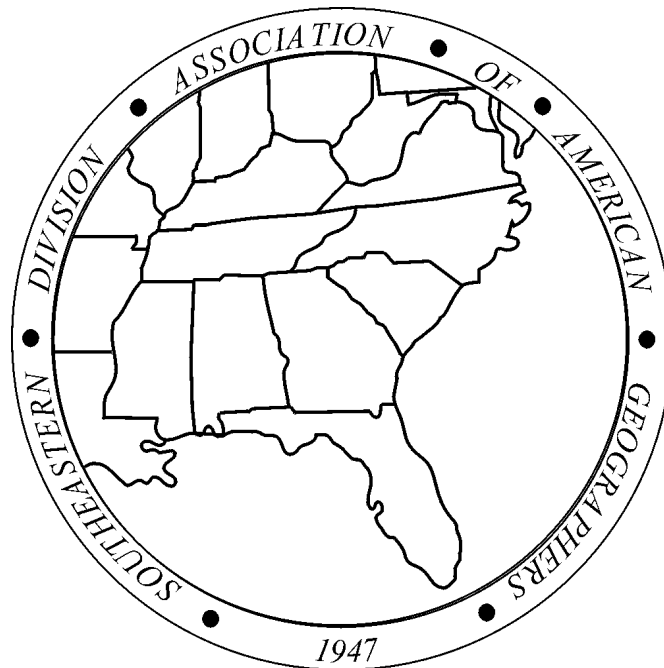


**SOUTHEASTERN DIVISION
OF THE
ASSOCIATION OF AMERICAN
GEOGRAPHERS**

ABSTRACTS



**LEXINGTON, KENTUCKY
NOVEMBER, 2001**

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Mark Abolis, C. Stan Frazier, David Marquette, Jason Powell, Middle Tennessee State University – **Session 9**

MAPPING URBAN LAND COVER IN THE NASHVILLE METROPOLITAN AREA

Landsat and US Census Bureau TIGER/Line data were combined to map three urban and three non-urban land cover classes in the Nashville Metropolitan Statistical Area (MSA). The map depicts land cover circa 2000. Classification errors were estimated by comparing the map with digital orthophotos acquired in March, 1997. Errors of omission for urban classes are lower than for the urban classes of the National Land Cover Dataset (NLCD). Urban classes described here contain 47.5% +/- 10.3% of all developed land, but urban classes on the NLCD map only contain ~28% of all developed land. However, overall map accuracy is ~63% as opposed to an accuracy of 83% for the NLCD map (Land Cover Characterization Program, 2001). Future investigations will focus on improving overall map accuracy, while maintaining low omission error for urban classes.

Christopher Blaine Adams, Virginia Polytechnic Institute and State University & University of North Alabama – **Session 3**

REGIONAL VARIATIONS OF WINERY VISITORS IN VIRGINIA

This paper presents the partial results of research addressing the presence of visitor profiles to Virginia's wineries. The focus of this paper highlights the regional variations found from data collected through interviews conducted with winery visitors. The author proposes that three of the wine regions in the state have statistically significant differences. For research into patterns of visitor behavior these three regions could be used, but for marketing to potential visitors the five regions will suffice.

Kristin Adams, University of Kentucky – **Session 7**

LIESEGANG PATTERNS IN SANDSTONE IN THE NATURAL BRIDGE AREA, KENTUCKY

Liesegang bands exist in many situations in nature, but are common in sandstone as banded zones of iron precipitation. Several theories of the origin of bands of mineral concentration are evaluated in this paper in the Natural Bridge area, Kentucky. Banded oxides in sandstones were examined with respect to their lithologic and topographic setting, relationships to sedimentary bedding and rock fractures, and their geometry. The geometry of the bands precludes an origin associated with wetting fronts or fluctuating water tables. The absence of concentric patterns and of variations in weathering eliminates spheroidal weathering as an explanation. The Natural Bridge oxide bands have no systematic relationship with, and are often clearly independent of, sedimentary bedding and fractures. Thus, field evidence suggests the bands are indeed Liesegang patterns associated with self-organizing chemical precipitation perpendicular to an advancing oxidation front. The majority of Liesegang bands in the study area are dominated by iron oxides. These patterns generally occur within, and never cross or truncate, larger and more irregular bands of Manganese oxide precipitates. This pattern and the redox chemistry of Fe and Mn suggest that the Mn oxide precipitation occurs first, in cracks and fractures, and subsequently limits water movement and Liesegang processes.

Charles S. Aiken, University of Tennessee – **Session 15**

MYTH, FICTION, FACT: QUEST FOR THE HISTORICAL GEOGRAPHY OF OXFORD AND LAFAYETTE COUNTY, MISSISSIPPI

In creating fictional Jefferson and Yoknapatawpha County William Faulkner drew from real Oxford and Lafayette County, Mississippi. The premise of this paper is that much of what is presented as factual historical geography of Oxford and Lafayette County is actually a combination of myth and fact. Faulkner was not concerned with sorting fact from myth in his fiction. However, distinguishing fact from myth is important to perceptive criticism of his work. This paper analyzes four aspects of historical geography: the origin of Oxford as an Indian trading post, the way in which the Chickasaws departed north Mississippi for Indian Territory, the role of Dr. Thomas Isom in early settlement, and ante-bellum Oxford as an idyllic intellectual paradise that was destroyed by the Civil War. Each of the four consists of myth and fact, and Faulkner's fiction reflects each of the four. While Faulkner used two of the myths in a positive way, he made the other two antithetical.

Derek H. Alderman, East Carolina University – **Session 10**

WRITING ON THE GRACELAND WALL: ON THE IMPORTANCE OF AUTHORSHIP IN PILGRIMAGE LANDSCAPES

The journey to Graceland, the final residence and resting place of singer and entertainer Elvis Presley, has become a major pilgrimage within modern popular culture and tourism. As a cultural religious landscape, Graceland plays an important role in both the official and vernacular construction of Elvis as a sacred figure. This paper examines the vernacular aspects of Graceland, specifically the practice of visitors inscribing messages on the fieldstone wall outside of the estate. By focusing on the inscription process, I emphasize the idea of Graceland visitors as "authors" of Elvis' memory and religiosity. Elvis remains an important part of the American imagination because his meaning is not fixed but in constant redefinition by fans and others. A reading of the Graceland wall reveals the existence of several discourses or ways of representing the image of Elvis. This study hopes to advance not only our understanding of Graceland as an American landscape but also the importance of authorship and agency in all pilgrimage landscapes.

Thomas R. Allen, Old Dominion University – **Session 9**

CHANGE DETECTION IN HIGH-ELEVATION CONIFER FORESTS OF GREAT SMOKY MOUNTAINS NATIONAL PARK

High elevation Fraser fir (*Abies fraseri*) forests of the Southern Appalachians have undergone widespread mortality since the introduction of the balsam woolly adelgid in the 1950's. Resulting changes in ecosystem pattern and process have greatly affected floral and faunal communities. We integrated field observations, geographic information system topographic models, and 1988-1998 satellite imagery to analyze spatial and temporal conditions of Fraser fir and spruce-fir ecosystems in Great Smoky Mountains National Park. Tasseled cap indices (brightness, greenness, and wetness) and associated spectral changes for Landsat TM digital data were statistically modeled by topographic variables. Spectral changes were recorded using change vector analysis (CVA) and spherical geometry at multiple scales: individual sites, local ridges, and across the east-west gradient of the study area. Significant relationships were found between elevation and observed spectral changes and among mountain sites representing the east-west chronosequence of adelgid infestation. Topographic derivatives were related to tasseled cap and CVA measures in summary statistics, regression, and correlation analysis, revealing significantly different mortality and regeneration pathways that were a function of topographic settings. Geographic variations of these vectors also detail the scope of east-west and localized upslope progression of fir mortality. The application of CVA provided the ability to summarize variation

in spectral changes (magnitude and direction) and to ascribe measures to mortality and regeneration processes.

Helen Ruth Aspaas, Virginia Commonwealth University – **Session 32**

INVESTIGATING RURAL AFRICAN AMERICAN WOMEN'S BUSINESSES FROM AN INTEGRATIVE PERSPECTIVE

Rural African American women have historically engaged in small business activities. Many of these women are inheritors of an entrepreneurial heritage by virtue of operating soul food kitchens, maintaining hair dressing salons and providing day care services. Some women have managed businesses in the shadows of more visible fathers, brothers and husbands; others have carried on successful businesses on the death of male management, and still others have started their own successful businesses. Often they operate their small businesses in areas with high Black poverty rates. While they do not comprise a microscopic group, only a limited body of literature has focused on this group of women. This paper presents the results of an initial investigation of seventeen rural African American women business owners in central Virginia. The paper discusses linkages that women and their businesses experience in spatial, economic, social, familial and personal contexts. The results suggest that John Sibley Butler's theory of African American entrepreneurship and Candida Brush's model of integrative perspectives are both appropriate for discussing rural African American women business owners.

