the corporate decision-making culture makes this a particularly challenging innovation to adopt, but also holds potentially transformative positive long term consequences.

KEY WORDS: furniture industry, case study, competitive advantage

The Family Geography Project: Creating Geographies and Spatial Learning

Johnathan Walker

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For geography students grasping geographic concepts and making connections to social and economic change can, for some, take a considerable amount of time to master. However, fostering the skill of thinking geographically is the most important lesson that we can transfer to students and at the earliest possible juncture, no matter what the field of inquiry or discipline. A method to accelerate this process is to explore one's own family history and geography, about which most students have some level of curiosity. The family geography project is a written exercise researched using multiple methods to create a geography from one's family history. The development of this tool blends together a great many experiences and investigative strategies: oral histories, interviewing, archival research, and bibliographic research to build a comprehensive narrative that, in essence, creates a human geography of the family.

TUPELO HONEY PRODUCTION IN NORTHWEST FLORIDA: LIVELIHOOD PRESERVATION AND FOREST CONSERVATION IN A CHANGING RURAL LANDSCAPE

Kelly Watson, Department of Geography, Florida State University, Tallahassee, FL.

This paper presents the results of a two-year study of cross-scale power relations and conflicts of natural resource access faced by a forest-dependent community of honey producers in Northwest Florida. Tupelo honey is a valuable regional industry, and its production is a long-time rural livelihood practiced by generations of skilled beekeepers. Beekeepers have worked bees along the banks of the Apalachicola and Chipola Rivers for more than a century, and tupelo honey production helps define this unique and culturally rich region. However, forests that have long been used for honey production are undergoing a number of changes that render them either unproductive or inaccessible. Although changing river hydrology is pervasive in discussions of the future of the tupelo honey industry, my results show one of the most significant threats facing both beekeepers and the forest is the rapid suburbanization of the landscape. As Florida's Deep South is divided up into parcels of real estate prime for development, beekeepers struggle to maintain access to suitable hive locations. Development impacts beekeepers both directly, through forest clearing, and indirectly through increased costs, renegotiation of leasing agreements, zoning restrictions, and vulnerability to insecticides. As a result, beekeepers are increasingly dependent upon public lands and at the mercy of restrictive public land managers.

**The Place of the Market and Tourism in Preserving Heritage Spaces in
New Bern, North Carolina**

**Matthew Watterson
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East Carolina University**

The use of tourism as a means to preserve and promote historic preservation is a contentious subject in that it commodifies significant historic spaces for purposes of profit. This is evident in the case of urban heritage tourism in New Bern, North Carolina, which relies heavily on historic preservation to draw tourist dollars and foster a unique sense of place. Using interviews with stakeholders in the New Bern heritage and tourism industries along with literature research, this paper seeks to understand the relationship between tourism and heritage as it pertains to preserved historic structures. This article asserts that the commodification of heritage spaces for tourism purposes can be mutually beneficial, and that the use of adaptive reuse as well as more scholarly preservation paradigms in New Bern, North Carolina is justified. This conclusion is supported by identifying the nature and definition of heritage, understanding the requirements of investment capital according to stakeholders, and noting that flexibility and adaptability are paramount for long term sustainability of heritage spaces.

Meatpacking, Place and Identity: Spatial Tensions in American Immigration Politics

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Immigration has been a prominent and often emotive issue in recent American politics. This state-level analysis of the legislative debate and policy-making related to immigration takes a geographical perspective that emphasizes popular constructions of place. Through a focus on the efforts to suppress illegal immigration in Kansas, this paper explores how political discourses reveal the challenge to place identity wrought by immigration, the connection between place and ideology, and the struggle between open and closed senses of place. It also posits an understanding of “internal colonialism,” whereby through the marginalized domestication of certain industries such as meatpacking, the cultural effects of the necessary rise in immigrant populations constitute an antagonistic political counterweight to the perceived economic benefits. The paper concludes by noting the complex and contested terrain of immigration politics, and the challenge to geographical imaginations posed by the changing American population.

Housing Booms, Urban Sprawl, and the Commuting Transition

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Cities grow in discrete building cycles in which large amounts of housing and other buildings are built. Residents of newly built areas can be expected to have high commuting times because they are far from employment and may have slower roads or limited street connectivity. However, over time a transition will occur as non-residential growth within the area will continue, increasing densities and offering reduced commute times. This commuting transition can be observed in the growth of 113 metropolitan areas between 1980 and 2000. Areas developed during the most recent housing boom almost always have the highest commuting time of any area within each city, which is no longer the case in subsequent years as growth moves outwards. Explaining the magnitude of this increased commuting time is however more difficult. Despite this, focusing on the impacts of building cycles avoids the pejorative sprawl label and reconceptualizes this sort of low density, auto-dependent urban form as a normal part of the growth process. Sprawl can be seen as a temporal process, and one that is likely to be short lived.

Custer May Have Died For Our Sins But He Did Not Go Away

Gerald R. Webster, University of Wyoming.

