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Abstracts**

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Participatory GIS in Zoning Plan:  
Case Study Madu Ganga Estuaries in Sri Lanka

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Participatory Geographic Information Systems (PGIS) have been increasingly employed for decision-making in planning, environmental conservation, zoning, and development. This research explores the use of PGIS and its significant role for zoning plan. PGIS methodology intends to incorporate local knowledge, increase data access, multiple realities, and bottom up decision-making in zoning plan.

This research presents the lessons learned from a case study of Madu Ganga estuary in Galle District, Sri Lanka. Madu Ganga is an extraordinarily stretched of water body (an estuary) with abundant of natural resources and beauty. In recent years, Madu Ganga faces serious environmental threats due to increase with various human activities and overexploitation. A team of geographers from the Center for Environmental Studies (CES), University of Peradeniya, Sri Lanka has been invited by the Coastal Resource Management Project (CRMP) to undertake the zoning study, in order to protect and manage this valuable environment. Various participatory methods including PGIS applications were adopted and affected communities got involved in developing a zoning plan. The study illustrates that the use of PGIS approach is effective in incorporating local people in planning and support affected people to actively involve in development activities in their own communities.

## The Politics of Southern Hospitality and the Great “White” Outdoors: The (In)Visibility of African Americans in State Travel Guide Photographs

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Socially responsible marketing enhances, rather than minimizes, the place of racial and ethnic minorities in tourism promotions such as brochures, web sites, and state travel guides. Travel spaces can be visually coded in ways that encourage or discourage African American travel. The apparent absence of black bodies and faces in tourism marketing has profound implications on the sense of belonging communicated to African American tourists and white travelers sensitive to these issues. We examined the visibility of African Americans within the 2010 travel guides of North Carolina and South Carolina, which represent the “face” of each state’s tourism industry. Analysis focused on the frequency and manner in which African-Americans were displayed in promotional photographs. Special attention was devoted to the frequency of African Americans being pictured in natural settings and doing outdoor leisure activities. Previous work has noted that advertising images tend to represent the great outdoors as a “white” space with few African Americans present, which perhaps explains, in part, the historical reluctance of African Americans to engage in outdoor activities. Our results indicate that the likelihood of finding African Americans in travel guide photographs is quite low across both states, especially in nature and outdoor-related photographs. We discuss the implications of these results for moving toward a critical understanding of the racial politics of hospitality in the “post-Civil Rights” South as well as the long term plans of RESET (Race, Ethnicity, and Social Equity in Tourism), a new outreach and research initiative base in East Carolina University’s Center for Sustainable Tourism.

## Using Geospatial Technologies to Preserve Cultural Landscape: Archiving Toomer's Oaks.

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In autumn 2010, Auburn University's Toomer's Oaks were lethally poisoned, allegedly by a supporter of rival University of Alabama. The two trees have stood corner of the university campus for 130 years and have since become a focal point for both the academic and larger community identity. The certain demise of Toomer's Oaks highlights not only the symbolic meaning of landscapes, but also draws attention to ways in which geospatial techniques may be employed to document and preserve threatened cultural landscapes.

Recent scholarship in the fields of archaeology and cultural resource management have highlighted the contribution that geospatial technologies can make to the identification, documentation, and reconstruction of material culture. Much of the literature available, however, focuses primarily upon the methods used and fails to address the meaning embedded within cultural landscapes. The work presented in this paper presents a case study of Toomer's Oaks suggests how geographers might use 3-dimensional remote sensing technologies, specifically T-LiDAR, to document and virtually preserve the cultural landscape and its symbolism.

Land-Use and Water Quality in the  
Cape Fear River Basin, North Carolina: A Research Agenda

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North Carolina contains over 40,000 miles of streams and rivers each collecting surface runoff from a variety of land-use types. This paper reviews literature that analyzes relationships that exists between water quality, land-use policy approaches, varying land-use types, and water quality monitoring techniques in North Carolina. The overall purpose of this paper is to argue that while much of the literature has focused on how state regulations impact water quality in North Carolina, some of the broader land-use, demographic, and local land-use policy pressures that have impacted streams in the Cape Fear River Basin have been overlooked. It will be suggested that it is difficult to apply a standard strategy for improving water quality over heterogeneous landscapes. A research agenda is established in an effort to identify potential relationships that exist between water quality, local land-use policies, demographic pressures and land-use spatial patterns within the Cape Fear River Basin.

## The Mysterious Mammoth Cave Mushroom Mishap: Historical Geographer as Sleuth

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This paper uses the failure in 1881 of a short-lived business venture, the Mammoth Cave Mushroom Company, as a jumping off point for exploring the origins and diffusion of cave production of mushrooms. It identifies European antecedents, particularly an extensive mushroom industry in the limestone catacombs of Paris, and attempts to trace the diffusion of culinary mushroom production and use to the U.S. This background is then used to explore the particular history of the Mammoth Cave Mushroom Company, which was formed in August 1881 during a particularly contentious period of family struggle for control of the cave, its resources, and tourism operations. The Mushroom Company came to an end shortly after December 1881, when coal oil, in an act of sabotage, was poured by an unknown person on the mushroom beds. Understanding the state of mushroom production technology at the time allows a hypothesis about the perpetrator to be formed.

## Capturing Olympic Space in Transition: London 2010

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International event tourism has received academic attention, yet pre-event construction for such tourism has received limited attention. When such attention is given, it usually consists of a focus on financial expenditures, gentrification processes, and the forced migration of marginal groups. The researcher examining tourism event and pre-event spaces, through investigation, uses space and experiences space, especially such transitional spaces of the pre-event. What we aim to add to the tourism literature is how we, as researchers, experienced the transitional space of the pre-event London Olympics 2012. We captured our experiences through film. The goal is to share how we entered the space and how we as tourists and athletes experienced London Olympics 2010. This will be illustrated through reflections on our time as tourists at the Olympic construction site for the main arena, as well as, our time performing as athletes in creating our own triathlon on and around the transitioning space of the Olympic site.

Finding Carl Sauer's Sosua: The Dominican Republic's vanishing Jewish landscape and a possible future for material culture and critical geography

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This paper explores the vanishing Jewish landscape of the Dominican Republic. Sosua, a former dairy cooperative town, was colonized by German and Austria Jews fleeing Europe during the months before the beginning of World War II. At the invitation of the Dominican Republic's dictator, Trujillo, Jews were settled in Sosua where they founded a once-thriving agricultural community. What has happened to the material culture that these forced migrants created and what does it say about the relationships of globalization, human rights abuse, and landscape erasure? This question is posed and a possible research agenda pertaining to it is proposed.

# GIS Analysis of Parcel Density and Value near Public Lands in Western North Carolina

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Federal land managers such as the US Forest Service and National Park Service administer large tracts of land that provide recreational opportunities, resource extraction, and act as buffering agents against urban growth. Public land boundaries, topography, and wildland-urban buffering techniques play an increasingly important role in restricting the growth of urbanization, particularly among newer exurban developments. This study focuses on a four county region in western North Carolina that includes the Asheville metro area. GIS-based parcel density surface analysis was performed on federal and state land holdings within the study region to assess the extent of development. In addition, a proposed 350 meter buffer was applied to the public lands to assess their potential for alleviating stresses that increased density may have upon conservation areas. A 2,500 foot parcel buffer was applied to public lands to determine the difference in property values in proximity to public lands. Results indicate a large difference between parcels within the buffer and the county mean. In addition, a ModelBuilder tool was created to automate aid to land managers in this buffer and density analysis. Results indicate formerly effective growth barriers of slope and public land ownership are increasingly less effective in mitigating parcel density within the region.

“Considering Schools in Context: Should School Experiences Impact the Ways We Think About Policy?”

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Boston’s desegregation crisis in the 1970s was in part a conflict between racially and ethnically defined neighborhoods and the federal judiciary. I argue that the judiciary conceived of the school as an abstract space, defined by Lefebvre to be a neutral, homogenizing space of the state. However, when one begins to examine the school in its social and geographic context, it becomes clear that people attach multiple and contested meanings to schools and their roles in communities. This paper questions whether these perspectives are recognized in Boston’s desegregation policies, and whether desegregation alone can ensure educational equality.

“Employing Evolutionary Geography to Inform the Future of a Southern Textile Mill Community”

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The southern textile mill has played a prevalent role in the economic history of North Carolina. Just as the many small communities throughout North Carolina and Cabarrus County have been shaped by the presence of local textile mills, the Lincoln community of Concord, NC is no exception. The Coleman Textile Mill that once operated in the Lincoln community, although long gone at present date, continues to exert influence over this predominantly African-American neighborhood situated adjacent to downtown Concord. Understanding this historical relationship between the community and the mill can offer key understandings and insights to the future development of this somewhat neglected residential enclave. Evolutionary geography recognizes the path dependence of development and is the lens through which this analysis takes place. The author thus recognizes the value of using the Lincoln community’s past as a guideline for the future since the two are intrinsically connected. The Lincoln community is examined in terms of its historical economic dependence to the textile mills and its transition into the twenty-first century in the absence of this economic mammoth. Suggestions for future development are also included in the conclusion.

## Remaking Mount Airy into Mayberry: Film-Induced Tourism and the Politics of Place Identity

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Derek H. Alderman, East Carolina University

The purpose of this essay is to explore the role of film-induced tourism in place-making, recognizing that movie and television images can exert a powerful influence on the place identity and material condition of travel destinations. We focus on Mount Airy, North Carolina, the birth place of television actor Andy Griffith, and delve into the transformation of his home town into a simulated version of Mayberry for the purpose of serving tourists. Griffith popularized the fictional town of Mayberry in his 1960s television series, creating an idealized image of place that resonates greatly with fans of the show. Promoters represent Mount Airy to visitors as the inspiration and model for Mayberry, despite what Griffith has said to the contrary, and host an annual Mayberry Days Festival. We identify and interpret some of the landscape changes, bodily performances, and social tensions and contradictions that underlie the remaking of Mount Airy into Mayberry. We also assert the need to address the social sustainability of this transformation, particularly in light of the way in which African Americans are potentially marginalized in “the real life Mayberry.”

A comparative assessment of urban form among U.S. metropolitan and megapolitan areas  
using spatial metrics

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Keith Debbage, University of North Carolina at Greensboro

In this paper we investigate the regional variation in urban form among 86 metropolitan areas in the United States. Nine spatial metrics that collectively measure the shape and continuity of the urban landscape were applied to the 2001 National Landcover Dataset, and calculated for each metropolitan area at two urban thresholds: a high urban threshold containing the urban core and surrounding suburbs, and a low urban threshold that also contained the outer exurban fringe. A PCA was used to collapse the nine spatial metrics into two urban form components: “shape complexity,” which described the jaggedness of the urban boundary, and urban “continuity,” which represented the aggregation or fragmentation of urban landcover. Using ANOVA, urban “continuity” and seven of the nine spatial metrics were found to vary significantly by U.S. Census region. A hot-spot analysis revealed a high degree of spatial clustering among metropolitan areas with high or low urban “shape complexity” and urban “continuity.” Metropolitan areas in the Northeast and South generally exhibited more complex and less aggregated urban landscapes than those in the Midwest or West. Urban landcover also exhibited a more aggregated, continuous and compact form at the high urban threshold relative to the low urban threshold.

Memory and Place-Making: Teaching Undergraduates to Look Ahead by Looking Back.

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The role of memory and remembrance in the creation of places has attracted the attention of many scholars from numerous disciplines. Introducing first-year undergraduates to this topic in a seminar format has had its challenges, but they are far outweighed by the successes. By incorporating a memorial design project, undergraduate students learned to view memory's role in place-making as intrinsic to cultural expression and reflective of the complex relation between the deep past and society's future. Several examples of their efforts are provided.

## Pieces of the Puzzle: Processes of Racialization in Salvador, Brazil

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The racialization of populations is always the result of a confluence of practices aimed at the exclusion and exploitation of specific groups. This paper looks at some of these processes as they occur in Salvador da Bahia, Brazil. The author's research, conducted during the summer of 2011, reveals that multiple processes are responsible for the marginalization of the populations of the favelas. This paper will briefly explore three areas of this racialization: transportation, education, and policing. While ostensibly separate, all of these processes are linked together through geographical practices which exclude those living in the favelas from certain physical and social spaces. This work examines how marginalization works through varied, but interconnected means and describes some of the ways in which racialized bodies work against these processes.

“For I was a stranger and you invited me in”: Homelessness and Catholic Worker politics  
in metropolitan Atlanta

Claire Bolton  
University of Georgia

This paper describes an ongoing research project that explores contestations of neoliberalism as expressed by a Catholic Worker intentional community in Atlanta, Georgia. Atlanta has been called one of the 'meanest' cities for homeless people to live in, and, in response to these conditions, the 30-year old Open Door Community strives both to secure justice for homeless people in the city and to provide for their material needs through soup kitchens and free medical clinics (National Coalition for the Homeless 2009). This empirical project, which employs qualitative research methods, is theoretically situated within political economy literature in geography such as Smith and Mitchell's reflections on homelessness in the neoliberal city, and Leitner et al.'s insistence upon the importance of examining contestations of manifestations of neoliberalism (Smith 1996, Mitchell 1997, Mitchell 2003, Leitner et al. 2007). I present some of my initial empirical findings in this paper. I particularly highlight the tensions that Open Door Community residents and volunteers feel around their role in the institutionalization of homelessness in Atlanta, and how they strive to address these contradictions pedagogically.

# An Ethnography of Socioeconomic Landscapes and Built Environment on Orlando Highways

Timothy J. Brock  
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Transportation infrastructure is designed by planners and engineers to move people and goods in a safe and efficient manner, but also serves to engender socioeconomic and ethnic segregation in the built environment. Employing a methodology that blends ethnographic techniques and modified landscape assessments, the spatial segregation of socioeconomic classes can be read in the everyday landscapes along Orlando highways. A thick ethnographic description and a critical reading of the vernacular landscape of two highways in Orlando will be presented. Highway 50 is a local state highway full of diversity that connects local neighborhoods and their everyday activities; the 408 Expressway is a toll road expressway that runs parallel to Highway 50 and quickly moves people through a manicured façade removed from the genuine urban fabric of the city.

From Warning to Action: Tornado Warning Lead Time and Personal Protection  
Decisions from the University of Alabama Community During the April 27, 2011  
Tornado.