Keiron Bailey, Kentucky Transportation Center – **Session 12**

AMIS: DEVELOPMENT OF A MULTICRITERIA/GIS CORRIDOR PLANNING METHODOLOGY

Highway corridor alignment presents a highly complex decision environment in which a variety of social, environmental and economic factors must be defined and weighted and tradeoffs evaluated. These data vary widely in format and quality. Stakeholders from various groups, often with competing interests, should be integrated into this process efficiently to determine objectives, to select data and then quantify the importance. Corridor planning is therefore an appropriate domain for the development and application of enhanced methodologies that conjoin multicriteria decision support techniques with the spatial analytic and presentation capacities of a GIS. The Analytic Minimum Impedance Surface (AMIS) methodology is presented. AMIS features the structured integration of stakeholder input into a hybrid Analytic Hierarchy Process (AHP). Emphasis is placed on handling AHP's bias toward individual values and its limitations in preference magnitude ordering. The advantages of the approach are highlighted together with the significance of process design in building an effective methodology. Several potential applications are discussed.

Holly R. Barcus, Morehead State University – **Session 32**

RURAL IN-MIGRATION: A COMPARISON OF URBAN AND RURAL ORIGIN MIGRANTS

Contrary to historical trends, the 1970s and early 1990s experienced significant positive net migration. The resulting growth in some rural areas was the product of increased migration from both urban areas and other rural areas. This paper evaluates differences in urban- and rural-origin migrants using data from the 1991 American Housing Survey. Socio-demographic characteristics, migrations motivations and changes in residential satisfaction are compared across the two groups. Results suggest that urban-origin migrants are more affluent, with higher incomes and education levels than rural-origin migrants. In addition, compared to rural-origin migrants, a greater proportion of urban-origin migrants rate their new location more favorably than the previous location. Although socio-demographic characteristics and comparative satisfaction varies across groups, motivations for moving are similar. For both urban- and rural-origin migrants, housing related reasons for moving were most commonly cited. Understanding

the characteristics of migrants to rural areas, their motivations for the move and the residential consequences is important in evaluating changing patterns of population distribution and the dynamic relationship between urban and rural areas.

Bernadette Barton, Morehead State University – **Session 26**

QUEER STRIPPERS: THE QUESTION OF SEXUAL ORIENTATION AMONG EXOTIC DANCERS

"They are all lesbians anyway," is one of the stereotypes with which mainstream society labels sex workers. In this field study of exotic dancers, I research what dancers feel about this stereotype as well as the shapes they perceive queer desire assuming in the sex industry. In this paper, I highlight a fascinating tension between the desire that sex workers perform for men, in contrast to the queer desire they feel for other women. Using the framework of ethnographic description, I explore this tension through the description and analysis of the sexual identities of sex workers. Specifically, I examine the sex industry as a site which encourages women to expand notions of their own sexuality. This is partly because the environments of strip bars and peep shows offer women easy access to other women, invite them to break taboos and simultaneously teach them disdain for men.

Lydia Lorraine Bean, Fred M. Shelley, Southwest Texas State University – **Session 11**

ENVIRONMENTAL RISK AND VULNERABILITY ALONG THE MEXICO-TEXAS BORDERLANDS: A PRELIMINARY ANALYSIS

In recent years, globalization of the economy, unprecedented increases in free trade, and technological advances in communication and transportation have dramatically altered the concept of a political boundary. These changes have induced political geographers to pay particular attention to the dynamics of boundaries, even though the boundary region itself may appear static on a map. The purpose of this paper is to develop and present an initial conceptual framework by which researchers can examine and evaluate the effects of political boundaries in risk and vulnerability in nearby communities and among particular sub-populations living in border areas. Examples from the border region near the boundary between Texas and Mexico are used to illustrate how this conceptual framework can be developed and operationalized.

Michael Paul Begin, University of Kentucky – **Session 6**

PORTRAIT OF A GEOGRAPHER AND A MYSTIC: A BIOGRAPHY OF DR. JOHN DEE

Dr. John Dee was a sixteenth-century English scholar/mathematician who was a familiar name in the royal court and contributed a great deal toward the development of England's early navigational technologies and hydrographic surveys of the New World. Amongst his primary pursuits was the establishment of a natural philosophy that would reconcile God's creation of an organic Earth with complex mathematical principles and astrological truths. In his researches, Dee achieved infamy from his dealings with certain "specialists" who claimed to possess uncanny talents as spirit mediums. He employed these individuals to assist him in his alchemical research and to converse with otherworldly beings who primarily identified themselves as angels, hoping to obtain an awareness of cosmic truths. His involvement with the occult sciences and his rejection of prominent university posts identified him as an academic renegade who blurred not only disciplinary boundaries, but also the distinctions between magic, philosophy and mathematics. This paper is presented as a portrait of his career as a geographer, mystic, mathematician and philosopher and speculates upon the legitimacy of his epistemologies.

Thomas L. Bell, Margaret M. Gripshover, University of Tennessee – Session 32
DON'T CRY FOR ME PLEASANT VALLEY: A SLICE OF THE ONION-GROWING LANDSCAPE IN EASTERN IOWA

In 1910, the village of Pleasant Valley, Iowa, had over 1,000 acres of fertile bottomland along the Mississippi River devoted to onion production. Today, the sole remaining grower has planted just enough onions to keep the heirloom seed from becoming extinct. What factors account for the devolution of this once specialized landscape into a general farming area interspersed with higher intensity land uses? Historical accounts would have us believe that a devastating blight afflicting the onions that had been continuously planted for decades on the same land parcels was the culprit. But, the blight was defeated by the 1930s and was followed by record yields. The crucial role of labor in this intensive endeavor has been overlooked. This is especially so for Hispanic laborers who toiled under the fierce summer sun to harvest onions for pennies per bushel. Despite the local invention of mechanized laborsaving devices in many aspects of the onion production process, shortages of Hispanic laborers contributed to the demise of the onion-growing complex after the 1950s.

Jennifer Belknap, Jacksonville State University – Session 16
CULTURAL SURVIVAL AS INDICATED BY THE RETENTION OF PLACE NAMES

When a culture is invaded by another, the dominant group tends to assert its power by projecting new place names on the geographic landscape. The purpose of this research is to assess the degree of cultural loss experienced by various Native American Groups by looking at the survival of Native place names versus the intrusion of the invasive culture's place names. Place names are given to a variety of physical and cultural geographic features. In this study, which compares the percentages of place names originating from various cultures, it is important that the number of the features chosen for evaluation has remained constant over time. This study compares two different Native American regions, one occupied by the Muskogean (Creek) Nation of the Southeast and the other by the Navajo Nation of the Southwest. Both of these groups experienced a long period of contact with Europeans before finally being overwhelmed. The data showed that although the Muskogeans were removed, a high percentage of waterways in Alabama still have Muskogean names. Also, there were more English waterway names than Spanish. On the Navajo Reservation, a high percentage of creeks with Navajo and Spanish names were found.

Keshav Bhattarai, University of Kentucky – Session 17
TEMPORAL DYNAMICS OF LAND USE, POPULATION AND ENVIRONMENTAL RELATIONSHIPS IN THE MORANG AND JHAPA DISTRICTS OF NEPAL'S TARAI REGION

This paper uses Landsat images (MSS 1981, and TM 1991 & 1997) and government published records on land use and population growth to analyze land use and land cover changes of the Morang and Jhapa districts of the Eastern Tarai region of Nepal. The study area constitutes 2.24% of the land surface and 6.86% of the total population of Nepal. These districts have been experiencing rapid land cover changes over the last 20-years with an average annual deforestation rate of 0.5%, and quality of forests is decreasing since the 1990s as over 100,000 Bhutanese people took political asylum in these districts. These densely populated districts have 400 people per square kilometer with an average household land ownership <1.6 ha scattered in 2-3 parcels. Enormous pressures are exerted on the forests both for household livelihood and for commercial timber presenting an extreme case for the study of population-environment interactions. To present, a few attempts have been made to study land use dynamics of these districts at the national levels. The national levels research portrays cursory information of land use dynamics only at the regional levels. Lack of district level detailed land use information has led to the lack luster performances of nine 5-year periodic plans that have been modeled in every 5-year period

since 1956. Based on the findings, the paper suggests theoretical and methodological approaches for sustainable land use practices that might have policy implications in the land management in Nepal.