The geographic distribution of place names on the landscape reflects the power of different groups vying for control of a locale at different points in history. The purpose of this paper is to examine the geography of place names in the United States using "Custer." George Armstrong Custer was controversial during his life, and he continues to be so 130 years after his death. In spite of the controversy surrounding his life, his death at the Little Big Horn in 1876 elevated him to the status of a national hero. As a result he was memorialized by the widespread naming of streets and other features after him in the years after his death. This work has identified 557 streets and 226 human and physical landscape features named "Custer" including counties, cities, mountains and water bodies. This preliminary analysis finds that Custer features are most plentiful in the West, with fewer in the South and Northeast. Notably, some of the highest concentrations of Custer place names are found in the locales where Custer undertook some of his most controversial actions.

The Importance of Biodiversity, Subsistence, and Gender in Amazonian Home Gardens

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The Amazon rainforest and inhabitants currently face challenges from environmental change and globalization. While researchers have examined indigenous responses to environmental and societal change, few have investigated the important role of home gardens. In this case study, we analyze home garden composition and use in the Peruvian Amazon, taking particular interest in the relationship between gender and species knowledge. We gathered species diversity, social, economic, and cultural data on home gardens through direct observation, participatory mapping and semi-structured interviews with both male and female heads-of-household in the gardens. Our results find home gardens to be reservoirs of diverse species useful primarily for subsistence and managed equally by both men and women with no discernible differences between genders.

SALIENT SPATIAL CHARACTERISTICS OF U.S. MANUFACTURING DECLINE, 2000-2008**James O. Wheeler****The Merle Prunty, Jr., Professor Emeritus of Geography*****University of Georgia***

Since 1980, the U.S. manufacturing workforce has declined precipitously, from approximately 20.3 million workers to fewer than 13.8 million in 2007, with a loss of more than 5 million since 2000. While manufacturing remains important in the traditional manufacturing belt, extending from the Midwest to the East Coast, in recent decades it has spread significantly to the South and West, particularly California. This study focuses on manufacturing employment losses among U.S. metropolitan areas in the twenty-first century, with the greatest absolute declines being in Detroit, Chicago, Atlanta, and New York. Other metropolitan areas with large losses are located in the Mid-Atlantic region, the Midwest, and the South. Although Los Angeles suffered the largest number of job losses from 2000 to 2008, California as a whole decreased by 23 percent, slightly less than the U.S. decline of 26 percent. Manufacturing employment shrinkages are attributed both to endogenous and exogenous factors, primarily job outsourcing due to low wages in less prosperous countries.

Development of the Black Economy: Separation or Segregation**Bobby M. Wilson****University of Alabama**

To realize surplus value, capital needs all workers to buy. It has to sell. Instead of a separate economy beyond the reach of white capitalists, segregation kept the black economy within their market reach. Shielded from the powers of the larger economy by fixed boundaries, a separate black economy contradicts the need of capital to expand commodity exchange and consumption. Separation implies that the black economy is outside, beyond the reach of white capitalists. The tension between race and capital's need to expand commodity exchange and consumption for the sake of capital accumulation asserts itself in unexpected ways across time and space. The development of the black economy is a product of this tension.

Effects of Cold Air Intrusions on the onset of the South American Monsoon**Emily Wright, Rosana Nieto Ferreira, Tom Rickenbach, Richard Barnhill****Department of Geography
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During the austral spring, the interactions between the southward-moving intertropical convergence zone with cold air intrusions that progress equatorward contribute to the complexity of the timing and regional differences in South American Monsoon onset. The goal of this paper is to study the impact of cold air intrusions on the onset of the South American monsoon. Previous studies have shown that cold air intrusions undergo a seasonal transition in structure, intensity and propagation. In this study the 1979-2007 NCEP/NCAR reanalysis data will be used to produce a composite analysis of the dynamic and thermodynamic structures, intensity and propagation of cold air intrusions that occur before and during monsoon onset. Those composites will be used not only to study the effect of cold air intrusions on onset in the Amazon basin, but also to study the effect of cold air intrusions on the abrupt onset of the monsoon season in the region of the South Atlantic convergence zone. The relative importance of the roles of gradual seasonal thermodynamic priming of the atmosphere versus the potentially rapid dynamical triggering of onset associated with cold air intrusions will also be evaluated on a regional basis.

Analysis of spillover effects in tourism flows

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The main purpose of this research is to investigate and estimate the spillover effects in inbound and domestic tourism flows to 341 cities in mainland China. The key determinants of tourism flows are also studied in the spatial econometric model. To capture the spillover effects in tourism flows and identify factors contributing to the unevenly distributed tourism flows, various spatial econometric models are estimated. The results confirm the existence of spillover effects in both inbound and domestic tourism flows, and suggest that infrastructure factors, tourist attractions and the SARS outbreak are significant determinants of inbound and domestic tourism flows. In addition, while the degree of openness to inbound tourists is important for inbound tourism flows, the potential of the local market is the key to enhancing domestic tourism flows. From investigation of the evolution of estimated coefficients over time, it is found that the influence of tourism infrastructure on tourism flows has increased, while the influences of tourist attractions have decreased.

Keywords: spillover effects, tourism flows, China