David Brommer  
University of Alabama

The tornado outbreak that occurred April 27, 2011 was one of the most anticipated severe weather events in recent memory. Public and private sector meteorologists communicated the significance of the event, specifically highlighting the potential for large, long-track tornadoes and the need to review severe weather action in the event of a tornado. Tornado warnings issued by the National Weather Service provided ample lead time for people in the path of the storms to seek shelter, with as much as 65 minutes lead time in the Tuscaloosa area. In this study, the University of Alabama community was surveyed through an online survey platform about their personal protection decisions. The analysis focuses on the spatial and temporal variability between the time of the issuance of the tornado warning and when respondents chose to seek shelter. The lag between the tornado warning being issued and residents seeking shelter varied by zip code region and by age, with many people waiting for visual confirmation of the tornado. This pattern of response placed more emphasis on the personal experience with the tornado and less on the official tornado warning and subsequent warning statements, which potentially placed more people in harm's way.

## Creating Greek Ethnic Space in the Heart of the South: The Greek-American Communities of North Carolina

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Despite considerable research by geographers on the nature and dynamics of ethnic community formation and maintenance in the United States, the Greek ethnic communities have attracted little attention. This research seeks to fill the gap by focusing on the Greek-American communities in North Carolina. According to recent census estimates (2009), about 28,000 persons claim Greek descent in the state. The Greek Orthodox Church, the most visible marker of Greek ethnic presence, is the anchor of thirteen established Greek-American koinotites (communities) in twelve cities. The use of koinotites rather than enories (parishes) is very significant because it affirms that the church is more than a place of worship. The objective of this paper is to visually document and map the Greek-American communities of North Carolina by exploring the different ways the Greek-Americans utilize in order to imprint their presence within their dominant cultural landscape.

Place Narratives and their Audiences: Laura Plantation Museum, Vacherie, Louisiana

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This paper examines visitors to Laura Plantation museum in order to gain an understanding of how they interpreted the narrative presented there. Laura is located in southern Louisiana between Baton Rouge and New Orleans. The plantation is noted for its 'Big House' as well as its remaining slave quarters. Museums are built as much around narratives as they are around artifacts. All museums tell a story and they tell a story that they hope audiences will want to consume. This is an audience study that seeks to capture the reactions of visitors to Laura to the story that Laura tells. In this study visitors' interpretations of Laura's narrative are construed through the conceptual framework of Figured Worlds. This study uses interview data gathered at the site.

Mobile Home Resident Preparedness and Response During the 2011 Tornado  
Disaster in DeKalb County, Alabama

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On April 27, 2011, an EF5 tornado hit DeKalb County, Alabama, as part of the Dixie Alley Tornado Outbreak of 2011. The tornado resulted in over 30 fatalities. A post-disaster survey was conducted in the county on May 6-11, 2011. A total of 124 local residents participated in the survey including 39 mobile home residents and 85 non-mobile home residents. The mobile home residents were less prepared than the non-mobile home residents in having a tornado-resistant shelter on the premises and having a plan for seeking shelter. Furthermore, 45% of mobile home residents with a plan intended to seek shelter at the mobile home. Factors associated with having a plan included previous experience in seeking shelter from a tornado and a high internal locus of control. Perception of danger upon receiving a tornado warning was equal among mobile home and non-mobile home residents; however, mobile home residents should be expected to have a greater sense of danger given their enhanced vulnerability.

## Searching for Traces of Old Storms on the Mosquito Shore of Eastern Honduras

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Tropical cyclones are significant natural hazards that regularly impact warm, maritime regions around the world. In recent decades, there has been growing interest about their impacts, especially in highly developed regions such as coastal areas of the United States. A considerable amount of work, however, remains to be done in isolated, less-developed areas like the Central American fringe of the Caribbean Basin. This paper reports on a collaborative project that integrates paleotempestological, participatory, and archival research to reconstruct the history of tropical cyclones in eastern Honduras. Paleotempestological results indicate the area has been hit by at least three catastrophic hurricanes over the last 700 years. Local hurricane histories, drawn from the memories of residents, do not extend far enough into the past to overlap with the paleotempestological record, but provide a rich resource to draw insights about the long-term vulnerability of Caribbean Central America to tropical cyclones. Ongoing archival research has opened a third avenue of inquiry and preliminary findings indicate historic newspaper accounts from the late 18<sup>th</sup> century will be useful in validating our paleotempestological evidence.

## The Spatial Extent of Neighborhood Influence on Residential Perceptions of Physical Disorder

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Physical disorder in a neighborhood and residents' perceptions of physical disorder are both hypothesized to be important factors in relation to criminal behavior. However, residential perceptions do not always correlate strongly with non-residents' more objective perceptions of physical disorder. In this paper, we examine the impact of the neighborhood size on the correlation between a systematic observation of disorder and a survey of residents' perceptions of disorder. We use two different tests to conduct this comparison: ordinary least squares regression of spatial averages and a modification of the bivariate Moran's I test of spatial correlation. These two tests provide conflicting evidence about whether the residents perceive their neighborhood as the immediate street block or a much larger area. The regression analysis suggests a larger neighborhood area, while the I test indicates a smaller area. However, both sets of tests show only a weak, albeit statistically significant, correlation between the systematic observations of disorder and the residents' perceptions of disorder.

# Stumbling over landscape meaning: Die Stolpersteine in Berlin

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This paper studies the ways in which Germany's past is represented in the landscape through memorialization, focusing specifically on Gunter Demnig's Stolpersteine (stumbling stones) project. The Stolpersteine are 4-by-4 inch memorial stones placed in sidewalks in front of homes and business that were the last known location of Holocaust victims before deportation.

Geographers have argued that the representations of a state's landscape can be used as a powerful ideology to shape meaning and understanding of the past, including Harvey (1979), Mitchell (1996), and Till (2005). As individuals and organizations work to commemorate Holocaust victims through memorialization, people who visit or observe these memorials may derive new meanings and understandings of the Holocaust. My fieldwork research in Berlin has shown that Germans derive four distinct meanings from the Stolpersteine when they encounter them in the urban landscape. The paper uses a critical framework to examine the outcomes and implications of struggles over meanings in the socio-political and historical contexts of memorialization.

## TOURISM AND DEVELOPMENT IN BIMINI, THE BAHAMAS

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Tourism and development changed the quality of life for the people of Bimini, the Bahamas. This small community of about 2000 people has seen successive waves of tourism and development over the last century. Infrastructures to support tourism, such as clean drinking water, electricity and telephone service, have brought benefits to some islanders. Resort development has brought revenues to the Bahamian government and profits for developers, but has not improved the economic well-being of most islanders. Increased pollution and ecological changes have depleted fisheries and changed dietary habits. Lack of jobs and competition for natural resources leave Biminities among the most impoverished in the Bahamas. This paper looks at some of the unintended consequences of tourism and development.

## A Comparison of Hurricane Advisory Map Performance Using Eye-Tracking and Biometric Measures

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The cartography of hurricane advisories is challenged with communicating complex information regarding hazards and spatio-temporal uncertainty. This paper presents an exploratory geovisualization study assessing how hurricane advisory maps are perceived. In an experimental laboratory setting, we compared student responses to official National Hurricane Center advisory maps (e.g. "cone of uncertainty" maps) and alternative test map products. We measured human behavioral response and environmental perception using eye-tracking, electroencephalograms (EEG), electrocardiography (ECG), electromyography (EMG), and a survey questionnaire to support analysis of participants' objective and expressed responses to competing geovisualization products. This approach allows the investigation of biometric responses with digital precision in order to infer cartographic design effects on individual map readers. Cartographic design within a GIS is used to control the visual variables presented to reader for a controlled comparison of the competing map products. We performed spatial and statistical analyses to analyze patterns of eye-movement and fixation times and to assess correlations with other biometrics and survey responses. We reveal influences of map design decisions on end user map preferences, end user hazards perception, and map effectiveness using non-parametric tests and regression models. Preliminary results provide information regarding the effectiveness of existing and alternative hurricane advisory products.

A GIS-based approach to evaluate spatial accessibility to food stores and a case study in southwest Mississippi

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Disparities in accessibility to healthy food are a critical public health concern. Poor access to reasonably priced, nutritious and good-quality food stores may lead to poor diet and increase the risks of diseases such as obesity, diabetes and cardiovascular diseases. This research integrated the popular two step floating catchment area (2SFCA) method with a kernel density (KD) function, thus formulating the “KD2SFCA method”. The study applied the method to measure the spatial access to food stores in southwest Mississippi, and examined the interaction between the spatial access and non-spatial factors. The research showed that neighborhoods with higher scores of urban socioeconomic disadvantage actually have better spatial accessibility; but higher percentages of carless households and lower income in some neighborhoods may compromise their overall accessibility. The study clearly delineates the food deserts in a Geographic Information System (GIS) environment, and thus helps policy makers design corresponding remedial strategies.

# TRANSATLANTIC AVIATION AND INTERNATIONAL TOURISM: AIRPORT SLOT POLICY AS SPATIAL CONSTRAINT

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While the demand for air travel has been growing rapidly, the capacity of airports to handle this demand has been expanding less rapidly resulting in severe congestion and delay problems in places like New York and London. Air transport is often the crucial element that links international tourist demand and supply, yet how airport operations impinge on the geography of tourism is less clearly understood. Although some transport and tourism geographers have focused on airline deregulation and its impact on air passengers, little attention has focused on landing slot policy. The purpose of this paper is to suggest that landing slot policy and the manner in which airport capacity is allocated between the airlines across the North Atlantic plays a substantive, and frequently overlooked, role in spatially constraining airline operations. The paper will outline the essential ingredients of slot allocation policy and conclude by critically evaluating various slot allocation alternatives designed to make airports more “elastic” and spatially dynamic including congestion pricing, secondary slot trading and auctions.

## Sky-View Factor Estimation: A Case Study of Athens, Georgia

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A better understanding of the urban heat island (UHI) effect can be facilitated by accurately measuring urban geometry. One commonly utilized approach is to calculate the sky-view factor (SVF). The overall purpose of this paper is to devise a simplistic and low cost methodology to estimate SVF values for a case study of Athens, GA. By using a fish-eye lens photographic method it was discovered that the lowest SVF values were located close to the urban core in the residential and downtown areas while the highest values were observed in the more peripheral commercial and rural areas. These results suggest that an UHI could potentially exist in downtown Athens. However, due to the complexities of the urban environment great care must be taken when associating low SVF values directly with high levels of urban heating. Instead, a comprehensive approach which analyzes a range of additional factors such as albedo, heat capacity, surface emissivity, and surface roughness in tandem with SVF values would be more appropriate for accurately evaluating the potential of an UHI emerging.

## Trajectories of Multidimensional Neighborhood Quality of Life Change

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Neighborhood quality of life (QoL) is a multidimensional concept describing the desirability or competitiveness of a location. Understanding how neighborhood QoL evolves over time is critical for developing effective policies towards improving neighborhoods. In order to gain a better empirical understanding of these spatio-temporal trends across multiple attributes, this paper employs a combined computational and visual technique based on the self-organizing map to explore the intra-decadal dynamics on an array of QoL indicators for neighborhoods in Charlotte, NC between 2000 and 2010. The analysis addresses which types of neighborhoods, in terms of QoL characteristics, experienced the most change or stability, where (in attribute and geographic spaces) did neighborhoods that began the decade with a particular set of characteristics evolve to, and where did neighborhoods that concluded the decade transition from? Results indicate that neighborhoods with the highest QoL characteristics and suburban neighborhoods with high homeownership levels were most stable throughout the decade, while those with lower homeownership, closer to the city center were largely in transition; low levels of homeownership is identified as a path through which change occurs. Changes in the lowest QoL neighborhoods shifted between high crime concentrations and a concentration of youth-related social problems.

## Simulating land change scenarios to resolve urbanization-conservation conflicts at the edge of metropolis

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Increases in population and per-capita land consumption continue to drive land-use changes that directly threaten the persistence of biodiversity and natural ecosystems. Simulation models of land-use/land-cover change provide powerful analytical tools to address challenging policy issues associated with environmental pressures such as rapid urbanization. We applied the Future Urban-Regional Environment Simulation (FUTURES) model to examine outcomes of conservation planning scenarios for urban and rural growth in the North Carolina Piedmont. FUTURES is a generalized framework for simulating realistic, spatially explicit structures of per-capita land use change and settlement patterns. We utilized the model to understand how future development resulting from various land use planning trajectories will conflict with regional conservation priorities and influence landscape structure. Results indicate that if current trends continue, conflicts between development and the protection of natural resources are inevitable. Analysis of conservation planning scenarios revealed that trade-offs will exist between conservation of priority resources and landscape connectivity. For example, scenarios that preserved resources near urban areas resulted in increased fragmentation of forests and farmlands in rural areas. Implementation of these land change scenarios provided an important avenue for the exploration of potential landscape level impacts of future development on ecological communities and conservation priorities.

# Using Double Diamond Models to Explain Domestic Assembly Plant Locations for the US Farm Machinery Industry

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Competitive advantage is often analyzed using the single diamond model developed by Porter (1990). Researchers (Moon et al. 1995), however, have discovered that Porter's model, which only accounts for local conditions, cannot always accurately describe the competitive advantages of companies that receive high levels of foreign direct investment or are highly connected to the global economy. Competitive advantage for these firms is more easily explained using a double diamond model, which accounts for both the local and global conditions that a company faces.

This paper examines domestic assembly plant locations for the Big Three full-line farm machinery manufacturers in the US to determine if a single or double diamond model is most suitable for evaluating competitive advantage. The paper assesses each location using a prior analysis based on Porter's single diamond model (Drake 2011) and then discusses the advantages of using a double diamond model based on findings from archival research and plant tours. The paper will conclude with a brief examination of a cluster of assembly plants, built in the last fifteen years by international farm machinery firms in the Atlanta Metropolitan Statistical Area and what a double diamond model might tell geographers about competitive advantage for these firms.

## Place Matters: Practical and Pedagogical Issues in a Community-Based Classroom

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**Abstract.** This paper examines pedagogical and practical issues associated with teaching an undergraduate community-based learning course in an inner city neighborhood. This course is part of a semester-long immersion residency program for undergraduates. The setting of the class in this specific community informed both the style and content of the course. Based on the experiences of the author teaching a course in the student residency program, this case study analyzes how place plays a role in the construction of the classroom and affects learning outcomes and objectives. Place is examined in the context of breaking out of the traditional university classroom.

An Examination of Shifting Economic Conditions and Changing Vulnerabilities in San Juan del Sur, Nicaragua Since The 1992 Nicaraguan Tsunami

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On 2 September 1992, the community of San Juan del Sur, Nicaragua was inundated by a large tsunami. The local economy, at the time, was focused primarily on fishing and shipping. However, since the event, the area has shifted to a predominantly tourism based economy. The goal of this study is to explore how this economic shift has affected the vulnerability of San Juan del Sur. A comparison between a 1992 field survey and current tourism maps combined with conversations with local residents and the local tourism commission in February 2011 suggests that the current economy is based almost exclusively on tourism and that substantial physical vulnerability exists due to the exposure of the town's main industry which lies, almost exclusively, within the 1992 inundation zone. Finally, further research is proposed to gain a better understanding of local vulnerability in San Juan del Sur and other similar developing economies.