Ling Bian, State University of New York at Buffalo – **Session 24**

AN INDIVIDUAL-BASED AND SPATIALLY EXPLICIT EPIDEMIOLOGICAL MODEL OF INFECTIOUS DISEASES

This paper presents a conceptual framework for individual-based and spatially explicit modeling of the epidemiology of infectious diseases. The framework supports the basic principles of epidemiology but challenges the traditional modeling approach. In particular, this paper discusses four aspects of the model regarding the choice of: (1) population segments or unique individuals as the modeling unit, (2) continuous process or discrete events to represent the disease development through time, (3) traveling wave or network dispersion to represent the disease transmission in space, and (4) within- and between-group interactions to link nighttime and daytime populations. Based on these conceptual discussions, an epidemic of influenza is simulated in order to illustrate the application of the proposed individual-based spatial model.

John D. Bies, University of Memphis – **Session 5**

SUSTAINING DEMOCRACY IN LATIN AMERICA

Perhaps no other region of the world has had as tumultuous experience with democratization as Latin America. Even now, it is difficult to say which country's form of democracy will succeed or fail. It is the intent of this study to identify those variables that are significant in promoting (or detracting) democratic sustainability in Latin America. The research is designed to answer three questions: (1) Are there any variables that are significantly correlated with different levels of democratization?, (2) Is there a significant relationship or association between specific variables and democratization level? And (3) Is there a specific direction of causation and predictability between these variables and democratic sustainability? Democratization measures were derived from the Freedom House ratings for individual freedom. Independent variables tested were: ethnic fragmentation, country affluence, economic growth, unemployment, and level of militarization.

Stephen S. Birdsall, University of North Carolina at Chapel Hill – **Session 29**

LEARNING TO THINK FLEXIBLY ABOUT PLACE

Theoretical constructions learned intellectually are often taken to be conclusive explanations of how things are. In fact, theories are only alternative ways of organizing ideas and information. Students especially are vulnerable to believing that a particular theory is a proto-truth rather than an alternative explanation. Meinig's ten alternative perspectives for seeing landscapes were used successfully as a pedagogical rubric to teach students experientially how to observe and think more flexibly about place and to see more of what is present around them in the world.

Mark Bonta, Delta State University – **Session 22**

TOWARD A CULTURAL GEOGRAPHY OF COMPLEX SPACES

This paper examines Deleuze and Guattari's *A Thousand Plateaus* with a view toward theorizing "complex spaces." It considers how these spaces are constituted, what they mean for cultural geography, and how they can be investigated. Evidence for complex cultural spaces comes first from Deleuze and Guattari's identification of four historical "signifying regimes," and their material existence in mixture on the earth; second, each signifying regime's space—including "smooth space," "striated space," and "holey space"—is presented as a starting point to identifying distinct local/global metastable cultural spaces that can be manifest at any place and time on the earth. The general characterization of these spaces is enriched by this author's

blurring of the natural/cultural dichotomy through the Deleuzoguattarian concept of rhizomes. A brief example of this author's encounter with complex spaces in Honduras is used to illustrate their material existence, and to assert that ethnography, using participant-observer methodology, is adequate to reveal and describe them.

Keith W. Bosak, University of Georgia – **Session 1**

NEPAL'S CHANGING SEX RATIOS: WHAT ARE THE IMPLICATIONS FOR DEVELOPMENT?

Sex ratios are the most basic gender-specific demographic variable and are important in the context of development as an indicator of more than just the relative sizes of males to females in the population. Sex ratios indicate migration patterns, differentials in access to healthcare, differentials in mobility, infanticide, neglect and life expectancy. The goal of this research is to illustrate through the use of GIS and local knowledge, the processes at work behind the patterns of variation in sex ratios through different age cohorts within Nepal and to present some of the development implications, which result from these processes.

Dawn S. Bowen, Mary Washington College – **Session 19**

SECOND STREET: THE HISTORIC HEART OF RICHMOND, VIRGINIA'S, AFRICAN-AMERICAN COMMUNITY

Second Street, or "the Deuce," in Richmond's historic Jackson Ward neighborhood, was the focal point of African-American commerce in the early part of the twentieth century. Enterprises of all types clustered along this street, just north of Broad Street, Richmond's main thoroughfare and the center of white business activity. While scholars have argued that there was, in fact, never a separate black economy, it is clear that this street was the hub of African-American economic and social life in Richmond. Professional and personal services, banks, hotels, restaurants and general merchandise stores were established along Second Street to meet the needs of Richmond's black population. Denied access to the white-owned theatres and clubs, blacks also created a unique entertainment district along "the Deuce," which was home to numerous social clubs, restaurants, and theatres. This paper explores the growth of Second Street during the first half of the 20th century and seeks to understand the reasons behind its subsequent decline in the latter half of the 20th century.

Stanley D. Brunn, University of Kentucky – **Session 11**

STAMPS AS ICONOGRAPHY: THE FIRST ISSUE OF NEW EUROPEAN AND CENTRAL ASIAN STATES

Stamps are examples of state iconography, much like flags and official. They are products or "windows" of the state that illustrate how a government wishes to be seen by its own citizens and those beyond its borders. The themes and topics of the first issues are among the most important symbolic elements. The initial stamp issues of nineteen new East European and Central Asian states illustrate the importance of maps, flags, coats of arms, and prominent religious and political symbols; overt propaganda and ideology are lacking. Key Words: stamp iconography, images, national identity, visualization.

Rick L. Bunch, Southern Illinois University at Edwardsville – **Session 24**

SLOPE-ASPECT VISUALIZATION

The purpose of this paper is to design a slope-aspect coloration scheme that enhances the visualization of the underlying physical landscape that is oftentimes generated from a digital elevation model (DEM) in a Geographic Information Systems (GIS). Current methods commonly found in GIS do not take advantage of the natural human color processing tendencies during the assignment of slope-aspect azimuth classes. This study follows Moellering and Kimerling's

(1990) application of the opponent process theory for major slope-aspect azimuth class assignments (315, 225, 135, and 45 degrees) along with two modifications. These modifications include the use of a perceptual color system coupled with the assignment of colors that are thought to be “truly unique” for major slope-aspect azimuth classes. The results show easily distinguishable slope-aspect classes in conjunction with a relief shade appearance of the underlying physical landscape.

Perry L. Carter, Texas Tech University – **Session 26**

SEDUCTION IN BLACK AND WHITE: UNDECIDABLES AND MOBILE IDENTITIES IN NELLA LARSEN'S PASSING

In April of 1929 Nella Larsen's second novel, “Passing”, appeared in print. The novel is a psychological drama centering around two fair-skin Black women. One, Clare Kendry, passes as the wife of a wealthy White bigot while the other, Irene Redfield, is a member of the Black bourgeoisie of renaissance Harlem. Clare is an undecidable, neither White nor Black, a fluid subject straddling the boundary of race in early 20th century America – a mulatto. Clare shakes Irene's world and threatens her identity as a Black woman of a particular class position. Clare and Irene are alter egos of each other as well as facets of their creator – Nella Larsen. “Passing” is what Audre Lorde would term a biomythography, the life of an author/subject expressed through a collective reconstruction of the past. “Passing” reflects the life of its author. The novel interweaves various aspects of race, sexuality, and spatiality. To pass is to seduce, to ingratiate oneself into certain forbidden spaces by presenting oneself falsely. In this way passing is not just a transgression of racial boundaries, it is also necessarily a transgression of spatial boundaries. In Larsen's novel Clare is able to pass as White merely by moving from and leaving behind a Black space and a Black identity, and moving into a White space and an identity as a White person. This paper examines the mobility of identities across racial geographies. In the process it reveals how females are positioned as boundary markers of both race and class.

Jayajit Chakraborty, M. Martin Bosman, University of South Florida – **Session 33**

THE GEOGRAPHY OF HOME COMPUTER OWNERSHIP IN THE SOUTHEAST: AN ANALYSIS OF RACIAL AND ECONOMIC INEQUALITIES

Although empirical studies on the ‘digital divide’ have examined differences in computer access at the national scale, statewide variations in personal computer (PC) ownership have not been assessed at the regional scale. The objective of this article is to examine the geographic distribution and extent of the racial and economic divides in home PC ownership across ten states of the U.S. Southeast. Recent data from the Census Bureau's Current Population Survey are used to compare the proportion of households owning a PC in each state and the region as a whole. Our results indicate that White households are significantly more likely to own a PC than African American households in all ten states. The extent of this racial divide is particularly large in rural states such as Alabama and Mississippi, where African American ownership rates are smaller than other states. A significant difference in PC ownership also exists in all states between the highest and lowest income households, particularly in Tennessee and Georgia. Our analyses emphasize the importance of a state-level approach for understanding the nature of the digital divide.

Ngai Weng Chan, Universiti Sains Malaysia, **Hsiang-te Kung**, **Pin-Shuo Liu**, University of Memphis – **Session 4**

SQUATTING AND PERSISTENT FLOOD PLAIN OCCUPATION IN MALAYSIA

Malaysia has evolved from an agrarian-based economy in the mid-1950s to become one of the most rapidly industrialising tiger economies of Asia. Yet, problems such as poverty, income inequity, landlessness and squatting are unresolved. Rural-urban migration since the 1970s and international migration since the 1980s have exacerbated these problems. The major cities no longer have

sufficient housing to cater for the ever increasing number of migrants. Recent estimates of put the foreign immigrant population (mostly Indonesians, Thais and Filipinos) at 1.7 million. With inadequate housing, the majority of the migrants, both local and foreign, end up living as squatters in urban flood plains. Squatter settlements have mushroomed all over the major cities, especially in hazardous flood zones where land is still available. Squatting, a structural force, is responsible for a large population occupying the flood-prone zones. As the squatters are also largely poor, they become most vulnerable to flood hazards. In recent years, many flood disasters have occurred, confirming the dangerous nature of flood plain occupancy amongst the squatting community. Substantial loss of life and damage to property and infra-structure have occurred and flood plain inhabitants are trapped in a circle of poverty, landlessness, and low occupational mobility.

Jinmu Choi, University of Georgia – **Session 17**

ACCURACY IMPROVEMENT IN SUPERVISED FUZZY CLASSIFICATION

In remotely sensed images, a pixel may contain mixed land use/covers because of spatial resolution and spectral characteristics. Fuzzy classification can be used to classify land use/cover because the fuzzy theory can help interpret a mixed pixel. This paper describes a way to improve the accuracy of land use/cover classification in supervised fuzzy classification. Supervised fuzzy classification is performed on Landsat ETM plus data. ISODATA classification is used to derive fuzzy initial membership only. Conditional overlay operation is used to reduce the confusions which occur when two or more different land use/cover categories have very similar spectral characteristics. Modal filtering is used to reduce the boundary errors that occur at class boundaries due to the occurrence of spectral mixing within a pixel. Both overlay operation and modal filtering improve the accuracy of classified data. The result of supervised fuzzy classification is compared to that of a conventional supervised classification using maximum likelihood classifier. Supervised fuzzy classification may be better in complex area such as residential areas or areas with water boundary although the overall accuracy and Kappa index of the classification are similar to those of a conventional maximum likelihood supervised classification.

Thomas W. Crawford, Gettysburg College – **Session 24**

SPATIAL COMPLEXITY, PATTERN METRICS, AND LAND USE

The thesis of this research is that we can describe the spatial complexities of land use by examining the complexities of scaling dynamics of land use patterns. To do so requires defining what is meant by the spatial complexity, or complexities, of land use. How do we define complexity? Different definitions of complexity are reviewed, and one definition, algorithmic complexity, is adopted here. Algorithmic complexity refers to the minimum amount of information required to describe and object or system. The methodology used to measure spatial complexity requires examining the behavior of pattern metrics for defined regions where scale extent is altered systematically over a defined range of extent sizes. Scaling behaviors of pattern metrics are observed and used as signatures that describe and differentiate land use complexities. The focus is on the complexities of the scale dynamics themselves. Scaling surfaces are introduced as a method of visualizing scaling complexities and are interpreted as state spaces (phase spaces) of dynamical systems. The scaling surfaces are converted to triangulated irregular networks (TINs) and the algorithmic complexity values of the derived TINs, the sum of the number of nodes and triangles, are used to quantify levels of complexity. The ideas of this research are placed within the broader context of complexity theory.

Mary E. Curran, University of Kentucky – **Session 20**

MY OLD KENTUCKY HOME: AN ACTIVIST MAP

“Rurality” and “place” are not territories or things readily available for academic analysis. Rather, both are the result of complex webs of negotiations in place. As such, instead of

imposing academic definitions of rurality and place upon our research subjects, we should adjust our methods to determine how those who are invested in creating rurality and place, perceive them. In this paper, through a discourse analysis of comments made by activists at five public hearings conducted by the state Cabinet of Natural Resources and Environmental Protection to elicit responses to proposed regulation of industrial hog farms, I develop an activist map of rurality and Kentucky. This method has two advantages: first, it does not impose academic definitions upon activists; and second, it illustrates the relationships between those characteristics of rurality and place that activists wish to preserve and those characteristics that they see as threatened by industrial farming practices and other existing social arrangements.

Kendrick J. Curtis, University of Tennessee – **Session 33**

BIRMINGHAM'S ECONOMIC TRANSITION

This paper investigates the transition which Birmingham, Alabama, has undergone in the past few decades. The iron and steel industry is still a prominent sector of the area's economy, yet today the economic focus has shifted from that which served as the catalyst for the area's establishment and growth. Though an important aspect of the economy, contributing significantly to the economic stability of the area, the iron and steel industry no longer provides the direct livelihood for the majority of the population. Presently, the service sector possesses the lion's share of Birmingham's economic structure. Leading sectors, in terms of employment, are health care and social services, retail trade, manufacturing, and finance and insurance.

Bruce E. Davis, Eastern Kentucky University – **Session 30**

TEACHING GEOGRAPHY IN THE 21ST CENTURY

The 21st century opens an era of profound global transformation, particularly for education, and geographic education is rapidly evolving. This PowerPoint presentation discusses four basic themes to demonstrate contemporary pedagogical dynamics: 1) nature of social and technologic change, 2) changes underway in education, 3) the changing character of geographic education, and 4) examples of a few changes in geography, with a brief look into the near future. Technology, student demographics, changing attitudes, shifting professional paradigms, social evolution, and other factors are changing the definition of higher education. A new student-centered "learning paradigm" is replacing the old instructor-oriented perspectives. In many ways, geographic education has been progressive, but it faces significant changes, as well. Technology will continue to play an important role, and methodologies, expectations, and fundamental paradigms are shifting. A brief look at a few changes in progress demonstrates the challenges and opportunities for geographic education in the 21st century.

Keith G. Debbage, University of North Carolina at Greensboro – **Session 3**

INTERNATIONAL TOURISM AND AIRPORT OPERATIONS: IT'S THE LACK OF LANDING SLOTS, STUPID!

The U.S. – E.U. market accounts for approximately 25 percent of all international tourist arrivals worldwide, and is arguably the busiest international tourist market in the world. This paper argues that landing slot policy and the manner in which airport capacity is allocated between airlines across the north Atlantic is likely to underpin the future geographic structure of the tourist industry. By analyzing the historical evolution of slot policy, this paper attempts to enhance the extant literature on how government authorities allocate scarce airport resources. The paper concludes by arguing that various slot reform proposals need to be adopted to make airports more 'elastic' when managing origin-destination tourist flows.

Vincent Del Casino, California State University at Long Beach – **Session 25**

SOCIAL PROTEST, SPATIAL PRAXIS, AND RADICAL GEOGRAPHY IN THE TEACHING OF WORLD HISTORY

This paper examines how to synthetically integrate world history and radical geography within a social studies framework for K-12 students. New approaches to world history, which move away from teaching history in “isolation” to teaching world history as “global history,” mimics trends in world regional geography that focus on global interconnectivity and themes of global change over regions in isolation. The overlap in approach between “global history” and “global geography” presents an opportunity for teachers to explore the role of “spatial praxis” in the development of place-based social systems in cross-cultural and cross-temporal context. Specifically, the study of social protest makes present the importance of spatial praxis for an ever-changing world historical geography. The paper explores the importance of social protest and spatial praxis by first examining the development of the world history and geography curriculum in California. Next, readers are provided with a theorization of space that builds a conceptual base for studying social protest as spatial phenomena. In the final section, we examine the spatial politics of Mahatma Gandhi for how one might go about teaching radical geography as part of a “globalized” world history and geography curriculum.

Dydia DeLyser, Louisiana State University – **Session 20**

SOME SMALL THINGS ABOUT SOME SMALL PLACES

Taking clues from scholars such as Walter Benjamin, Clifford Geertz, James Scott, and David Silverman, this paper explores the importance to cultural/historical geographers what Silverman has called the “micro order” -- the small. I argue that by searching for and then listening to the often small voices of everyday people, new stories of popular landscapes emerge. I take as an example the Southern California landscapes inspired by the 1884 novel *Ramona*. Dominant interpretations of these places document a boosterist propaganda campaign that lured tourists and homeseekers to fictional places that the tourists were presumably unable to distinguish from “real” ones. But such a view occludes the voices of those who actually visited the Ramona-related places. Through extensive and detailed archival research, this paper explores the small traces that such people have left behind, and demonstrates that, whether real or fake, these places held meaning for those who visited.