## Spaces of Faith: Incorporating Emotion and Spirituality in Geographic Studies

Caitlin Finlayson  
Florida State University

Religious experience is highly personal, and is often comprised of affectual and emotional responses, both within personal space and through ordained sacred spaces. Drawing on recent geographical research, this paper explores how personal affect and emotion are experienced by members from two houses of worship using semi-structured interviews. The responses highlight the transformative nature of sacred space and its unique capacity to elicit emotional experiences from participants. Further, this study demonstrates that there is a commonality to spiritual experiences, such as a feeling of peace or a sense of being 'home,' that cuts across denominational lines, and that these experiences are often spatially grounded.

# Statistical Analysis of DMSP-OLS Night Light Images and Economic Activity in Florida

Dolores Jane Forbes  
Florida Atlantic University

The Defense Meteorological Satellite Program (DMSP) Optical Line Scan (OLS) instruments collect data from an altitude of approximately 830km above the surface of the Earth. The night light data from these instruments has been shown to correlate by lit area with national level Gross Domestic Product (GDP), and to correlate with GDP at the State level by radiance value. Very strong correlation is found between the night light data at a new, larger scale, the Metropolitan Statistical Area (MSA) within the state of Florida. Multi-variate regression analysis was performed to determine which industries within each MSA explain the greatest amount of variance in the night light data. Industry GDP variables failed statistical collinearity tests significantly. It is therefore impossible to determine which industries explain the greatest variance in the night light image data at the MSA level in Florida.

Keywords: DMSP, night lights, GDP, Florida

Understanding Advances in the Global Positioning System,

Jacqueline Gallagher  
University of Mary Washington

A laboratory course in mobile GIS and GPS has led me to a greater understanding of the development of global positioning system satellites and the signals they transmit. As background material is it difficult to teach and learn, but allows for a good understanding of how and why our GPS receivers are more accurate today than five years ago. I discuss different generations of GPS satellites and their launches, from 1978 to 2011, and how greater accuracy in civilian use has been achieved through increased and improved signal technology.

## Using LIDAR to Monitor Long-Term Topographic Changes on Barrier Island Systems

Paul A. Gares  
East Carolina University

Long-term changes to coastal barriers have been examined in previous studies but volumes of change have been difficult to quantify due to limitations of accurate measurements. The availability of LIDAR data provides a source of high quality data, although regular repeat coverage is somewhat limited nationally. North Carolina is one location where repeat LIDAR flights have been undertaken and this provides the opportunity to examine coastal changes over nearly a decade. This study focuses on characteristics of beach and dune systems at undeveloped and developed sites to ascertain the degree to which development modifies the response of the system to comparable events. Overall, it appears that beaches and dunes along developed reflect significant differences from their undeveloped counterparts. Beaches at developed locations are often narrower, lower and contain less sediment than they do at undeveloped sites, but dunes in developed areas are higher and contain more sediment than in undeveloped locations. The differences in beach dimensions exist despite implementation of beach nourishment projects along developed shorelines. The larger dunes at developed sites reflect the considerable efforts made by communities to maintain and even to build dunes.

# Reconstructing the Image of a City: An Examination of Urban Revitalization in Chattanooga, Tennessee

Josh Garland

University of Tennessee at Chattanooga

Post-industrial cities often have difficulty finding niche in current markets. As American society has shifted from manufacturing based job sectors to a predominately service-oriented market, many old industrial cities have difficulty attracting new investment. This presents a unique and rather arduous task for urban planners. These cities are often faced with the reality that they must find a way to reconstruct their image to appeal to new investors. This paper will examine how Chattanooga, Tennessee was able to reconstruct its image as a trendy, family-friendly vacation destination. This paper will apply a conceptual model, developed by Short, Benton, Luce, and Walton, which demonstrates how old industrial cities can reinvent their image to remain competitive in today's service-oriented market, to Chattanooga's urban revitalization.

## Characteristics of Atlantic Basin Recurving Hurricanes

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SHEPHERD

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Atlantic basin recurving hurricanes from the National Oceanic and Atmospheric Administration's HURDAT database were analyzed for the period 1949–2008. On average, 1.3 hurricanes per year were found to fit the definition of a recurve used in this study. Recurves are typically stronger and longer lived compared to all other Atlantic basin hurricanes. Analysis of 500-hPa height anomalies show above average values in the eastern U.S. during the first three days of a recurving hurricane's lifespan and below average values during the last three days, linked to phases of the Arctic Oscillation. While further research is warranted, it appears that the Arctic Oscillation shows potential for the use in mid-range hurricane track forecasting.

## Are Ghosts Present? Time and Memory in Savannah's Ghost Walk Tours

Glenn W. Gentry  
SUNY-Cortland

Ghost tours arose as an important part of the Savannah experience with the fading of the tourism boom fostered by the book (and later movie), *Midnight in the Garden of Good and Evil*. Ghost tours differ from other tours in that they can become sights for the exchange of memories. From the swapping of stories before the tours to tour participants' leading part of the tours telling their own stories, some of these ghost tours are more than a scripted recounting of history. Rather, they can also be seen as an active performance of memory by tour guides, tour participants, and even at times, locals met along the way. Ghost tours should not be confused with history or heritage tours which are couched in the past because ghost tours differ in subject; for if ghosts should exist, they are very much of the present. Derrida's (1994) hauntology, which asserts that the ghost "begins by coming back," allows for an exploration of how ghosts and memories are similar in their performance. As each haunting is singular, the occurrence of ghosts is both the first and the last time they occur, (even through repetition), so too are memories are singular within the context of the moment. But to consider ghosts, not as metaphors or shades of the past, but rather as singular in the present, means to make them unstuck in time. The possibility of ghosts, which gives the ghost metaphor power, exists not in the past or future, but unstuck, in the moment, this present.

## The Spatial Epidemiology of Chronic Kidney Disease in Northwestern Nicaragua

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The incidence of Chronic Kidney Disease (CKD) presents a global health issue. An epidemic is currently occurring throughout the Pacific Coastal region of Central America, where renal insufficiency is a major cause of death. Knowledge is limited regarding the origins, causes, and prevalence of CKD in this area, but previous work suggests that environmental exposures are a major contributor. This research investigates CKD in a high-incidence region of Nicaragua from a medical geographic perspective, considering population-level as well as environmental and cultural factors and how their interactions lead to the disease outcome. The study population is drawn from an ongoing spatially-referenced health and demographic surveillance system in Leon, Nicaragua. Data on CKD incidence, household-level characteristics, and individual-level demographic and lifestyle factors was integrated into a geographic database of the study area. Individuals were classified as either diagnosed with CKD, at risk, or non-cases. Initial models suggest that rural versus urban residence, agricultural employment, alcohol and water consumption, and pre-existing health conditions are significantly related to CKD. Additional spatial analysis will yield clues as to whether proximity to environmental and geographic features influences individual-level risk.

## Fieldwork as Investment

Jamie Gillen

National University of Singapore

This paper contributes to the existing literature on inequality and access between interviewees and respondents in the Global South by outlining three different types of investments regularly made to interview subjects in the field in urban Vietnam. The paper also illustrates what both parties gain from these investments. Rather than aggravating the wealth, educational, and power inequalities between First World fieldworkers and the Third World “researched”, I argue that financial, symbolic, and knowledge investments can be beneficial for researcher access and are understood by respondents to be appropriate currency for shaping trust and reciprocity. In turn, the paper urges researchers working in the Global South to question whether investments of these sorts are appropriate tools to use in their own research endeavors, to envision long-term “investment strategies” for furthering relations established by these micro-investments, and to recognize the spaces being created, and sooner or later left behind, by financial and symbolic investments.

## Scale Deafness: The Political Response to Geographically Informed Economic Policy

William Graves  
UNC Charlotte

The declining influence of human geography on the policy community has resulted in a decline in the spatial literacy of the political class. As regional economies make their way through the new economic environment applied economic and urban spatial research has more to offer the public than ever before – yet we remain largely invisible.

This paper documents the response of policy professionals to a spatially informed economic development policy suggestion. A new technology cluster was suggested to take advantage of existing investments in universities and logistics infrastructure combined with stimulus funded improvements to passenger rail connecting these assets. Responses to the proposal illustrated the policy community's poor understanding of scale and globally-driven economic change. A case is made for increasing connections between human geographers and the policy community.

# Estimating Future Water Resource Health in the Lower Cape Fear Basin, North Carolina

Michael T Griffin  
East Carolina University

With the possibility of future fresh water shortages increasing, a methodology for predicting future water availability conditions is needed. This research outlines a methodology to estimate these conditions based on the influence of climate change, land use change, and population growth. The method is based on the USGS Thornthwaite monthly water balance model and can incorporate estimates of climate change and land use change parameters to assess future water resources based on predicted monthly fluxes of the water balance. The methodology is demonstrated by analyzing watersheds in the lower Cape Fear River basin located in southeast North Carolina. Water stress indicators are used to categorize the region as water rich, water stressed, or water scarce. Ensemble runs indicate a shift toward water stress in the lower Cape Fear River basin in the future, due to a warming climate as well as increased demand. While climate change has a significant impact on water resources in the region, population growth has the most substantial impact as it not only impacts demand, but climate and land use as well.

## Forest species diversity reduces disease risk in a generalist plant pathogen invasion

Sarah E. Haas  
University of North Carolina

Empirical evidence suggests that biodiversity loss of ecological communities can increase infectious disease transmission, yet our understanding of the ‘diversity-disease hypothesis’ for generalist pathogens in natural ecosystems is limited. I use a landscape epidemiological approach—combining field data on pathogen abundance and host community structure with geospatial data on landscape context—to examine two hypotheses regarding the effects of plant species diversity on disease risk in the emerging plant pathogen *Phytophthora ramorum* across a broad geographic region: (1) an amplification effect exists whereby disease risk is greater in areas with higher plant diversity due to the pathogen’s wide host range, or (2) a dilution effect exists where disease risk is reduced with increasing diversity due to lower competency of alternative hosts. I found evidence for pathogen dilution, whereby risk was lower in sites with higher species diversity (n=278 sites across an 80,000-ha study area in Big Sur, California). This finding held after accounting for the potentially-confounding effects of host density and multi-scale landscape heterogeneity. These results suggest that although nearly all plants in the ecosystem are hosts, alternative hosts of *P. ramorum* may dilute disease transmission by the two most competent host species, thereby buffering forest health from infectious disease.

## An Investigation of Changes in Barrier Islands Using 3D Modeling

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Barrier islands provide nursery habitats for many species, naturally reduce pollutants that enter the systems, and reduce the impacts from storms and floods. The purpose for this study was to investigate the topographic, or elevation, characteristics of Masonboro Island, an undeveloped and protected island in southeastern North Carolina. Several dates of LIDAR elevation data were collected for the island and comparisons were made for shoreline change, back barrier change, and island height, width, and volume. Results indicate that the shorelines are eroding in the southern part of the island, the island is migrating landward also in the southern part of the island, and the northern part of the island is narrowing. There was also a positive relationship between the change in volume and the change in the width of the island.

## The Neighborhood as a Place for (Urban) Politics

Katherine Hankins, Georgia State University and Deborah Martin, Clark University

Neighborhood is a powerful imaginary that originates in planning ideals, but which simultaneously offers an everyday appeal that is evident in popular discourse and activism that seeks to protect it (Mumford 1968; Martin 2003a). Cities have codified the importance of neighborhoods through formal planning processes, yet these processes reify the “local” scale, bounding and limiting the scope of planning or policy solutions. Considerations of neighborhood as local, fixed, urban entities produce specific, scaled imaginaries of urban politics. If we instead conceptualize neighborhoods as every day, momentary and instantiated bundles of place identities and relationalities (Pierce et al. 2011), we resist the bounding of neighborhood politics as necessarily local. In this paper we draw from theoretical insights of Jacques Ranciere and an empirical example of “strategic neighboring” to offer evidence for the limited political possibilities of such a fixed, local understanding of place politics.

Reading the spread of electricity in rural North Carolina through Foucault's biopower

Conor Harrison  
University of North Carolina

Biopower is a subtle and dispersed power that operates at the scale of the human species as a whole in order to create a desirable population mix in a manner that is both economically profitable and politically useful. As biopower became increasingly influential in state governance, new conceptions of health and sanitation emerged. These new attitudes and behaviors were incorporated into the design of houses and cities, fundamentally reshaping the landscape. In this paper, I explore how electricity's rapid spread through rural North Carolina was helped along by the creation of new discourses of health, cleanliness, and sanitation in the home. In addition, I examine the powerful motivations for spreading electricity in rural areas, which include both a short-term boost in employment during the Depression and, perhaps more importantly, a long-term integration of rural areas into the emerging American society of mass consumption.

Old-growth on the tablelands of the Cumberland Plateau: forest history and  
management implications

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Forest reconstructions provide information on the processes that influence development and succession. In this study, we quantified composition, structure, and radial growth patterns of *Quercus* trees to document the processes that shaped a *Quercus*-dominated forest over the past three centuries on the Cumberland Plateau. The oldest trees on the site established in the late-1600s. The forest was dominated by *Quercus alba* but the most important species were *Acer rubrum* and *Oxydendrum arboreum* which were very abundant in small size classes. *Quercus* recruitment has been continuous over the past three centuries whereas *Pinus* established in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries and *Acer* established in the 1940s. *Pinus* recruitment corresponded to stand-wide canopy disturbance while *Acer* recruitment had no relationship to overstory removal. Over the last three centuries, we contend this has been a *Quercus* forest with *Pinus* restricted to patches that corresponded to canopy disturbance. The more recent profusion of *Acer* in the understory may inhibit the regeneration of *Quercus*. Under the current gap-scale disturbance regime canopy composition should change to have a much stronger *A. rubrum* component. Reserve managers must decide if the current successional pathway is desirable and if not which silvicultural prescriptions are appropriate.

## Exploring Urban Health Disparities with Qualitative Inquiry

Timothy L. Hawthorne, Georgia State University Dept. of Geosciences

Mei-Po Kwan, The Ohio State University Department of Geography

Geographers have long been interested in studying health and healthcare accessibility. In recent decades, a more critical health geography research agenda has developed. Place and geographic context, individual experiences of health, and mixed-methods have become important to critical health geography research. With these research directions, many critical health geographers now focus on highly individualized and contextualized experiences of health and healthcare accessibility. In this presentation, we seek to contribute to critical health geography research by considering the intersections of healthcare accessibility, patient satisfaction and the everyday lived experiences of lower-income individuals. To meet this goal, we use qualitative inquiry to understand the highly complex and unequal landscapes of healthcare accessibility in the Near East Side of Columbus, Ohio. Through qualitative inquiry of fieldwork data with lower-income residents, we develop multiple narratives to reveal differences between the observed geographies of health and the reality that lower-income residents actually experience in their everyday lives while searching for quality, affordable healthcare. Such differences point to the important role of qualitative inquiry in critical health geography research.