Bob Douglas, Gustavus Adolphus College – **Session 29**

THE ENGLISH LANDSCAPE GARDEN IN THE BLUEGRASS: PAST AND PRESENT

A number of features associated with thoroughbred horse farms make the Bluegrass region of Kentucky one of the most distinctive landscapes in America. Such features as stone fences and neoplantation-like African-American hamlets have previously been studied. A broader cultural landscape feature which has received less attention is the park-like appearance of the Bluegrass. Raitz and Van Dommelen have discussed how certain elements of English landscape design are both symbolically and literally produced in this region. The purpose of this paper is to extend their study in three ways: first, to discuss the roots of the English landscape garden; second, to provide three examples of this landscape creation in Great Britain, namely, the estates of Rousham, England; Dinefwr, Wales; and Muckross, Ireland; and, third, to show examples of this landscape in the contemporary Bluegrass horse farms of Woodburn, Castleton, Elmendorf, and Gainesway.

Owen J. Dwyer, Indiana University – Purdue University – **Session 10**

SYMBOLIC ACCRETION AND THE PRODUCTION OF MEMORIAL LANDSCAPES

Controversy has erupted in Selma, Alabama, over recent efforts to commemorate the career of the Nathan Bedford Forrest, a Confederate cavalry officer and founder of the Ku Klux Klan. More generally, the controversy in Selma is emblematic of an enduring regional pattern in which

contests over the future are couched in terms of the past. The current conflict pits memorial activists associated with the Civil Rights Movement against neo-Confederates. Interpreted in the context of Selma's increasing promotion of Civil Rights heritage and the recent election of the city's first African American mayor, the Forrest affair highlights the utility of the concept of symbolic accretion for understanding the complexities of commemorating antagonistic histories in the same place. Originally put forward by Foote, symbolic accretion describes the appending of memorial elements onto already existing memorials. The situation in Selma suggests a refinement of the concept to include two different types of symbolic accretion, allied and antithetical. More generally, the act of memorializing itself may be understood as a process of accretion in which heretofore anonymous places are formally commemorated via the grafting on of memorial elements.

Jamey Essex, Syracuse University – **Session 1**

AGRICULTURAL OVERPRODUCTION, SOIL DEGRADATION, AND FEDERAL TOBACCO POLICY, 1880-1945

In the late nineteenth and early twentieth centuries, Southern tobacco farmers faced slumping tobacco prices and extreme economic hardship. Though farmers identified tobacco companies' market practices as the cause of low prices, industry leaders and government reformers blamed the overproduction of tobacco, which glutted markets and drove prices down. Closely linked to overproduction in the rhetoric and policies of reformers were the severe environmental consequences of poor agronomic practices associated with Southern staple agriculture, including tobacco. In this paper I examine the relationships between the overproduction thesis, Southern soil degradation, and federal tobacco policy during the Progressive Era and the New Deal. The federal government's tobacco policies concentrated on correcting overproduction and degradation through scientific farming, crop diversification, market regulation, and production control incentives. These policies posited government intervention as the only reliable cure for agrarian ills, though they did not address the more complex causes of Southern tobacco farmers' economic and environmental distress, which lay in tobacco's changing political economy, the rapid spread of sharecropping and tenancy, and the failure of agrarian reform to adequately address these issues. While federal policy did reverse some soil degradation in Southern tobacco fields, social and economic dislocation of poorer farmers also resulted.

Carlo Frate, University of North Carolina at Greensboro – **Session 16**

A COMPARATIVE ANALYSIS OF PUBLIC TRANSIT RIDERSHIP AND JOURNEY-TO-WORK IN THE FIFTY LARGEST MSAs AND CMSAs, 1990

This paper studies the fifty largest American MSAs and CMSAs to test the hypothesis that MSAs with greater population density have higher transit ridership rates. The implications for low-density MSAs may be profound since transit (as it exists in most areas) may not be a feasible alternative for most commuters. This paper attempts to illustrate the importance of pursuing regional transportation policies that consider metropolitan trends, because a growing proportion of economic opportunity is available beyond the central cities. The Spearman correlation coefficient for the relationship between population density and transit use was found to be 0.55. This is significant at the 1% level, suggesting a strong degree of association between transit ridership and population density.

Owen J. Furuseth, University of North Carolina at Charlotte – **Session 15**

CONSTRUCTING RURALNESS IN THE CITY: THE CHARLOTTE REGIONAL FARMERS MARKET

The Charlotte urban area is in the midst of rapid growth and economic transformation. In this dynamic setting, the Charlotte Regional Farmers Market (CRFM) has evolved and developed into one of the largest farmers markets in the region. The success of the market is focused around

construction of a rural identity. The CRFM merges public images and representation of farming and rural Southern foodways and lifestyle with food quality and safety issues. This paper examines the conceptualization of ruralness and the interpretation of the meaning of ruralness by market visitors. Finally, the future direction of the CRFM is discussed.

Carolyn Gallaher, American University – **Session 25**

TEACHING GEOGRAPHY CRITICALLY IN AN INTERNATIONAL STUDIES PROGRAM

In this paper, I explore the approach I use to teach geography in an International Studies Program. The paper begins by outlining my specific context. I teach geography in an international studies program at American University, a private university located in Washington DC. Students are overwhelmingly from privileged backgrounds and many have significant travel experience before they attend AU. The University also has a large percentage of international students—13 percent—and ranks among the top five universities in terms of its percentage of international students. The paper then examines some of the challenges that this context poses for my ability to demonstrate geography's uniqueness as a discipline. In particular I focus on how traditional methods for attracting students to the discipline are not applicable in the AU context. The paper then outlines the approach I use to 'sell' geography as distinct and important in an international studies program. I argue that what geography can offer international studies is a framework for analyzing how spatially uneven processes of capital accumulation and social stratification (along lines of class, race, gender, ethnicity, sexuality, etc.) inform international affairs. In my courses at AU I focus on three theoretical models in particular—David Harvey's idea of the 'spatial fix', a body of work known broadly as critical geopolitics, and poststructural approaches to identity/space formations. The paper concludes by noting the important role that these theories play in foregrounding a place for social justice in the discipline, and in so doing bringing the discipline to the forefront of critical social science.

Douglas W. Gamble, **Michael A. Crump**, University of North Carolina at Wilmington, **Darren Parnell**, University of South Carolina, **Grady Dixon**, University of Georgia – **Session 27**

LATITUDINAL VARIATION OF RAINFALL ON SAN SALVADOR, BAHAMAS

The purpose of this research is to investigate the spatial variability, particularly latitudinal variation, in precipitation on San Salvador, a small carbonate island in the Bahamas with little topographic relief. Three rain gages were placed along a North-South transect on San Salvador and collected rainfall data from January-May 2001. Analysis of storm event descriptive statistics indicates subtle differences in storm descriptive statistics by location. The greatest amount of rain fell on the central portion of San Salvador, the most intense storms occurred on the south end, and the longest storms occurred on the north end. Statistical tests indicated that only the difference in storm duration was statistically significant by location. In regard to spatial coverage, rain usually covers the entire island, or a specific locale (one of the rain gages). Rarely will the island be partially covered and if it is partially covered, it is only the northern or southern portion of the island will experience rainfall. The synoptic classification of storm events indicates that the most frequent type of storm to cause rain during the study period was Cold Front storms. Different storm types may explain some of the spatial variation, particularly the difference between Cold Front/Stationary Front complete coverage and Easterly Flow local/partial coverage. The results of this study should be applied carefully in future research due to the near record rainfalls in August and May.

Sunita George, Alabama State University, **Raymond Greene**, Western Illinois University – **Session 33**

CYBERCITIES IN THE PERIPHERY

In recent years much research has looked at the reflexive impact of globalized economies and

information technology on the growth and development of cities. This research has been informed by studies from and about major urban settlements at the core of Castells' "informational economy"; such hubs as San Jose, Seattle and London. This paper defines cybercities and contrasts examples in the periphery– Cyberjaya in Malaysia, Cyberabad in India and Media City in Dubai, U.A.E., with older examples in the core. The new cities differ most obviously from their counterparts in the core in that they are the creations of governments intent on reaping the new riches of information age economies.

Mary Gilmartin, Nottingham Trent University – **Session 25**

LEARNING FOR SUSTAINABILITY IN THE NEW SOUTH AFRICA

As the new South Africa struggles to address the legacies of apartheid, the education system has been targeted for specific change. During apartheid, education was racially stratified, with the best resources and facilities reserved for white schoolchildren. Now, after apartheid, the emphasis is on equality for all students regardless of race. This is not happening in practice. Black students and teachers, particularly in homeland and township schools, continue to be discriminated against. This paper outlines the form of continued discrimination. Drawing on the work of the Learning for Sustainability project in the new South Africa, it suggests an alternative vision of educational change that focuses on local rather than national transformation.