## Race, Space, Habitus: Segregation and Local Food in Birmingham, Alabama

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University of California, Berkeley  
and  
Genevieve Munsey  
San Francisco State University

In Birmingham, social life is particularly inflected with race, stemming from both its continuing history of segregation and legacy of race-based social movements. Aided by federal housing policy, whites in the region reacted to black enfranchisement by abandoning Birmingham and shifting segregation from de jure Jim Crow to de facto residential segregation. Our argument is that this segregation manifests specifically in divisions within the burgeoning local food movement in the region. The movement is an almost wholly white affair with, until recently, very little participation of people of color. Yet, the participants in the movement are by and large part of the small faction of white progressives in the greater Birmingham area, many of whom run charity organizations and other non-profits. The question that immediately appears is “why do progressive, activist organizations practice exclusion in spite of professed beliefs in diversity and equality?” In this paper, we argue that bias, discrimination, and racism spring from the collision of ill-matched habitus.

## The Gullah/Geechee Nation: A Hidden Culture Revealed

Elizabeth Hines, Geography, UNC-Wilmington

Gullah slaves brought directly from West Africa in the in the 18<sup>th</sup> century fetched high prices from Low Country planters who valued their hydrologic engineering and rice growing expertise developed over millennia. Thus, their African folkways were undiluted by other African or Anglo-Saxon cultural practices. Familiar to Low Country visitors, the Gullah are otherwise little known or thought to have vanished through assimilation into the American mainstream. In the twentieth century many did move inland or to distant locations. Formerly isolated and essentially forgotten, their home of centuries became desirable recreational destinations in the 20<sup>th</sup> century. Although cultural traits have slipped away from some of their descendants, many maintain their speech patterns and folkways as their leaders work to revive them for future generations. The Gullah culture is more alive than previously understood, having survived not only in isolated enclaves in the Sea Islands but in other coastal communities. The federally sanctioned Gullah/Geechee Cultural Heritage Corridor includes the coastal zones of four Atlantic Seaboard states. Heritage tourism will help support educational facilities, cultural festivals, and site and artifact preservation of their unique culture. They call themselves the Gullah/Geechee Nation.

Using trees to date structures on the Anderson-Doosing Farm, Ronoake, Virginia

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A study has been completed on the Anderson-Doosing Farm in Roanoake Virginia on several timber structures. Using dendroarchaeology, we were able to determine precise build dates for three structures on the property. We were able to conclude that the oldest structure on the property was the double-bin cantilever barn (1830) followed by the cabin and smokehouse in 1838-1840. This rose the question why would a barn be the oldest structure, but we presume that a ruin nearby may be the original cabin, but could not ascertain a date from the timber as it were too decayed. This study was able to refine and improve the dating provided by the historic society and give credit to John Gish for the construction of the cabin and smokehouse, a claim previously assigned to Joseph Anderson.

## Web-based GIS Design for the Vector-Borne Disease Airline Importation Risk (VBD-Air) Tool

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University of Florida

The objective of this research is to develop a user-friendly Web-based GIS tool: the Vector-Borne Disease Airline Importation Risk Tool (VBD-Air), to help better define the roles of airports and airlines in the transmission and spread of insect borne human diseases. VBD-Air utilizes three-tier server architecture in a MVC framework with distributed GIS components. This tool shows the interrelationships among the global distribution of insect-borne infectious diseases, locations of known outbreaks, and international air service routes to identify seasonal risks of insect borne infectious disease transmission and spread by air travel, and to help identify potential mitigation strategies.

## Labor activism beyond the union: Contesting capital in the sphere of social reproduction

Michael Husebo  
University of Georgia

Labor geographers have identified multiple strategies through which workers assert their demands in an era of global production networks (GPN). Yet the socio-spatial potential of labor agency embedding its agency within the sphere of social reproduction remains under theorized. The ability of labor to perceive and contest the spatiality of capitalism in the sphere of social reproduction is omitted from labor geography. This paper presents an case study of how the Coalition of Immokalee Workers (CIW), a community-based organization representing immigrant farm-workers in southwestern Florida, perceive the GPN they are part of and utilize the spatiality of the network both in the place of production as well as the sphere of social reproduction. Using qualitative analysis of in-depth interviews with representatives of churches, religious-community organizations, and interfaith non-profits working with the CIW, I argue that the CIW's strategies theoretically expands our understanding of labor agency and how spatiality, and specifically place, shapes the potential for workers' agency in the neoliberal age.

# The Continuing Legacies of Jim Crow Segregation: A Case Study of the 1901 Alabama Constitution.

Joshua F.J. Inwood  
University of Tennessee

Building upon a foundation of critical, anti-racist scholarship this paper incorporates recent methodological and intellectual engagements with the American South through a focus on the 1901 Alabama State Constitution. The 1901 Constitution created the legal justification for the segregation of the races and was the product of white supremacist ideology. This in itself is unremarkable. Almost all state constitutions in the South were written under similar circumstances. Instead what makes the Alabama State Constitution an interesting case study is the fact that it was never rewritten. Thus the Alabama Constitution is an example of how the legacy of Jim Crow Segregation, and the white supremacy that formed a foundation for larger political, social, and economic inequality, continues to haunt the landscapes of the American South. Finally this paper is an opportunity to think about the broader legacies of inequality in the U.S. South and how legacies of displacement and racial segregation continue to operate long after the last vestiges of segregation were supposedly torn down.

## Image classification using geographically-weighted variables

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In this study, geographically-weighted variables calculated for two tree species, *Cryptomeria japonica* (“Sugi”) and *Chamaecyparis obtuse* (“Hinoki”), were used in addition to spectral information for classifying the two species and one mixed forest class. Spectral values (digital numbers for each band) of “Sugi” and “Hinoki” training samples were used to predict the spectral values for the two species at other locations using the inverse distance weighting (IDW) interpolation method. Next, the similarity between each pixel’s spectral values and their IDW predicted values was calculated for both of the tree species. The similarity measures are considered to be geographically-weighted because nearer training samples have more of an impact on their calculation. Use of geographically-weighted variables yielded an increase of 3.70% in overall accuracy (82.15% to 85.85%) and an increase in kappa from 0.740 to 0.795 for a Support Vector Machines classification.

## Characterizing the Environmental and Community Factors of Cancer Risk in Galena Park, Texas

Demetrice Jordan  
Georgia State University

Environmental and community factors play a significant role in the health and well-being of residents. Social and physical determinants have a substantial effect on health via the interplay of humans and the built environment. This interaction can result in disparities that create negative health outcomes. Likewise, racial/ ethnic characteristics, income, and a person's physical environment all work together to either promote or decrease health. The community of Galena Park, Texas, located along the Houston Ship Channel, consists of Hispanics and African-American residents with undocumented concerns related to air quality, the built environment, and cancer risk. This project seeks to characterize the environmental and community factors that increase cancer risk for residents of Galena Park. This includes determining the proximity of Galena Park to industrial sources of Benzene pollution, identifying the risk of exposure to Benzene pollution for Galena Park residents, and mapping the extent of poverty, linguistic isolation and residential segregation.

## Expanding Markets: FDI as a Lesson in Economic Geography

Ron Kalafsky  
University of Tennessee

Companies are confronted with numerous challenges when looking at international expansion, not the least of which includes understanding the business environment of a new market. Given the growth and impacts of foreign direct investment (FDI), it has become increasingly important for students to understand and analyze the motivations, concerns, and strategies of companies looking to expand globally. This paper aims to illustrate the importance of introducing FDI into economic geography coursework by using the case of Canadian firms in China.

# Investigating Drivers of Maximum Daily Temperatures in Florida using Extreme Value Analysis

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Maximum daily temperatures from the second half of the 20th century are examined using a high resolution dataset of 833 grid cells across the state of Florida. The temperature dataset is combined with indices of the El Niño-Southern Oscillation (ENSO) and the Atlantic Multi-decadal Oscillation (AMO) to explore the influence of these oscillations on maximum daily temperatures in Florida. An Extreme Value Analysis Point Process approach is used to model the frequency, magnitude, and duration of periods or “hot spells” where daily maximum temperatures are above a high threshold. In order to investigate the influence of a time varying signal (ENSO and AMO) on the occurrence of maximum daily temperatures the signals are introduced into non-stationary models as covariates in the location and log-transformed scale parameters. The improvements to the model obtained by introducing covariates are examined using the deviance statistic whereby the difference in negative log-likelihood values between two models is tested for significance using a Chi-squared distribution. Preliminary results show some improvement in the models with the AMO covariate indicating that the AMO has some influence on maximum daily temperatures while those with the ENSO covariate exhibit little improvement.

## On Tinkering with an Ecosystem: Letting Go of Reductionism

Agrippa Spence Kellum  
University of Southern Mississippi

The dLANDa model simulates multi-species biological competition based upon groundwater balance and dynamic evapotranspiration. Building upon a Deleuzian bottom-up frame of reference posed by Philosopher Manuel De Landa, an environmental model of forest succession was developed in PCRaster Environmental Modelling Language. Custom code mechanisms were developed to simulate special characteristics of some species, such as the deep taproots grown by pines. These coupled with random elimination effectively synthesize some broad-scale biological behaviors such as dominance. Based upon the pedagogic experience of constructing the simulation, a continuously applied moisture gradient is proposed to further resolve natural placement of smaller developmental niches that tend to evolve in space over time. As an open source model, others may extend dLANDa freely.

# Climate Change Adaptation Planning in Coastal South Carolina

Nathan Kettle  
University of South Carolina

Numerous states, municipalities and organizations are in the process of developing climate change adaptation planning strategies. However, there remains a limited theoretical understanding of factors that influence support for climate change adaptation planning, despite the rapid growth in adaptation research and policy efforts in the past decade. This study seeks to understand the influence of perceived risk, uncertainty, trust, and knowledge on support for adaptation strategies that consider addressing potential climate change impacts. A web-based survey was sent 74 coastal managers across South Carolina. Managers included city planners and engineers, county planners, non-governmental associations, and division heads of state government offices. This group was selected for analysis because they play a critical role in the development of climate change adaptation plans and their limited participation in previous coastal survey-based research. Preliminary findings indicate that there is strong to moderate support for adaptation planning and among coastal planners in South Carolina. Perceptions of risk, uncertainties associated with first order climate change impacts, and trust in government are the strongest predictors of support for adaptation planning.

## Bon Temps Tourism: Selling Cajun Without Selling Out?

Adam Keul  
Florida State University

This paper elucidates how tourism is a context in which people have the capacity to perform exotic spatializations by creating nature/culture hybrids in marginalized spaces. Specifically, it focuses on how swamp tour guides in Louisiana's Atchafalaya Basin negotiate between images established by place-myths and the guides' actual experiences in the swamp in order to sell Cajun-swamp cultures to tourists without 'selling out'. This perspective is informed by relevant literatures from geographers and social theorists and by fieldwork comprised of participant-observation of thirteen tours in the study area and interviews with guides and tourists alike. The findings suggest that rather than relying on images of a 'backwater' culture in an equally exotic environment, guides perform hybridities-in-the-making that blend Cajuns and the swamp, wild and 'civilized' spaces and people and alligators. The present-tense performance of these hybridities allows for the exotic to be coded to the time-space itself rather than the particular people or landscape. This tactic creates a context where guides can perform nature through culture and not a culture from nature. This conjecture is crucial for understanding how tourism produces exoticism and particularly how ethnic groups are able to participate in tourism without creating hierarchies that rely on the continuation of stereotype.

# Agricultural site suitability as a biophysical driver of land use change in the Southern Appalachian Mountains

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Abandonment of agriculture and subsequent afforestation has been a major land use trend across the Eastern United States. In the Southern Appalachian Mountains, increasing amounts of evidence indicate forest ecosystems on abandoned agriculture areas have several lasting differences compared with forest areas that were never used as agriculture. However, there is a large uncertainty as to how much area was ever used for agriculture in the region. This project uses a GIS-based probability model derived from soils data to estimate historic land use patterns across 21 counties of Western North Carolina and evaluate the relationship between site suitability for agriculture and land use change. A conservative estimate is that up to 1/3 of the region was used as agriculture at some point since 1850.

## A 300-Year History of Pacific Northwest Windstorms Inferred from Tree Rings

Paul A. Knapp, University of North Carolina-Greensboro  
Keith S. Hadley, Portland State University.

Hurricane-force winds are frequently allied with mid-latitude cyclones yet little is known about their historical timing and geographic extent over multiple centuries. This research addresses these issues by extending the historical record of major mid-latitude windstorms in the Pacific Northwest (PNW) using tree-ring data collected from old-growth (>350 yrs.), wind-snapped trees sampled at seven sites along the Oregon coast, USA. Our objectives were to: 1) characterize historical windstorm regimes; 2) determine the relationship between high-wind events (HWEs) and phases of the PDO; and 3) test the hypothesis that PNW HWEs have migrated northward over the last century. We base our study on the identification of tree-growth anomalies resulting from windstorm-induced canopy changes corresponding to documented (1880–2003) and projected HWEs (1701–1880). Our methods identified all major windstorm events recorded since the late 1800s and confirmed that variations in coastal tree-growth are weakly related to temperature, precipitation, and drought. These results suggest wind-induced changes in canopy conditions control tree growth at all sites. Comparisons between the tree-ring record and PDO revealed a significant relationship. Latitudinal groupings of our sites revealed a gradual northerly shift of HWEs until the 1920s and a more notable northward shift during the past 80 years.

## Geographic dimensions of disease emergence: Human-environment interactions across spatial scales

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Recent reports of emerging diseases highlight the need for new approaches for evaluating emergence potential. Factors at multiple spatial scales in human and physical environments contribute to a disease's appearance in the human population for the first time or the expansion of an existing disease's range. The role of multiple spatial scales of analysis challenges our understanding of complex interactions among these factors and makes evaluating the relationship between emerging diseases and environmental variability difficult. Two case studies are used to investigate how variability in human and physical environments contributes to disease emergence and provide insight into effective ways to incorporate multiple scales within a study. In Hawaii, a localized outbreak of dengue fever occurred in 2001 when international travelers introduced the dengue virus to established mosquito populations. Local cultural practices increased the potential for human-mosquito contact. Lyme disease, endemic in the upper Midwest and along the East coast, appears to be increasing its range toward the south. The emergence is likely related to the presence of fragmented forests and human behaviors that increase human-tick contact. Medical geography offers approaches, specifically disease ecology and landscape epidemiology, that particularly when integrated provide a powerful way to examine disease emergence and resurgence.

## The Intra-Metropolitan Distribution and Growth of Computer Services in the United States

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The tremendous growth of business and producer services in the United States economy throughout the last three decades has given continued importance to research detailing this growth and development across various geographic and spatial scales. An area of research that has not been explored thoroughly is the intra-metropolitan distribution of business and producer services. An understanding of the intra-metropolitan distribution of business and producer services was never completely developed and has certainly evolved as service activities expanded within metropolitan areas.

Just as inter-metropolitan diffusion of producer and business services remains important to the growth of regional economies and economic development. The diffusion within metropolitan areas of producer and business services also has implications for growth and development. Much of this research is based on case studies of specific cities or regions and provides mixed results in terms of the type of industries locating in central or suburban locations and the magnitudes of growth associated with the location of services within a city or region (Aji 1995, Gong and Wheeler 2002, O'Hallachain and Reid 1992). Producer services, knowledge intensive business service (KIBS) in particular (advanced service industries involved in the use of specialized knowledge, technical skills, improved communication abilities, and greater business consulting competence) (Currid and Connolly 2008); have been recognized as having a key role in economic development and growth through innovation and innovation processes as the key to metropolitan growth.

The Making of the “Piano Bar”  
Landscape, Art and Discourse in Biscayne Bay

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This paper focuses upon a particular event that occurred in January 2011 on a small sandbar in Biscayne Bay, Florida. Early in that month global media outlets carried a story about a 600-pound grand piano that appeared on the sandbar located 200 yards east of Miami Shores, Florida. Responses to the event were clearly mixed and provide an unusual case study that reveals an intersection of various geographical themes including competing cultural discourses relating to particular landscapes, the importance of location and juxtaposition in landscape interpretation and representation, and the interpretation of geographies of everyday life. What becomes apparent from an analysis of the event is that, for some, placing a grand piano on a sandbar provides a refreshingly artistic recontextualization of elements of everyday life. For others, such an act collides with discourses of authority, public space and nature. This paper examines the ways in which placing a piano on a sandbar destabilizes both the object and its location in terms of their meanings as cultural texts.

## Smoky Lenses: James E. Thompson and His Smoky Mountain Photographs

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As the idea for a national park in the Smoky Mountains emerged in the 1920s, two commercial photographers, James E. Thompson in Knoxville, Tennessee and George Masa in Asheville, North Carolina, provided the visual persuasion needed to convince legislators and the public that these mountains were worthy of national park status. Over the years Masa's contribution has been documented more than Thompson's; however, the role of Thompson's photographs in the formation of the park and its promotion during its early years arguably surpassed Masa's contribution. Thompson's photographs of the Smoky Mountain region are a remarkably rich collection of both natural and cultural landscapes of this portion of the Southern Appalachians during the first half of the 20<sup>th</sup> century. The purpose of this paper is to examine Thompson's Smoky Mountain photographs with an emphasis on their contribution to the formation of the Great Smoky Mountains National Park; how they were used to help commodify the mountains, namely by promoting and informing the public about the park and region; and how his later mountain photographs, though long overlooked, document the nascent tourist industry in the region and the changes brought about by the industry.

“Escape From the H-Bomb”: Jim Crow Segregation and the Geographies of Civil  
Defense Planning in Cold War-Era Savannah, Georgia

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and  
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In 1950, in the beginning phases of the Cold War, the US Congress passed the Federal Civil Defense Act with the goal of protecting civilian populations in case of nuclear conflict. By the mid-1950s civil defense officials were busy developing detailed mass evacuation plans for American cities seen as targets of potential Soviet hydrogen bomb attacks. The 1950s was also the height of Jim Crow racial segregation in the American South. Using these important historical contingencies as political, social and cultural backdrops, we explore the geographical implications of Cold War civil defense planning efforts in a 1950s Southern segregated city, Savannah, Georgia, through the dual lenses of race and the geopolitics of fear. We do this by scrutinizing Savannah’s 1955 Hydrogen Bomb Evacuation Plan, particularly as it pertained to the evacuation of the city’s schoolchildren. Overall, the plan detailing local civil defense planners’ strategy for evacuating Savannah residents makes no specific mention of racial segregation. But upon closer examination, the plan suggests that the maintenance of Jim Crow racial segregation, as well as larger Cold War geopolitical fears playing out at the local level, were key concerns in carrying out evacuation strategies in Savannah.

## Effects of Riverscape Connectivity on Fish Metacommunity Structure

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Successful conservation management of ecological communities depends on an understanding of the interacting factors that structure these communities. In this paper patterns of empirical data on fish species abundance and environmental conditions at 24 sites in a southeastern river system are compared to assess the role of abiotic factors in structuring fish community composition. Non-metric multidimensional scaling was used to investigate species-environment relationships. Our results show that abiotic conditions are important predictors of fish community composition, suggesting that these factors are important to consider when making management decisions that impact stream fish. However, not every species showed distinct associations with environmental variables, perhaps because of the influence of spatial factors. This paper presents the first step of a larger study that will also investigate how well riverscape connectivity and other spatial factors explain the structure of this fish metacommunity.

## Race, Income Disparities and Mortgage Foreclosure in Tuscaloosa County, Alabama

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In 2007, the housing market collapsed and the nation went into severe recession. While some urban centers and states were more heavily affected than others, the housing crisis occurred in every town, city, and state in the country. Purpose: The aim of this study was to chart foreclosure trends and spatial distributions in Tuscaloosa County, Alabama. The study provides a snapshot of how the foreclosure crisis changed the social fabric of life in a rural southern state. Methods: Data on foreclosures were collected from legal notices in two newspapers and entered into an Excel spreadsheet. A total of 2600 foreclosures were collected from January 2008 to May 2011. These data were supplemented with property information from Emaps.plus.com, a public access website. The addresses of foreclosed properties were then geocoded in ArcGIS 9.3 using TIGER 2008 streets. Results: Foreclosures are heavily concentrated in several areas of the city, and are apparent both visually and by using hot spot detection methods. These concentrations are particularly dense in low-income minority areas that follow historical patterns of residential segregation.

## The elotero and the chef: The differential regulation of street vending in Chicago

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This paper considers how varying types of street vending in Chicago are differentially regulated by the local state. Latina/o migrant street vendors working in the city's predominantly migrant neighborhoods have faced hostility and increasing restrictiveness from the city council. By contrast, over the last two years the "food truck movement," led by a group of white, highly-trained chefs, has been met with excitement and openness on the part of many aldermen, who are now working to change the ordinance to meet their needs. In some respects, street vending is a peripheral economic activity, involving a small number of workers and neighborhoods. But, the political, social, and economic issues it raises are paradigmatic of the on-going conflicts over the future of urban economic development, immigrants' incorporation into U.S. cities, and opposing visions of who has the right to use urban space. Based on analysis of newspaper articles and interviews with street vendors, this paper demonstrates how the same economic practice are interpreted differently by those in power, based largely on the race and immigration status of the workers.

## Almost Level, West Virginia: Political Ecologies of Mountaintop Removal Coal Mining

Aron Massey  
West Liberty University

Coal is a controversial and hotly debated resource. In a word, America's relationship with coal is complex. The complex nature of coal is especially visible in southern West Virginia. While the history of the region contains countless stories of both the benefit and burden of being "coal country," currently the practice of mountaintop removal (MTR) coal mining is proving to be among the most controversial and contested of mining practices. The paper presented here is part of a broader research project that attempts to gain an understanding of MTR through an examination of the groups in Southern West Virginia that are protesting the mining technique and the companies that employ it. A political ecology framework is applied to the project as it allows for malleability and the inclusion of various theories, methodologies and modes of analysis to examine such a complex and multi-faceted issue such as mountaintop removal.

## Evacuation intentions of Florida tourists when a hurricane is predicted to make landfall

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This study investigates the stated preferences of Florida tourists in regards to their perception of risk and evacuation plans under hurricane conditions. The 448 tourists were surveyed either on the beach in Pinellas County, or inland near Orlando. After providing demographic information, each tourist viewed four maps containing the forecast track of a hurricane and associated error cone. Maps alternated between landfalls on the Gulf or Atlantic coasts and tracks passing over or offset from the sampling site. Landfall was to occur in 24 or 48 hours at Category 1 or 4 intensity. We performed chi-square tests to determine which hurricane conditions and aspects of tourists most likely influenced their ratings of risk and evacuation likelihood. Results show that only hurricane intensity was important to ratings in both locations, while landfall along the Gulf Coast with the track passing over the sampling site received ratings higher than expected for Pinellas County only. Tourists indicating the highest risk and evacuation ratings were not previously affected by a hurricane. Other tourist attributes such as age and residence also yielded statistically significant results, but the groups providing higher ratings differed between the two survey locations.

## Examining Tupelo Honey Yield Decline using *Nyssa ogeche* Tree-Rings

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University of North Carolina at Greensboro

Tupelo honey is derived from the nectar of Ogeechee tupelo (*Nyssa ogeche*) trees growing in northwest Florida. Honey yield has been declining since the mid-1980s for unknown reasons. In this study I use *N. ogeche* tree rings to reconstruct honey yield to place the current decline in historical context and identify the climatic and hydrologic conditions conducive to optimal honey yields. I sampled two sites on the banks of the Apalachicola River using standard dendrochronological methods and developed a master chronology from 1850–2009. A two-staged process was used for the reconstruction of honey yield and we used Monte Carlo analysis to examine the natural range of variability. The reconstruction passed all validation tests and extended the honey record 140 years. I found that the current decline is severe, containing the two lowest-yield years (1997 and 2007) of the extended record. However, a longer duration low-yield period occurred from 1877–1898. The relationship between *N. ogeche* radial growth and July river flow has shifted suggesting that environmental changes may be responsible for the decline in tupelo honey yield. My results demonstrate the utility of employing tree-rings extend crop records to allow a broader understanding of yield variations inherent in agriculture.

Haunted Past; Haunted Place: Place and Representation in Windham and Fig's *13 Alabama Ghosts and Jeffrey*

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Kathryn Tucker Windham and Margaret Fig's book *13 Alabama Ghosts and Jeffrey* serves as a means to preserve some of the more well-known folktales from the state of Alabama. As the authors note in the preface, the so-called ghost stories presented in the book "have entertained many generations of listeners" and "have become a treasured part of Southern folklore. The success of the book led to Windham authoring similar books that focus on stories in other Southern states.

Beyond being a source for entertainment, *13 Alabama Ghosts* creates a representation of place in Alabama that is reflective of the history of the state. That these ghost stories reflect as much about place as it does the history associated with the stories help to transform the book into a tale of the historical geography of Alabama. Thus, this presentation examines these ghost stories and haunted sites as representations of historical memory in the state of Alabama. These stories not only represent the history and geography of Alabama, but also reflect Southern culture as a whole. As Windham notes, ghost stories "are a part of our Southern tradition because we are storytellers in the South."

The South Florida Saw Palmetto (*Serenoa repens*) Berry Industry and Changing Land-Use Practices: Enhanced Rural Livelihood Security at the Cost of Endangered and Threatened Wildlife?

Christine M. Mitchell  
Florida Atlantic University

Non-timber forest products, or NTFPs, have only received serious attention in the last several decades. Yet very little research on NTFPs focuses upon the United States. The South Florida region is home to an unregulated and near-invisible \$700 million industry based on the wild-crafted NTFP Saw Palmetto (*Serenoa repens*) berry. This paper summarizes initial research aimed at understanding the effects of this growing berry industry upon the South Florida physical and social landscape and how the growing industry impacts public conservation lands and associated endangered and threatened wildlife species. Illicit harvesters are marginalized farm-workers seeking to improve their livelihoods by poaching on conservation lands where protected species such as the Florida Panther and Gopher Tortoise rely on the plant for shelter and as a seasonal food source. To understand why public conservation lands are accessed for berries an initial spatial analysis was conducted to assess whether the amount of industry- leased rangeland is adequate to meet industry needs. If adequate, why is there consistent poaching on public conservation lands? Spatial analysis is used to identify which conservation lands are most at risk for disturbance.

## The Production of Bedspace and the Racial State

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Kennesaw State University

This paper reports results from a content analysis of Annual Reports for Corrections Corporation of America and Geo Group, Inc. (formerly Wackenhut), the two largest private prison firms currently operating in the United States. The privatization of imprisonment by such firms has been called “the new face” of state punishment. Considerable geographic scholarship has analyzed privatization, on the one hand, and imprisonment, on the other. However, geographers have paid less attention to the private prison industry, the geographies it produces, and its surrounding debates. In particular, geographers have overlooked or ignored the emergence of bedspace, a concept that now pervades penal discourse. Rather than continuing conventional public-versus-private prison debates, this paper identifies bedspace as the discursive common ground upon which private prison industrialists and the state actually converge. The paper concludes that bedspace problematically severs the human geography of imprisonment, which is always lived and experienced, from its inanimate architectural infrastructure. Beyond the potential ethical and empirical challenges raised by such an abstraction of imprisonment’s underlying geographies, bedspace signals discursive and practical shifts in the racial state’s approach to punishment.

## Beyond Escapism: Engaging in the Difficult Memory Work of Race and Slavery at a Southern Plantation Museum

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The process of remembering at historic sites is a social one. Drawing from heritage tourism literature, this paper considers tours of plantation house museums as “memory work” carried out by museum staff and tourists. Much of the initial literature about plantation house tours focuses on the representational strategies used by museums to represent slavery. Focusing exclusively on the representational strategies used by docents or tour guides runs the risk of forgetting tourists as key actors in the social process of reconstructing the past. This does not mean that representation should be ignored – just that representations forwarded by museum staff are only part of the process of remembering at historic sites. Tourists also have a role in the process of remembering the past at historic sites. Using the concept of memory work highlights that remembering difficult topics like slavery is a co-constructed social process in which multiple actors participate. Using ethnographic data from Historic Hope Plantation in Windsor, NC and Destrehan Plantation near New Orleans, LA, this paper explores the active roles tourists take in remembering difficult pasts.

## Hydrochory in the Florida Everglades: Temporal and Spatial Variation in Seed Dispersal Phenology and Hydrology, and Restoration of Wetland Structure.

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This research examined the influence of Everglades ridge and slough degradation on hydrochory; the interaction of hydrochory, hydrology, ecosystem structure; and ecosystem restoration. Forty one seed species were identified from 2343 and 2849 seeds trapped in the intact and degraded sites, respectively. Significant differences were not found among sites for seed species diversity, density/trap, species richness, water depth, or water velocity. Percent cover of standing vegetation and periphyton, and the dispersing seed pool, and seed dispersal rates did differ significantly in both the wet and dry seasons. Regression analyses indicated that seed species richness was significantly related to water depth, and seed density/trap was positively related to water depth and velocity. The timing of increasing water depths and velocity coincided with the dispersal phenology strategy in intact sloughs in late spring/early summer, which may assist the dispersal of slough species into newly restored areas. Ridge species in degraded sloughs timed their seed release with peak water depths immediately before drawdown, and reduced water velocities. This strategy may increase the probability of these species finding and being deposited on elevated peat locations. Hydrochory may move species into appropriate establishment, increasing the probability that species can take advantage of appropriate restored habitat.