Greg Goldey, Morehead State University, **Ron Mitchelson**, East Carolina University – **Session 5**
MORE FACTS ON THE GROUND: ISRAELI HIGHWAY CONSTRUCTION AND SETTLEMENT ACCESSIBILITY WITHIN THE WEST BANK

Palestine is no ordinary bit of geography. The region is saturated in religious, historical, and cultural significance. American geographers have had surprisingly little to say about the issue of long-term Israeli occupation. This paper provides narrative, graphic and quantitative description and analysis of the road construction program carried out by the Israelis within the occupied West Bank between 1995 and 1997. In several ways these investments are quite tangible and provide very visible Israeli facts on West Bank ground. However, the changes in accessibility that these investments provide are far less visible. Thus, the analysis of altered accessibility is quite revealing of the possible intent of Israeli development. Given Tel Aviv's continued suburbanization, spurred by future completion of the Trans Israel Highway, the recent round of network changes must be viewed as economically strategic and they will foster substantial suburban development west of Route 60. Time will continue to blur the position of the Green Line as Israel's auto dependent suburban landscapes camouflage it from sight. Israel threatens to unilaterally draw its own line of separation with the Arabs and it is an educated guess that it will involve the transfer of at least 25 percent of the occupied territory.

William Graves, University of North Carolina at Charlotte – **Session 1**

PAYING FOR THE NEW ECONOMY: THE GEOGRAPHY OF EQUITY FINANCE IN NORTH CAROLINA

The availability of corporate finance is of critical importance to local and regional development. As firms increasingly rely upon intangible assets such as human capital, innovative capacity and brand equity, they are less able to tap traditional sources of capital such as bank or debt financing. Concurrent with the loss of traditional sources of finance, shrinking product cycles and the need to compete in global markets have increased the capital needs of corporations. Equity finance (the offering of ownership shares through public stock markets) is viewed as the most flexible and highest volume method of corporate finance and is becoming an increasingly necessary strategy in a global market. This paper will examine the market value of North Carolina firms over time to assess the degree of participation of the state's firms in global equity markets. It was found that equity investment in North Carolina is highly concentrated both spatially (40% in Charlotte) and sectorally (56% in FIRE). Relatively small shares of equity are held by firms in the

manufacturing (10% of the state total) and technology industries (9% of the state total). The growing degree of concentration of equity investment in the state suggests a lack of diversity in the state's economy and may suggest increased susceptibility to economic downturn.

Kelly D. Gregg, Jacksonville State University – **Session 30**

USING A GEOGRAPHIC PERSPECTIVE TO INTERPRET A CIVIL WAR ERA IRON FURNACE

With the onset of War in 1861, the South found it impossible to import adequate supplies of iron. As a result, there was an enormous incentive to create a local iron industry. One of these developments was Janney Furnace in northeastern Alabama. This complex was destroyed by a cavalry raid in 1864 and never rebuilt. In 1996, Janney was “rediscovered” by the Department of Geography and Anthropology at Jacksonville State University. As a result of work undertaken by this department, the County and the State have become interested in the site as a historical park. Park development requires an interpretive plan, which was created using a geographic perspective. A variety of geographic techniques were employed to solve questions related to park development. Resource catchment models were used to account for the general situation of the furnace and to specifically predict the locations where needed raw materials were extracted. Excavation and analysis of artifacts provided information on furnace use. Soil description suggested explanations for the post-War abandonment of the site.

Raymond Greene, Western Illinois University – **Session 19**

A MULTIPLE ASSIGNMENT 2-HUB PROBLEM WITH MULTIPLE OBJECTIVES

O'Kelly's (1998) formulation of the multi-hub, multiple assignment problem for air transportation creates one major and p minor hubs. This is the basis of a multiple objective extension in which solutions for two hubs in the system were undertaken. As discovered for the single hub model (Greene 2000), the efficient set for 3 objectives is larger than the solution set for individual single objective problems. Stable combinations of objective functions also exist, where minor variations in the importance attached to an objective does not alter the choice of hub locations.

Jerry A. Griffith, Thomas R. Loveland, USGS-EROS Data Center, **Terry L. Sohl**, Raytheon ITSS – **Session 9**

MONITORING LANDCOVER CHANGE ACROSS THE NATION: AN OVERVIEW OF THE US GEOLOGICAL SURVEY'S LAND COVER TRENDS PROGRAM

Information on the rates, driving forces, and consequences of land use and land cover change is important in studies addressing issues ranging from the health of aquatic resources to climate change. LULCC occurs at all scales and changes at local scales can have dramatic, cumulative impacts at broader scales. Consequently, LULCC is not just of concern at local and regional scales, but globally as well. Unfortunately, there is a paucity of information on LULC except at relatively local levels. This four-year research project between the USGS and the US EPA has a goal to document the types, geographic distributions, and rates of land cover change on a region-by-region basis over the past 30-years for the conterminous US, and to determine some of the key drivers and consequences of the changes. The purpose of this paper is to: (1) provide an overview of the program and its methodology; (2) discuss initial land cover change results for three pilot ecoregions from 1972 to 1992; and (3) report results on trends in landscape pattern metrics in the Middle Atlantic Coastal Plain Ecoregion.

John R. Grimes, Louisiana State University – **Session 32**

THE DISCIPLINING OF AGRICULTURAL LABOR IN THE FLORIDA SUGAR INDUSTRY

This paper addresses the various methods used by the Florida sugar industry to discipline its agricultural field labor. I examine the use of the H2 visa program that regulated the recruitment

and temporary employment of agricultural workers and the later replacement of this human labor by machines. This paper stresses Florida's unique agrarian trajectory in sugar production. For example, in Louisiana, the mechanical sugar cane harvester was first used in 1935 and soon became widely adopted. In Florida the use of mechanical harvesters is much more recent. Also examined is how labor requirements are shaped by the muck soils of the agricultural region and the specific characteristics of the cane plant.

Mary Bee Hall-Brown, Roy Stine, University of North Carolina at Greensboro, **Warner J Phelps**, Syngenta Crop Protection, Inc. – **Session 24**

GIS EVALUATION FOR A FIELD DISSIPATION STUDY IN NORTH DAKOTA, SOUTH DAKOTA, MINNESOTA AND MONTANA (THE NORTHERN WHEAT BELT)

Syngenta Crop Protection was granted a conditional registration for a pre-emergent herbicide product by the Environmental Protection Agency. The condition required that Syngenta submit plans for two in-situ dissipation studies that would address environmental concerns related to the product. The herbicide would be used on spring and durum wheat grown in Minnesota, Montana, North Dakota and South Dakota (The Northern Wheat Belt). Field dissipation studies are expensive and time consuming. The objective of this research was to determine whether the possibility of adequately representing the entire spring and durum crop region with one study. For one site to be selected as representative of the region, the following steps were taken to identify characteristics of the Northern Wheat Belt; first the wheat growing counties were located, second the spatial extent of the spring and durum wheat crops were mapped and third the counties were analyzed for cropping practices, soil characteristics, and climate by combining county level agricultural data with state level soil and weather data. Finally a county was selected as a worst-case scenario, if the herbicide proved to be environmentally safe in this location it could be used throughout the region with no adverse affects.

Joanne N. Halls, Justin Arnette, University of North Carolina at Wilmington – **Session P2**
HURRICANE IMPACT ON THE EAST AND GULF COASTS OF THE UNITED STATES (1950-1999)

This project examined the impact to coastal counties from hurricanes and a comparison with percent population growth. It was hypothesized that damage has increased with population growth, and that the frequency of hurricanes has increased through the decades. These hypotheses were tested through the creation of three databases. The first database was a set of points for each hurricane, each of which represents the location of the eye of the hurricane at six-hour intervals. The second database was county-level population data from 1950 to 1999. The third was the estimate of damage from each hurricane. These databases were integrated to create one database where rankings of population change, hurricane damage and hurricane frequency for each decade were overlaid to identify the areas with the greatest population growth and largest number of hurricanes. Results show that there is no trend in the number of hurricanes in each decade; however more people have been affected and more damage has occurred through time. Therefore, even with damage adjusted to 1995 dollars, the increase in population density along the coast has resulted in more loss of property. In particular, Florida and Louisiana have had the highest overall damage from 1950 through 1999.