NORTH CAROLINA SCHOOL CLOSINGS IN THE WINTER OF 2010-2011:  
DECISION-MAKERS AND DECISION-MAKING

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When severe winter weather threatens, school officials must make decisions about whether to delay opening school, cancel school for the day, or when school is already in session, to dismiss early. Although the superintendent for each school district is ultimately responsible for the decision, there are many others involved in collecting the necessary information and, in many cases, developing a recommendation for the superintendent. In order to understand this process and the associated collection and flow of information, a survey of school districts in North Carolina was undertaken, and interviews of selected district officials were carried out. The surveys were aimed at documenting the influences in making such decisions, including the relative importance of forecast and current weather conditions, the safety of students and staff, and costs. In addition, how weather and road condition information are obtained and how decisions are communicated within the school district and out to the public was also part of the survey. The interviews followed the process, from learning that a severe winter weather event is forecast to the ultimate decision, with an emphasis on the kinds of information used and from whom they are obtained. Together, the results lead to conclusions about the internal and external communication needs and networks, and how they differ (or do not) among districts.

Micro-Stratification: An analysis of urban residential structure using a social stress index derived from U.S. Census block level data – Gadsden Alabama, a case study

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Social stratification and why it exists has become one of the most widely researched areas in recent years. A closer look into this socially stratified society reveals a micro-stratification that exists not only in socio-economic status but also within the character of the society itself. This micro-stratification can be identified by examining social stressors to identify the geographic location of the population. It is hypothesized that there is a direct positive spatial correlation between public housing, for example, and social disparity. In this case public housing can serve as a physical, psychological and even an administrative boundary between socio-spatial areas. This research examines the Census data available to determine if there are certain variables which identify socially stressed areas. The block level Census data was used to create an Index of Social Stress from derived variables. The Index was useful in identifying factors that create micro-stratification such as vacant housing units, female head of household with children under 18 years of age, races other than white, and size of family units. These social stressors are useful in identifying areas of clustering within the community. Incorporating GIS technology the socially stressed areas can be identified using the index of social stress.

## Likelihood to Respond to Flash Flooding: Case Study of Boulder, Colorado

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Flash floods are among the deadliest weather phenomena in the world. Because of the short lead times associated with these events, it is important that those in danger understand their risk in order to respond quickly and appropriately to watches and warnings. There are, however, many factors involved in one's likelihood to respond. To assess these factors, a mail survey was conducted for a random sample of the general public in flash flood-prone Boulder, Colorado. Indices, including antecedent knowledge about flash floods, risk perception, and warning receptiveness in addition to variables such as past flash flood experience, location, length of residence, and sociodemographic indicators were included in the analysis. Among the results, risk perception, warning receptiveness, and antecedent knowledge were positively associated with the likelihood to respond to flash flood watches and warnings.

# Mapping and Modeling Intercollegiate Wrestling Opportunities in the American Southeast

Timothy Mulrooney, Ph.D., North Carolina Central University

Wrestling at the intercollegiate level achieved a milestone with its 100<sup>th</sup> anniversary in 2003. 289 colleges and universities field wrestling programs while wrestling is competed at more than 10,500 American high schools. However, the spatial distribution of these collegiate wrestling programs does not mimic that of demographic trends and distribution patterns. Collegiate wrestling programs are concentrated in the 'Mid-Atlantic' and 'Midwest.' The Southeast, which will include the states of West Virginia, Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee and Kentucky in this study, is highly underrepresented. This paper will explore the spatial distribution of intercollegiate wrestling opportunities throughout the Southeast. This paper will create models to determine where intercollegiate wrestling opportunities are lacking based on tangible metrics of grass-roots success. These models vary in strength because so many qualitative factors play into these decisions, but show that some Southeastern states are underrepresented at the collegiate level.

## USING GIS TO ADDRESS FOOD AVAILABILITY IN DURHAM, NORTH CAROLINA

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It is no coincidence that low-income communities suffer from the brunt of health-related ailments such as diabetes and hypertension. While factors such as lifestyle choices, the environment and genetics affect these patterns, accessibility to fresh and healthy food is another. The USDA has devised the term 'food desert' to describe areas with limited accessibility to supermarkets within low income communities. However, food deserts are defined at the census tract level, a fairly coarse unit that may contain more than 10,000 people in Durham County. This paper will use Geographic Information Systems to explore accessibility to supermarkets in Durham, North Carolina with much finer detail. Food deserts will be mapped with pixel (100 by 100 foot) resolution using raster-based computations. Taking this analysis one step further, analysis will select a potential supermarket site where food deserts would be mitigated the most within the study area. Models will be created to help explain supermarket accessibility using a variety of census-derived variables or indicators. Convenience stores also serve as a source of food, but the quality and variety of food is insufficient. This study will also look at convenience store accessibility within the study and will explore factors explaining this accessibility.

Keywords: Food Desert, Food Accessibility, Spatial Analysis, Linear Modeling, GIS

# PUBLIC PARTICIPATION IN THE REDISTRICTING OF THE STATE OF FLORIDA

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For the upcoming 2012 redistricting, the House of Representatives of the State of Florida created a website to serve as a public resource. At its core is MyDistrictBuilder, an online GIS application. Promoted as a public participation project, MyDistrictBuilder allows Floridians to build their own district maps to submit to their representatives for consideration during the upcoming legislative session. This paper examines the Florida Redistricting website and MyDistrictBuilder to determine if it is an effective tool for community participation and if it truly engages the public in the redistricting process.

## Contested Space: the Mexican Periphery following the end of the Social Property Era

Andrew Norris

University of Southern Mississippi

Since the transition from social property to privatization in 1992 through reforms to Article 27 of the Mexican Constitution Mexico has seen dramatic changes across its landscape. The growing rural to urban migration complex has increased substantially and urban centers are growing faster as a result. Stakeholders in peri-urban social properties are now faced with the choice to sell their land and relocate or become engulfed by the expanding city around them. Simultaneously both private investors and recent migrants struggle to incorporate themselves into the contested peripheral space creating a vibrant illegal land market. This paper examines the processes and programs that enable/disable land tenure transformation in the city of San Luis Potosi, Mexico.

## “Where to Have it”: Local Foods as Communities or Commodities?

Eric Nost  
University of Kentucky

The growing local foods movement is defined largely as an attempt to “know your farmer, know your food” in the hopes of enacting of social, bio-physical, and cultural change. This paper treats local foods as objects of value - commodities - in order to evaluate these sorts of distances between farmers and eaters. In what ways are local foods commodities and to what effect for the relationships between these actors? Elaborating upon ethnographic research conducted with a community food project, at a farmers market, and at two community-supported agriculture (CSA) farms in the Midwest, I find that such institutions do not necessarily bridge the farmer-eater divide. Using Marx’s thoughts on the commodity fetish as a guide, I argue that the work commodification performs in food systems - work of abstraction and homogenization - serves to sever meanings and muddle relations that are ostensibly fundamental to the local foods program. I conclude by speculating on the dynamics of this dilemma. While it may not be of immediate concern, over the long haul commodification may prove to be a detriment to the movement’s viability.

## The Legacies of Losing: Rethinking the ‘failure’ of Toronto’s Olympic Games bids

Robert Oliver  
Virginia Tech

Few cities have been more aggressive than Toronto, Canada in trying to capture the right to host the Olympic Games. From an interest in the 1960 Olympics to the recently failed bid for the 2008 Games, Toronto’s ongoing exercise in Olympic imagineering has produced a rich history of trying to frame an important public symbol in the interests of urban redevelopment. Toronto’s bids for the Olympics have never been successful, but this research argues that there is much to be gained from investigating a city that has failed to win the right to host the Olympics Games. The bidding process remains crucial to the course of urban redevelopment even in the event of a failed bid.

## Forecasting tourist decisions with weather and climate references

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Tourism climatology studies complex relationships among people, business, weather, and climate within the tourism industry. This research tests these interfaces in the southeast United States at the North Carolina Zoo and Zoo Atlanta. Both seasonal and day temporal scales show definitive interactions and dependencies between zoo attendance and weather. These interactions are not constant and are observed to change based upon season, social influences, and the layout or positioning of the zoo itself.

## To 'Catch A Crop': Double Exposure and Agricultural Change in Rural Jamaica

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Predictions suggest that the Caribbean region will experience significant negative impacts from global climate change. This is a particular concern for the region's farmers, who are already coping with challenges arising from globalization and agricultural restructuring. Scholars have described this as a 'double exposure', and have stressed the need for case studies examining how particular groups or regions face simultaneous negative impacts from both environmental and socioeconomic stressors. This paper presents results from a research project examining double exposure among small farmers in Jamaica. Drawing on data from interviews conducted in the region, we highlight two different forms of vulnerability experienced by farmers: economic factors, such as low prices and lack of transportation; and climatic factors, such as higher temperatures and a greater incidence of storms. Rather than simply reinforcing each other, these two forms of vulnerability interact in interesting ways, such that, for example, an extreme weather event can benefit farmers by increasing prices. Overall, our research suggests that the ability of producers to adapt in the face of double exposure is dependent upon a host of regionally-variant factors. We conclude with some thoughts on how the double exposure framework might be modified to account for Caribbean regional dynamics.

## Locating Lactation Spaces: The Lactation Support Program at Virginia Tech

Jennifer Porter and Robert Oliver  
Virginia Tech

The Lactation Support Program at Virginia Tech was established in the early 2000s as a way to support breastfeeding mothers after they return to work and improve the recruitment and retention of female faculty, staff, and students at the university. In demarcating lactation spaces for pumping and nursing the university may not be merely supporting mothers and families; they also represent an opportunity to challenge or reinforce the structural barriers to the female body that limit women's participation in the workplace and in public. This ongoing study seeks to use interviews with key stakeholders and historical documents to evaluate how the success of these programs might influence the way we think about breastfeeding and the female body in public space. In this context, lactation rooms begin to emerge as more than mere spaces for pumping and nursing support, rather they take shape as subtle instructive tools that delineate appropriate behavior for public interactions. Semi-private lactation rooms exceptionalize breastfeeding in public space and ultimately limit the choices and power of women.

An Assessment of Socioeconomic Vulnerability to Hurricanes along the Mid-Atlantic  
and Northeastern Seaboard of the United States

Shivangi Prasad

Florida Atlantic University

The relatively smaller frequency of hurricanes in the mid-Atlantic and northeastern states of the United States has made it an understudied region from the perspective of hurricane vulnerability. Hurricanes, though rare, are not unknown in this part of the country. This highly dense and heavily populated urban corridor is a high consequence region for a catastrophic hurricane. This paper examines the county level distribution of human vulnerability to hurricanes based on demographic, social and economic factors.

Vulnerability distribution is assessed in terms of county population size and location (coastal versus inland). Data from the American Community Survey (2005 to 2009) is used for analysis. Large cities along the Boswash megalopolis are highly vulnerable. The largest counties in the region are at either end of the vulnerability spectrum. The most vulnerable counties are the coastal counties. Economic and social conditions correlate more highly with vulnerability than does demographics.

## Geospatial Aspects of Wine Laws in the United States

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Vagn K. Hansen, University of North Alabama  
Matthew D. Balentine, University of North Alabama  
Gerald R. Webster, University of Wyoming

Interest in wine has increased in the United States, yet geographic research on wine law in the United States is in its infancy. This paper introduces a research project on the geospatial aspects of wine laws in the United States. We then examine the legal basis for state wine law, which largely stems from the Twenty-First Amendment to the Constitution and from the Commerce Clause. The Twenty-First Amendment gives states the right to regulate wine and other alcoholic beverages in a way that states are not able to regulate other products, and post-Prohibition state wine laws vary considerably from state to state. After reviewing the status of state wine laws, we describe three vignettes, each introducing a geospatial aspect of wine law: direct shipping laws, state wine distribution systems, and corkage/BYOB laws. Our initial conclusions indicate weak to limited regional patterns for these laws, suggesting that the explanation for each state's laws is to be found in a myriad of factors, rather than in overarching regional characteristics.

## A Rift in Space-Time: the Tea Party National Convention and Representations of the US Revolution

Nick Quinton  
Florida State University

Though often exaggerated, the Tea Party is a relatively loose network of autonomous political action groups across the US. These disparate groups establish and maintain ties with one another for a common goal and undertake a variety of contestations to achieve their purpose. In doing so, the Tea Party crafts a representation of the US Revolution that manufactures a link between personal freedom and markets. But as the majority of people in the US suffer in the “Great Recession,” the version of individual freedom the Tea Party movement represents masks the very roots of that suffering and promotes a social order that makes it possible. The presentation seeks to ground Tea Party rhetoric in geographic context as a step toward reanimating the material bases of Tea Party politics. As such, it covers the initiation of the Tea Party movement, its representation of the US Revolution and market fundamentalism, and the contradictions associated with this representation evident during the National Tea Party Convention.

FOREST FIRE AEROSOL FORCING OF PRECIPITATION  
ALONG THE U.S. SOUTH ATLANTIC COAST

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DEPARTMENT OF GEOGPHY

ABSTRACT

This thesis uses six case days to examine the effects of aerosols produced by forest fires on the development of deep marine clouds and their ability to precipitate available cloud liquid water (CLW) along the U.S. South Atlantic coast. A proxy for precipitation efficiency (CREP) is calculated using a blended satellite precipitation product and CLW path from the Advanced Microwave Scanning Radiometer – Earth Observing System (AMSRE), following the methodology of Jin and Shepherd (2008); Berg et al. (2006). This study finds that shallow precipitating clouds are very rare, likely due to precipitation suppression from forest fire aerosols. Upwind aerosol optical thickness (AOT) values of  $>1.5$  are needed for a noticeable impact on precipitation in deep clouds. Cloud effective radius is decreased in all six cases. CREP shows inconsistent aerosol forcing on precipitation for high aerosol cases. The discrepancy may be related to suppression of precipitation when a high percentage of cloud condensation nuclei are thrust above the level of homogeneous nucleation by intense updrafts.

# The Role of Whitebark Pine and Blister Rust in Treeline Community Dynamics, Western Montana

Lynn M. Resler<sup>1</sup>, Lauren, N. Franklin<sup>2</sup>, Emily K. Smith-McKenna<sup>1</sup>, Jacob B. Snyder<sup>1</sup>, Diana F. Tomback<sup>3</sup> and George P. Malanson<sup>4</sup>

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At alpine treelines of western Montana, whitebark pine plays an important role in pattern development through initiating tree islands. This process is currently threatened by blister rust, which will, in turn, affect vegetation pattern through mortality. Here, our goal is to characterize the role of whitebark pine as a tree-island initiator by slope, latitude, and aspect, and also to determine how existing landscape pattern may influence blister rust infection in treeline whitebark pine. We sampled whitebark pine and canker density in 60 sampling plots at two study sites in western Montana. Pattern at treeline was characterized using landscape metrics manually calculated and derived from FRAGSTATS. Nonparametric tests assessed geographic variation in the occurrence of whitebark pine, role of whitebark pine as a tree island initiator, and blister rust infection. We found whitebark pine to be an important treeline component and tree island initiator at both sites, especially on northeast facing slopes, where whitebark pine mortality was also the highest. Patch size and contiguity were correlated with canker density, though aspect was not. Our results indicate that in the context of community dynamics, the influence of geography and climate variables may preside over that of existing landscape pattern.

## The Church Telling Local Homeless to “Come To Our House”

Matthew Robinson  
Virginia Polytechnic Institute and State University

In early 2011, the To Our House (TOH) program opened its doors to homeless men in the New River Valley Area, Virginia. The program is a grass roots response to the death of a well-known local homeless man and the goal of the program is to provide winter shelter for single adult men by using rotating host sites. Local churches have been a heavy supporter and instrumental part in the creation of TOH. Two questions are under investigation. First, why has the rectification of this issue fallen on local churches? Secondly, what are the implications of having church involvement?

## An Aspatial Economics? The Economic Geography of World of Warcraft

Edward Heath Robinson  
The University of South Florida

Human beings have a long history of creating alternate worlds, but for most of that time, sharing these alternate worlds with others has been limited to one-way communication channels (such as oral stories, books, television, and film) between the creator(s) and the audience. This has changed with the advent of technology which allows alternate worlds to be instantiated within computer systems and interacted with. This makes it possible to study the underlying mechanics (such as the economic structure) of these alternate worlds. This article examines the spatial components of the economic system found in Blizzard Entertainment's World of Warcraft. It also discusses the ways space and distance are used in the game only when such geographic constraints are intended to enhance the gameplay experience. When these constraints are perceived to hurt that experience, space and distance are allowed to fade away. This leaves the user to operate in an aspatial environment, such as the largely aspatial player-to-player economy, which is founded upon a mailbox system that allows the instantaneous shipment and delivery of goods, and eBay-like Auction Houses.

## Quantification of Single- and Multi- jurisdiction Space-time Interaction Differences

George Roedl  
West Virginia University

Using crime incident data from a campus police department and the neighboring municipal police department, space-time interactions are calculated using a Knox index. Values of observed space-time clusters are summed and compared to the calculated Knox index of the combined incident data. Results suggest separate analyses underestimate the actual number of space-time clusters. Since the omitted clusters occur along the campus edge, the implications could result in an underestimation of student victimization potential and lack of crime reduction efforts if based solely on crime mapping techniques. Results further suggest an empirical relationship between campus crime and surrounding community crime.

Tree-Ring Based Drought Reconstruction for the Central Khan Khentii Mountains,  
Mongolia (1675-2000)

Tom Saladyga (Concord University, Athens, West Virginia)  
Neil Pederson (Lamont-Doherty Earth Observatory, Columbia University, Palisades,  
New York)

In mountainous regions where climate change is least understood, long, high-resolution records of climate variability are typically unavailable. Here, we present a tree-ring reconstruction of spring and summer (April-August) Palmer Drought Severity Index (PDSI) for a grid point in the central Khan Khentii Mountains (48.75 N, 108.75 E) near the capital city of Ulaanbaatar. Our nested reconstruction extends from 1675 to 2000 and explains 60% of the variance in instrumental PDSI (1945-1993). Major drought events occurred from 1730-1739, 1722-1726, 1898-1907, 1928-1932, 1943-1947, and 1978-1983. The most recent drought event from 1996-2005 is the most severe only when instrumental data (2001-2005) are appended to the end of the reconstruction. The strongest pluvial events were 1933-1942 followed by 1783-1790. We used regime shift detection to identify major discontinuities in moisture availability throughout the reconstruction. These shifts were more frequent during the 20<sup>th</sup> century than any other period of the reconstruction, suggesting a growing need for increased adaptability of the livestock industry and natural resource managers. This study also highlights the need for meteorological stations in mountainous regions in order to decrease uncertainties in predicting and understanding localized climate change.

# The Political Ecology of Tropical Timber and Traditional Populations in the Peruvian Amazon

David S. Salisbury  
University of Richmond

Peruvian timber exports continue even as accessible stocks of mahogany and tropical cedar dwindle in the lowland Amazon forests, forcing loggers to penetrate to more distant areas, log lesser valued and poorly known species, and engage in arrangements with indigenous peoples living in the still timber rich territories. This study investigates how three indigenous Amazonian communities grapple with the Peruvian tropical timber industry, its forced labor practices, and complex and changing informal patronage system. Indigenous Amazonians assert themselves as both defender of forests and exploiters of timber depending on their circumstances and location. Their agency contests the concept of empty Amazonian landscapes, instead shaping forests as homelands: inhabited by a people rooted in the political ecology and political geography of the frontier, capable of galvanizing the nation state to defend resources and territory or of entering into debt peonage relations with illegal loggers. Methods include a combination of participatory methods, key informant interviews, ethnography, participant observation, point collection and attribute collection with GPS, key informant interviews, and map analysis. Results demonstrate the complex and contradictory negotiations of indigenous people engaging a global timber industry, an antiquated informal patronage system, and tropical forests replete with biodiversity.

## Shelter Seeking Plans of Tuscaloosa Residents for a Future Tornado Event

Jason C. Senkbeil  
Meganne Rockman  
John Mason  
University of Alabama

The EF4 Tuscaloosa, AL tornado on April 27<sup>th</sup>, 2011 produced 63 fatalities and almost 1500 injuries along its nearly 130 kilometer track. Hybrid survey/interviews were conducted with a sample of 211 Tuscaloosa area residents to determine how the April 27<sup>th</sup> tornado might change future shelter seeking plans. Of the respondents who had a shelter plan before April 27<sup>th</sup>, 22% said they would change their plan. Of the respondents who did not have a shelter plan before April 27<sup>th</sup>, 39% said they would change their plan. Logistic regression with demographic variables was then used to predict who was likely to have a shelter plan before April 27<sup>th</sup>, and who is likely to change their shelter plan. Among these variables, residents over age 55 (OR 8.9,  $p = .002$ ), and those having a bachelor's degree (OR 5.1,  $p = .017$ ) were more likely to have a shelter plan before April 27<sup>th</sup>. Males were less likely to have had a plan (OR 0.59,  $p = .097$ ). Among the variables indicating a significant change in future shelter seeking plans are being Latino (OR 5.2,  $p = .003$ ), and having your home destroyed by the April 27<sup>th</sup> tornado (OR 2.5,  $p = .06$ ). These results may assist NWS personnel, broadcast meteorologists, and emergency managers with the development of targeted warning communication tactics and safety strategies for a future tornado event.

Title: Informal Economy and Labor Segmentation: A Preliminary Analysis of NCT-Delhi

Madhuri Sharma  
University of Tennessee

The informal economy has an immense contribution in the urban development and economic prospects across all regions of the world. This paper focuses on the overall significance of informal economy in the urban context of National Capital Territory of Delhi (NCT-Delhi), India, and how the people engaged in informal economy might be directly or indirectly impacting the socio-spatial landscapes of NCT-Delhi. Being the capital city, Delhi attracts domestic as well as international migrants, and very often various agencies of migration also influence the availability and characteristics of labor market. This paper highlights few such aspects that might create segmentation among the labor engaged in informal economy. These occur along lines of occupation, caste, religion, technical skills, educational achievements, geographic distance between origin-destination, etc. Also, the policies laid down by the Government of India and the exclusionary urban development are other reasons that relate to uneven spatial development within the NCT-Delhi.

## Experiences of Smithville, MS Residents with the April 27 Tornado

Sherman-Morris, Kathleen (1)

Brown, Mike (1)

Brown, Karyn (2)

Bell, Brittany (1)

Jackson, Philip (1)

(1) Department of Geosciences, (2) Department of Communications, Mississippi State University

Interviews were conducted with residents of Smithville, Mississippi following an EF5 tornado in April, 2011 that killed 16 people. The purpose of the interviews was to determine how information was used just before the tornado touched down. Individuals who were at home searched for more different types of information, and individuals in cars looked for or received the fewest types of information. The individual stories of those who did not try to find a safer place during the tornado do not share many qualities. Respondents who received a number of confirmatory cues or messages still chose not to seek shelter. About one third of the respondents thought some of the sirens that day had been unnecessary, but only one person believed the amount of television coverage was too much. Comments made by some of the respondents indicate they stopped paying attention to the warnings or did not take them seriously at the time. Finally, respondents offered suggestions to improve the warning process in the future. Of those who offered suggestions, most suggestions made by respondents older than 50 mentioned improvements to sirens while respondents 50 and younger made more suggestions regarding phone applications and text messaging.

## Rebuilding Lives in a Midwestern City: The Case of Somali Refugees in Kansas City

Shimantini Shome  
Concord University

Kansas City has seen a rapid growth in the population of Somali refugees over the last decade. This paper is based on primary data collected during two years of fieldwork and explores the reasons that bring these refugees to this mid-sized Midwestern city. It explains the background of these refugees and examines the role that local organizations play in helping them rebuild their lives in a totally alien environment. It also identifies and discusses the major challenges they face in the process of assimilation with the host society.

Spatial Politics & Environmental ‘Barriers’:  
Conceptualizing the ‘Nature’ of Scale and Development on Jekyll Island, Georgia

Eric Spears  
Mercer University

The implementation of sustainable development is perhaps most contentious when associated with fragile and complex coastal ecosystems. Such is the case of Jekyll Island, Georgia, which is a natural barrier island that buffers the Atlantic Ocean from one of the largest coastal marshes in the United States. Jekyll Island has been a site of exploited nature since 1886, the year when prosperous northeastern industrialists formed the Jekyll Island Club. Environmental controversy continued throughout the twentieth century as resort development, the creation of a state park, and environmental protection shaped the island’s dialectics. The revitalization efforts on Jekyll Island in the early twenty-first century also demonstrate the political ecology of this coastal community remains relevant and cantankerous. The economic successes of other regional barrier islands, the loss of state revenue during a recession, and the ambition to attract high-end tourists have inspired new geographical imaginations over the way Jekyll Island will look and feel. Jekyll Island’s politics of scale are centered on who commands nature: the state park’s development authority or concerned citizens. This paper places these spatial politics into the historical conceptual framework that shapes the contemporary debate of sustainable practice in Coastal Georgia.

Old-growth on the tablelands of the Cumberland Plateau: forest history and management implications

Justin Hart<sup>1</sup>  
Megan Buchanan<sup>1</sup>  
Stacy Clark<sup>2</sup>  
Scott Torreano<sup>3</sup>

<sup>1</sup>Department of Geography, University of Alabama

<sup>2</sup>Southern Research Station, USDA Forest Service

<sup>3</sup>Department of Forestry and Geology, University of the South

Forest reconstructions provide information on the processes that influence development and succession. In this study, we quantified composition, structure, and radial growth patterns of *Quercus* trees to document the processes that shaped a *Quercus*-dominated forest over the past three centuries on the Cumberland Plateau. The oldest trees on the site established in the late-1600s. The forest was dominated by *Quercus alba* but the most important species were *Acer rubrum* and *Oxydendrum arboreum* which were very abundant in small size classes. *Quercus* recruitment has been continuous over the past three centuries whereas *Pinus* established in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries and *Acer* established in the 1940s. *Pinus* recruitment corresponded to stand-wide canopy disturbance while *Acer* recruitment had no relationship to overstory removal. Over the last three centuries, we contend this has been a *Quercus* forest with *Pinus* restricted to patches that corresponded to canopy disturbance. The more recent profusion of *Acer* in the understory may inhibit the regeneration of *Quercus*. Under the current gap-scale disturbance regime canopy composition should change to have a much stronger *A. rubrum* component. Reserve managers must decide if the current successional pathway is desirable and if not which silvicultural prescriptions are appropriate.

Sunbury, Pennsylvania  
Toward a Critical Geography of Decline of the North American Small Town

Chad Steacy  
University of Georgia

This paper summarizes a research project investigating the local response to place-based economic decline in a small working-class town in central Pennsylvania. Employing the explanatory framework of David Harvey's principal of uneven development and Neil Smith's "See Saw" Theory of same, research focused upon the meeting point between global economic structure and local context as embodied in community discourse. This study represented by this paper develops a classification scheme in which prominent community understandings of decline are categorized according to their response to the capitalist spatial narrative that all places can be successful if the people composing them are willing to work hard enough. These categories are characterized as narratives that comply, narratives that deny, and narratives that defy. It is proposed that within the latter group lies a budding "discourse of local resistance" to the destructive spatial relations of capital. This paper further argues that discourses of resistance – particularly at the small town scale – are deserving of further critical academic attention particularly for their potential in fomenting an alternative to the capitalist "zero-sum" pattern of spatial development where some places can grow, but only at the expense of others.

Degrees of Cooling: Creative Class Language and Revitalization Efforts in Birmingham,  
Alabama

Jennifer Speights-Binet, Samford University  
Eric Fournier, Samford University

The Creative Class thesis is based on the idea that economic growth and prosperity is driven by workers engaged in information-related activities: programmers, designers, artists, researchers, and others not employed in industrial occupations. According to this theory, cities which attract and retain creative residents prosper, while those that do not stagnate. This approach to economic development has gained widespread adoption in a wide array of cities from Bridgeton, Maine to Shanghai, China. This paper explores the degree to which creative class language and practices have been adopted and implemented by the pro-growth coalition in Birmingham, Alabama, and how these practices translate into tangible results.

## An Overview of Challenges in Estimating Lawn Water Use and a Discussion of Alternative Methods

Felicia D. Survis and Tara L. Root  
Florida Atlantic University

Lawn water use is typically estimated by rules of thumb which are generalized and are often applied across widely different geographic regions. While these rules of thumb might be the most practical means of estimating lawn water use, they leave water managers with a very rough and incomplete understanding that does not account for many significant factors including, lawn watering practices in response to pricing, policy, and temporal and spatial variations in climate. Typically these estimation methods also exclude and thereby obscure the volume of lawn water use from the unknown number of households that use unmetered, self-supplied water on their lawns. Given the inherent uncertainties in traditional rule of thumb estimates and the increasing need to quantify and allocate diminishing freshwater resources, it is more important than ever to develop direct and accurate methods to estimate the scale of lawn water use. The alternate methods developed in this study were effective at improving estimates of lawn water use on the neighborhood scale. A combination of semi-structured interviews, daily watering observations and irrigation system audits allowed for a comprehensive accounting and quantification of the volume of water that is at stake from all households regardless of the water source.