Luoheng Han, University of Alabama – **Session 17**
HYPERSPECTRAL REMOTE SENSING OF A SUBMERGED MACROPHYTE AT VARYING DEPTHS

The study was designed to study the spectral responses of *Ceratophyllum demersum*, a common submerged macrophyte, with varying depth in columns of both clear and algae-laden water. The experiments were undertaken in a tank with 20,500 liters in volume, 360 cm in diameter, and 150 cm of total depth. The first experiment was executed under a clear-water condition and the

second was completed with an addition of algal solution to the tank. Spectral data were collected using an ASD FieldSpec UV/VNIR with wavelengths ranging from 348 to 1074 nm. Results indicate that reflectance between 700 and 900 nm decreased as the depth of the macrophyte increased for both clear and algal-laden waters due simply to the absorption of light by the increasing volume of water. The “green peak” of algal chlorophyll, on the other hand, increased as the depth to the macrophyte increased. The “700 peak” shifted toward shorter wavelengths as the macrophyte’s depth increased. The depth of the macrophyte can be predicted with the reflectance at 706 nm using an exponential regression. The correlation coefficients reached as high as 0.99.

Stephen P. Hanna, Mary Washington College, **Vincent J. Del Casino Jr.**, California State University, Long Beach, **Casey Selden**, Mary Washington College, **Benjamin C. Hite**, Mary Washington College – **Session 10**

REPRESENTATION AS WORK: THE EVERYDAY PRODUCTION OF HERITAGE IN FREDERICKSBURG, VIRGINIA

Much of the critical literature in tourism geography and tourism studies more broadly recognizes the important role that representation plays in the reproduction of tourism spaces and the identities of tourists and tourism workers. For the most part, however, these literatures focus on the representations themselves or on governments and corporations that produce such place-images and enact policies to ensure that tourism spaces “live-up” to their representation. Lost in such macro-scale analyses are the everyday practices of tourism workers who both create the maps, films, and brochures used to sell places as sites of tourism and interact with the tourists themselves helping to translate representation into experience. These activities, we argue, constitute representation as work. In this paper we present preliminary findings of ongoing ethnographic research on tourism workers in Fredericksburg, Virginia. Drawing from interviews with employees at the city’s Visitors Center, we note that their daily efforts to reproduce Fredericksburg as “America’s Most Historic City,” identify what history is important, attach those past moments to the city’s present identity and landscape, and recreate tourism as a gendered activity.

Erin Hardin, **Amy Keenum**, **Erin Dyer**, University of North Alabama – **Session P2**

GIS IN DEIBERT PARK

Deibert Park provides excellent resources to the community for recreation and education. A Geographic Information System (GIS) provides tools for managing these types of resources. The GIS in Deibert Park project provides geographic information management for park administrators. The complete database is a useful tool for managing vegetation, displaying trail difficulty level, generating queries for commemorative trees and producing cartographic output. Various techniques were employed to construct the GIS database of Deibert Park. GPS was utilized to collect accurate geographic data about the features of Deibert Park. Commemorative trees, benches, ponds, trails, rest areas, blue bird boxes, educational areas, wooded areas and other features offered by the park were recorded. The raw data was imported into Microsoft Access and connected to ArcView 3.2. ArcView was incorporated to produce maps to aid in the selection and location of commemorative trees and display the difficulty levels of the trails.

Michael Harrison, University of Richmond, **Peter Waylen**, University of Florida – **Session 27**
THE EFFECT OF THE MADDEN-JULIAN OSCILLATION ON DAILY PRECIPITATION IN MEXICO

While research over the past several decades has succeeded in establishing definitive linkages between the El Niño-Southern Oscillation and precipitation anomalies in the Mesoamerica region, less attention has been focused on other cyclical phenomena and their relationship to rainfall production. However, in recent years, the intraseasonal atmospheric oscillation called the Madden-Julian Oscillation (MJO) has been shown to affect not only precipitation within

Mesoamerica, but the strength of ENSO itself. This research focuses on the relationship between ENSO, the MJO, and rainfall across Mexico. Multi-decadal rainfall measurements from 410 Mexican meteorological stations were used in combination with the Multivariate ENSO Index (MEI) and an MJO index derived from tropical windfield anomalies to examine the variability of Mexican rainfall resulting from the interplay between ENSO and the MJO for early and late boreal summer months. It was found that the ENSO alone could not explain the wide variability in precipitation across the region, but that the addition of the MJO allowed a clearer definition of rainfall variation.

Michael Hawkins, Ball State University – **Session 3**

MAINSTREAM POST-TOURISM AND ALL-INCLUSIVE RESORTS IN JAMAICA

This paper links the evolution of Jamaican all-inclusive resorts with contemporary currents of tourism often characterized as being quintessentially postmodern. These resorts have their roots both in countercultural “alternative” tourism and the packaged “mainstream” tourism of the past. As the global economic crisis of the early 1970s brought mass tourism in Jamaica to the point of collapse the tourism production system began to incorporate countercultural lifestyle into the formal tourism sector. The all-inclusive resort chains arising from this crisis are now helping the country to weather the recent violence occurring in the parts of the country which benefit least from tourism.

Canfei He, University of Memphis, **Breandán Ó hUallacháin**, Arizona State University – **Session 33**

ENTRY MODE AND LOCATION: FOREIGN MANUFACTURERS IN CHINA

Foreign manufacturing investments may enter China through two major entry modes: joint ventures (equity and cooperative) and wholly foreign-owned ventures. Due to their distinguished legal forms, risk characteristics, resource commitments and investment motivations, equity joint ventures and wholly foreign-owned ventures reveal significantly different locational behaviors in China. Wholly foreign-owned ventures are heavily concentrated in the coast region, particularly the Pearl River Delta, the Chaozhou-Shantou area, the Coastal Fujian, the Yangtze River Delta and Beijing-Tianjin Area. Equity joint ventures are more spatially dispersed but still with several major clusters in the coast. Using a conditional logit model and a unique microlevel dataset, this paper confirmed the hypothesis that new foreign manufacturing enterprises are attracted to locations which provide various agglomeration economies. Locations favored by economic transitions also draw new foreign manufacturing enterprises. The locational choices of equity joint ventures are more closely tied to agglomeration forces and locations with clustered manufacturing employments, foreign direct investment stocks and better market accessibility are favorable to equity joint ventures. Wholly foreign-owned ventures are more likely to follow the economic transition process and demand more liberalized economic environments. Wholly foreign-owned ventures also strongly favor locations early opened to foreign investors and granted various investment incentives.

Jason Henderson, University of Georgia – **Session 19**

THE POLITICS OF POSSIBILITIES AND THE SPACES OF THE AUTOMOBILE IN ATLANTA, GA

Atlanta, Georgia is a symbol of a national debate about urban sprawl and the role of automobiles in urban futures. The average Atlantan drives 34 miles a day, and congestion, smog, and social equity issues have forced a debate over how the region should grow. A central theme of this debate is the political possibility of actually getting Atlantans out of their cars. While scholars, community advocates, planners, and even business interests in Atlanta have promoted more walkable, transit-oriented development, there remains a profound resistance to reconfiguring urban space. In Atlanta's debate over the automobile there is a deeply contested spatial struggle

laden with ideology, values, and cultural references. What is this cultural resistance to change? How does it effect political will to implement meaningful public policies that reduce automobile dependency in metropolitan areas like Atlanta? How does it influence what is seen as possible or impossible in terms of urban futures? In this paper I provide a starting point for exploring the ways that ideology and cultural myths can obfuscate the task of reconfiguring urban space towards more sustainable and socially just urban forms.

Amanda Henley, University of North Carolina – **Session 12**

OBSERVATIONS OF THE URBAN HEAT ISLAND IN A SMALL CITY REVISITED

The impact of urbanization on local climate is one of the best examples of the ways humans modify the environment. Numerous papers have been published that determine the shape and extent of the urban heat island in various cities, but there have been no studies that revisit these publications to determine how these well-defined urban heat islands have changed over time. The goal of this study is to re-examine the research done by Richard Kopec in 1969 to determine how the urban heat island in the Chapel Hill/Carrboro area has changed in the past thirty-two years. In addition to revisiting the work done by Kopec, this study utilizes new techniques in order to enhance the previous methodology. The use of a geographic information system (GIS) and a global positioning system (GPS) are employed in this study. Preliminary results indicate that the urban heat island of Chapel Hill/Carrboro, NC has increased in both size and in intensity.

John Heppen, Carthage College – **Session 11**

THE SOUTH AND THE ELECTORAL COLLEGE 1972-2008

This paper will examine the role of the South in the electoral college from 1972 to 2008. The South will be defined as the eleven states of the Confederacy plus Missouri and Kentucky. First, this paper will study which states have gained or lost the most in the electoral college and their behavior in recent presidential elections. The nature of the states' populations will be part of the analysis since it is hypothesized that the nature of the population plays a key role in the states' political behaviors. The key findings of this paper indicate the states which have gained the most electoral votes are states which have Latino and Asian populations above the national median. States which fit a more traditional black and white or mostly white Southern population pattern have lost or not gained any electoral votes.