## Geophysical Remote Sensing at Guilford Courthouse National Military Park

Roy Stine  
Linda Stine  
Jacob Turner  
UNC Greensboro

A ground penetrating radar and a dual gradiometer magnetometer were used prior to and during an archaeology excavation at the Guilford Courthouse National Military Park, North Carolina. Both instruments were employed to help the archaeologists and geographers gain insight into below ground cultural deposits. This research in-turn helped the archaeologists to determine where to place excavation units. Both instruments revealed a variety of features both known and lost to the historic record. Some of the finding included recovering evidence of past excavations undertaken in the 1970s whose exact locations were not currently known, discovering the foundations of a structure near the courthouse location and possibly the retreat road and/or a gully that played important roles in the revolutionary battle at the Courthouse.

## To Purchase or Not to Purchase A Parking Pass: Examining Students' Parking Decision in College Campuses

Selima Sultana

Mark R Schulz

Molly Hagen

Marcie Dalrymple

University of North Carolina at Greensboro

This research investigates the major factors that are associated with college students' decisions to purchase or not purchase parking passes in the university campuses by using University of North Carolina at Greensboro (UNCG) as case study. Research based on adult travel behavior suggested many factors such as built-environment, household and individual characteristics, attitudes towards cars, and perceive mobility necessity are associated with car use. However, the above factors may insufficiently explain college students' car use. College students are a demographic whose living situation may not be as complicated as all other adults and are associated with many campuses that made progress on building street networks conducive to other mode choices. This is a critical inquiry much needed for designing interventions aimed at changing students' travel behavior for achieving sustainability in any university campus. The target population comprised a sample of 2300 students at the UNCG through a web-based survey. Our cross-tabulations analyses suggest distance from campus is the major contributor for buying parking passes on UNCG campus. Car use habitual behaviors that began in high-school seemed to persist through college and have little relation to one's environmental beliefs. Convenience is a major contributing factor for students' car use.

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## Atlatl to Arrows: Climate Change 10,000 Years Ago at Russell Cave, Alabama

Alice Luthy Tym  
University of Tennessee at Chattanooga

Climate change 10,000 years ago affected the vegetation, megafauna, and human activity in Russell Cave, Alabama. Located in Doran Cove in the northeast corner of the state, this east-facing limestone chamber provided shelter for PaleoIndians who hunted mastodons and mammoths with fluted points. Later, during the Archaic Period atlatls were used. As the Ice Age ended and warming began, the vegetation shifted from the spruce and swamps desired by the mastodons to the deciduous forests of today. Deer and rabbits replaced the megafauna. Native Americans adapted by changing to bows and arrows to hunt. As agricultural societies developed between 1600 and 1000 years ago, the cave's importance and usage diminished. Russell Cave became a National Monument in 1961.

## Life and Death in the Racial State

James A. Tyner  
Kent State University

This paper constitutes an engagement with the modern racial state. Through a discussion of sovereignty within the context of biopolitics, I consider how the modern racial state engages in the calculated management of life and death. I maintain that the sovereign right to live or to die within the modern racial state hinges on the valuation of lives deemed responsible and/or productive. Those individuals—African-Americans, single mothers, the poor and destitute—are deemed beyond the obligation of the modern state; in short, current policies and practices within the modern racial state operate to disallow life to the point of death.

Global Competition and Talent Acquisition:  
The Information Technology Industry in Bangalore

Micheline van Riemsdijk  
University of Tennessee

Bangalore, also known as India's Silicon Valley, is a major hub for Indian and foreign-owned software companies. These companies are vying to attract talented workers to remain competitive in the global knowledge economy. The information technology (IT) industry needs highly skilled labor to drive innovation, and IT specialists are currently in high demand worldwide. This paper investigates the ways in which Indian and foreign-owned IT companies in Bangalore try to attract and retain skilled workers. In particular, the paper focuses on the perspectives of human resource (HR) managers and IT specialists in product and service companies to gain deeper insights into the factors that shape the hiring and retention of talented workers. In addition, the paper addresses institutional obstacles to talent recruitment. The findings of this paper are based on fieldwork research and in-depth interviews with eight HR managers and six IT specialists in Bangalore in December 2010. These interviews provide insights into the actual practices of talent recruitment and the operation of the IT labor market in India. The findings of this paper contribute to literatures on globalization and innovation with field-based insights into talent recruitment and long-term retention of IT specialists.

## Transition in American Agriculture: Specialty Crops with a Conscience

Susan M. Walcott

University of North Carolina Greensboro

New producer and consumer pressures push a transition in agricultural practices and ethics examined in this study of the nursery-flora-horticulture subsector of specialty crops. Tea, honey, maple syrup and cut Christmas trees comprise four of the six components of this group with strong historically American ties. Interviews with growers and industry supply chain businesses, field visits, and census data flesh out the picture of an emerging new food conscientiousness that confirms many of the elements integral to the predicted transition. Multifunctionality constitutes a key component including an ethical commitment to enhanced organic practices, local and geographically identified products, agritourism, and concern for environmental sustainability. These characteristics are particularly prevalent among smaller volume producers seeking more diversity and sensitive to new consumer niches to compensate for the higher per product cost of these methods that are reshaping the nature of American agriculture practices.

# The Socioeconomic Impact of Low-Income Housing Tax Credit Projects on Qualified Census Tracts in the Southeast

Rebecca J. Walter

Florida Atlantic University

The federal Low-Income Housing Tax Credit (LIHTC) program, authorized in 1986, has gained recognition over the last decade as America's largest affordable housing production program. The Qualified Census Tract (QCT) provision of the LIHTC program awards developers for projects built in high-poverty neighborhoods. Although the LIHTC program aims to create more economic diversity, the 30 percent QCT bonus component that encourages private developers to provide affordable housing in disadvantaged neighborhoods may mitigate the deconcentration goal. In this study, socioeconomic variables including the poverty rate, educational attainment, the unemployment rate, and median household income are examined from 1990 to 2009 for the three largest MSAs in the Southeast – Miami-Fort Lauderdale-Pompano Beach, FL MSA, Atlanta-Sandy Springs-Marietta, GA MSA, and Tampa-St. Petersburg-Clearwater, FL, MSA. The results of this study delineate the impact LIHTC projects have had on the landscape of poverty in Southeastern United States QCTs over the last two decades.

## Analyzing Justice in Community Development

Andy Walter, University of West Georgia and Katherine B. Hankins, Georgia State University

Over the past decades, state devolution and shifts in urban governance have offloaded social welfare responsibilities to the nonprofit sector, expanding its role in neighborhood processes of growth and change. The increasing role of the nonprofit sector has infused the values of its constitutive actors, including a large number of faith-based organizations, into local politics and governance. Specifically, a growing number of neighborhoods are being changed by organizations engaged in Christian community development, a social movement that is explicitly concerned with “doing justice” through spatial praxis. The study centers on a comparison of traditional, secular, organizations with those that engage in Christian community development. In this research we explore the extent to which their principles of justice differ from those embedded in “neoliberal urbanism” (the dominant mode of urban governance and development), and if so, how? How do Christian community developers put the concept of justice into practice? We investigate the community development efforts in two organizations that operate in distressed inner city neighborhoods in Atlanta. One of these organizations is explicitly faith-motivated, drawing on a "radical" social justice agenda involving strategic spatial praxis. Through qualitative investigation the paper investigates the ways in which “justice” is articulated and practiced by both faith-motivated and secular community development efforts and the extent to which Christian community development enacts a distinct spatial justice praxis in cities.

Exclusionary public land management and the impacts on forest-dependent livelihoods: a case study of honey producers in Northwest Florida

Kelly Watson  
Eastern Kentucky University

In the face of land-use change and development, public lands are increasingly important as enclaves for both the conservation and management of natural resources. Public lands also have the potential to support forest-based natural resource livelihoods. As such, public lands represent interesting and relevant socio-natural spaces. Within public lands across the US, “natural” environments are given boundaries, subject to regulation, and managed for various uses—sometimes in the name of conservation, other times for timber, hunting, and other human uses. However, the effective and judicious management of these socio-natural spaces for the greater good of both long-term sustainability and to the mutual benefit of disparate stakeholders remains a challenge. This paper examines a case study of honey producers in rural Northwest Florida, illustrative of public land management policies and practices that largely exclude resource users and diminish the effective use of forest resources on public lands. The wealth of knowledge and experience possessed by forest-depend communities is an important resource for land managers, government, and policy makers; yet this knowledge often remains unrecognized or untapped. As a result, public land managers may promote a particular version of forest which either directly or indirectly excludes local forest-dependent communities.

## The Geographical Challenge of Shrinking Cities: Infrastructure and Water

Henry Way (James Madison University, Virginia, USA)

Aylin Ludwig (Buro Happold, Bath, UK)

Celia Way (University of Bristol, UK)

While plenty of attention has been given in recent times to how declining industrial cities might recast themselves in terms of their economic identity and image, less thought has been given to how shrinking cities might manage their fundamental infrastructure. This paper explores the geographical contexts and responses to population decline and its impact on water utilities. In growing cities, the challenge is to stretch limited resources to meet expanding demands; the opposite difficulty is faced by shrinking cities: how to effectively reduce supply to meet diminishing demands. The most prominent examples of this situation are in Eastern Germany in the period following reunification, and across cities in the 'Rust Belt' in the United States of America, where populations have declined significantly in the past 50 years. Considering especially the case of Detroit, this work looks at the infrastructural challenges faced by such a shrinking city, the impact of changing urban geographies on water utilities and identifies what lessons can be learnt for future infrastructure planning. Changing urban geography will inevitably prompt a restructuring of utility geography.

Isabi, Ilekanka Menshi (A Fish Follows Water): Estimating Annual Precipitation Inputs to the Lake Mweru Basin, Zambia-Congo, and their Spatial and Temporal Variability, 1925-86.

Peter Waylen, University of Florida  
Christopher Annear, Hobart and William Smith Colleges  
Youliang Qiu, University of Florida

Rainfall records from 67 stations around the basin contributing to Lake Mweru, Zambia, are combined to produce a time series of estimated basin inputs 1925-1986. Mapping of the simple statistics of annual precipitation, emphasizes the bowl-like structure of the basin. Mean annual precipitation and its standard deviation are inversely related to elevation, with the highest values occurring over the complex of lakes and wetlands on the Bangweulu Plateau. The continued presence of high variability (coefficient of variation) suggests that this region is disproportionately responsible for the noted variability in the time series, a conclusion supported by composite maps based on the 10 years of maximum and minimum inputs. High interannual variability and persistence is noted over the period 1943-1963. Wavelet diagram of the input series is compared to those of the three global scale drivers of, the Southern Oscillation Index, the North Atlantic Oscillation Index and the Di-pole Mode of the Indian Ocean, although no clear candidate emerges. The absence of such global during this 20 year period may have given rise to the greater interannual variability and persistence of the estimated input series, by permitting the enhancement of precipitation recycling above the region.

## Postbellum Racial State and Capital

Bobby M. Wilson  
University of Alabama

This paper examines the way in which the state selected to regulate and manage race following slavery. It is argued that the postbellum racial state selected to regulate and manage race in a way that would not be a barrier to commodity exchange and consumption and yet maintain as much as possible the racial status quo. The postbellum state disciplining of race differed from that of slavery, which was based on a relation of appropriation of bodies. Emancipation required a new marriage proposal between the racial state and capital. Without commodity exchange, capital is dead. The state found it necessary to provide capital with a more racism than that which sustained slavery.

## Borders, Geopolitics and International Crime in the Triple Frontera

Peter D. A. Wood  
Florida State University

This paper focuses on the Triple Frontera, the region situated at the border intersections of Argentina, Brazil and Paraguay that is characterized as a zone of lawlessness, illicit trade and global interaction seen through a myriad of levels. While often written off as simply a zone of widespread illicit activity, the Triple Frontera is also a zone of interaction where diverse cultural identities meet and influence each other. Furthermore, as a zone where illicit activities are concentrated, the study of the region can shed light on how “undesirable” processes are marginalized to specific places and peoples. In recognition of these complexities within the region, this paper examines the Triple Frontera in order to gain insights into how such regions form a reflection of both modern political and economic trends and the powerful influences on policies, societies, markets and global connectivity that formal and informal borderings can have.

## Where is Tourists' Next Destination?

Yang Yang  
University of Florida

**Abstract:** This research applies an ordered logit model to study what factors exert influences on tourists traveling distance to the next destination by categorizing destinations according to their distances from the previous destination they visit. It is found that night of stay in the first destination, primitive cost, age, past visit, transportation mode and motivations influence tourists' next destination choice.

# Quantifying Localized Anthropogenic Modification of Air Temperature on Eastern Kentucky University's Richmond Campus

Donald M. Yow  
Eastern Kentucky University

Eastern Kentucky University's main campus is located in downtown Richmond, Kentucky, a city of approximately 33,000 permanent residents. Temperatures recorded on campus were compared to temperature observations at EKU's Meadowbrook Farm eight miles east of campus over a continuous one year period from August 2010 through July 2011. Results show that daily maximum temperature was usually similar at the two sites, but daily minimum temperature was more than 1°C higher on campus 74% of the time. The greatest difference in daily minimum temperature between the two sites was 15.7°C on February 18, 2011. The higher temperatures on campus affect local energy demands for heating and cooling since lower heating degree day totals and higher cooling degree day totals occur on campus. The temperature differences between the two sites also likely affect human comfort and health as well as atmospheric and biological processes on and near campus.

## Salinity Assessment in the Northeastern Florida Bay Using Landsat TM Data

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Human activities in the past century have caused a variety of environmental problems in the Greater Everglades of South Florida. In 2000, congress authorized the Comprehensive Everglades Restoration Plan (CERP), a \$10.5-billion mission to restore the south Florida ecosystem. Many environmental projects in CERP need effective salinity monitoring in the Florida Bay to provide a measure of the progress and effects of restoration on the ecosystem of the Everglades. This study examined the potential of the Landsat Thematic Mapper (TM) sensor to serve as a regular salinity monitoring tool for the Florida Bay. Spatially and temporally matched field surveyed data and TM images collected during Water Year 2004-2006 were employed to establish algorithms for quantitatively assessing the salinity in the northeastern bay area. The empirical algorithms could explain more than 70% of variation in salinity and presented an attractive accuracy. It is concluded that Landsat TM can be used as a promising monitoring tool to assess salinity with desirable spatial and temporal resolution and accuracy. Extensibility of the algorithms for the entire Florida Bay will be tested in the future.