Thomas F. Howard, Armstrong Atlantic State University – **Session 15**

THE CINCINNATI SOUTHERN RAILROAD: HISTORICAL GEOGRAPHY OF URBAN ENTREPRENEURSHIP

The host city of this year's SEDAAG meeting lies on the only mainline railroad in the US to be constructed by a city government. The city was Cincinnati and the railroad, running across Kentucky and Tennessee to Chattanooga, was known at first as the Cincinnati Southern. A study of this railroad sheds light on such geographical topics as hinterland competition between cities and changes in the spatial structure of business operations in the years after the Civil War.

Joshua F. J. Inwood, James Tyner, Kent State University – **Session 6**

RACE, SPACE, AND HETEROSEXUAL RELATIONS AT THE TURN OF THE CENTURY: THE CASE STUDY OF JACK JOHNSON

Using the case study of Jack Johnson, the first black heavyweight-boxing champion of the world, this paper explores the production of singularly racialized spaces through the punishment of multiracialized heterosexual relations. Drawing of previous research we contend that there was a simultaneous social construction of racialized spaces and the policing of these spaces following emancipation. Ultimately we seek to contribute to the ongoing debates in geography on the intersection of space, race, and sexuality.

Barbara John, University of North Carolina at Charlotte – **Session 1**

4-WAY CAUTION – CHARLOTTE AT THE INTERSECTION OF 2002-2003 SCHOOL ASSIGNMENT CHOICE ZONES: THE UNCERTAIN GEOGRAPHY OF POST-CAPACCHIONE

On July 31, 2001, the Charlotte-Mecklenburg School Board of Education approved a new school assignment plan for school year 2002-2003. This “Choice Zones Plan” is based on the neighborhood school concept, and marks a significant change in how students have been assigned to schools over the last forty-seven years. Charlotte has grappled with the public school desegregation issue since 1954 when the Supreme Court ruled that “separate but equal public schools for black and white children were “inherently unequal” (*Brown v. Board of Education*). Since that ruling, the city of Charlotte has been forced to look at the spatial impact of its population distribution on an increasingly urban social structure, the public school system. The residential distribution of the citizens of Charlotte, particularly as categorized by race, provides data for analyzing and assessing how school populations can be manipulated. This paper frames the 2002-2003 Charlotte-Mecklenburg “Choice Zones Plan” as a reflection of all school assignment plans as a natural outgrowth of developmental time and social urban place. A geographical assessment of existing and proposed school districts shows the ongoing relationship between where Charlotteans live and where they attend school.

Gareth E. John, University of Kentucky – **Session 29**

CONSERVATISM, LANDSCAPE, AND NEW DEAL POLITICS IN ANN RICE O’HANLON’S “KENTUCKY MURAL”

In 1934 local artist and graduate of University of Kentucky completed her fresco mural in the lobby of Memorial Hall. Depicting scenes of stages in Kentucky’s development and civilization, the mural was commissioned by the federally funded Public Works of Art Project—a New Deal initiative and forerunner to the WPA’s Federal Arts Project (FAP). O’Hanlon’s work was produced according to the PWAP’s conservative prescription for a realistic and ‘representational’ portrayal of “the American scene” but also negotiates local themes and issues prevalent in the South and Kentucky during the Great Depression. In this paper I explore these local themes and issues, along with the national politics of the New Deal, through a contextual analysis of the landscape imagery depicted in O’Hanlon’s Kentucky mural. Ultimately I show how the artist opted for a conservative portrayal of Kentucky life that celebrated the state’s economic, social and technological progress while idealizing Southern identity according to an antiquated anti-modern agrarianism.

Jeff Jones, University of Kentucky – **Session 26**

PLAY IT, DON'T SAY IT: QUEERNESS AND BLACKNESS IN LEXINGTON, KY

For at least the last quarter century, gay, lesbian, bisexual, transgendered, and related sexualities (*queer* for lack of a better descriptive) Kentuckians and their lives have been major components of political, media, and cultural debate within the state. Yet, no local or state history book to date records a single reference to homosexuality or queer lives. The formation and spatial development of Lexington's queer communities is the focus of the author's doctoral research. This paper, however, draws from one area of this research that focuses specifically on African-American queer communities in Lexington, Kentucky. Drawing on in-depth interviews from a small, ethnographic study of eight African-American queer women, men, and their partners, this paper explores the relationships of these diverse individuals to various Lexington communities. It also looks at these individuals and their constructions of self-identity and place. Multiple social and media discourses tend to lump both black and queer lives into a "black community" or a "gay community." This paper argues that heterogeneity of community rather than homogeneity is the rule. Moreover, queer African-Americans in this study construct their identities through no single model. Yet, they also discuss a divide that places them either within largely white queer

communities or as a largely invisible component of African-American communities where queer life is reduced to “playing it but not saying it.” This paper concludes with the implications of these life stories for gay rights, black HIV prevention efforts, and the nature of constructions of race and sexuality.

John Paul Jones III, University of Kentucky – **Session 13**

GHOST STORIES

Ghosts, or hauntings, have seldom been objects of geographic investigation, and for good reason: they are manifestly outside of the “real” for most of modern – and postmodern - geographers. And yet, ghosts are crucial for defining places for a large number of people across the world. In this largely introspective essay, I recount how a credible ghost story opened up my own thinking about ghosts. I offer some ideas about why we, as geographers, might want to study them. And I reflect more theoretically on what their possible existence means for how we define the “real.”

Penelope G. Karagounis, University of North Carolina at Charlotte – **Session 16**

SOCIAL GEOGRAPHY OF THE GREEK COMMUNITY IN CHARLOTTE, NORTH CAROLINA

The topic of this study is the social geography of the Greek community in Charlotte, North Carolina. The waves of Greek immigrants who came to Charlotte were from the Peloponnesian village of Arachova and from Evrytania. The new immigrants provided an increase of Greeks to the Charlotte region and established the core of Charlotte’s Greek community in the early twentieth century. This was the beginning of a Greek ethnic enclave to the area. The Charlotte Greek community has maintained its social structures and social activities for over seventy-five years.

Barry D. Keim, University of New Hampshire, **Gregory E. Faiers**, University of Pittsburgh-Johnstown – **Session 27**

INTERPRETATION OF EXTREME PRECIPITATION AT A CONSTRUCTION SITE: AN APPLIED TEST CASE IN NORTHERN NEW HAMPSHIRE

Interpretation of heavy rainfall can be a daunting task, especially from a legal perspective. This paper details results from a construction site case in northern New Hampshire involving *force majeure*, where the occurrence or non-occurrence of a 10-year precipitation event was the focus. Results showed that a 10-year rainfall event did indeed occur at a location very near the study site over a 5-day duration, but that analysis of rainfall over a 30-day duration provided the most conclusive evidence for a 10-year event across the entire construction site.

Philip S. Kempf, University of North Carolina at Greensboro – **Session 16**

JOURNEY-TO-WORK TRAVEL TIMES: THE INFLUENCE OF PUBLIC TRANSIT

Over the years many speculations have evolved concerning the variation in commuting times by place. The purpose of this paper is to examine the top 50 metropolitan areas in the United States and analyze whether an increased use of public transportation positively or negatively effects average journey-to-work times. All definitions and data for this study were obtained from the 1990 Census. High travel-to-work times seem to be agglomerated within the Bowash megalopolis and within California’s largest urban systems. Public transportation use levels also seemed to be regionalized within the Bowash megalopolis as only the Chicago, San Francisco, and Oakland PMSAs reported public transportation rates over 9% outside the Bowash megalopolis. A Spearman’s Rank Order Correlation Coefficient of 0.50 at the 1% level verified that a strong positive associational relationship exists between average journey-to-work times and public transportation usage levels.

Paul Kingsbury, University of Kentucky – **Session 22**

BECOMING LANDSCAPE? LANSDOWNE SHOPPES, LEXINGTON, KENTUCKY

This paper uses what Gilles Deleuze calls a “transcendental empiricist” approach to map differential forces immanent to the landscape of Lansdowne Shoppes, Lexington, Kentucky. Rather than pursue a conventional discursive reading that recognizes the landscape as a social field, I sense and encounter a de-stratified terrain of corporeal logics and involuted becomings that splay into the landscape’s orientations, directions, entries, and exits. In the wake of a landscape that is constant and conjugated by cultural geography’s use of the metaphor of a theater (e.g. actors, stages, and scripts) we may connect with the consistent anamorphosis of a landscape teeming with undecidable molecular forces and molar aggregations. Lansdowne Shoppes, with its speed bumps, dumpsters, heating filaments, and drive-thru menus, is a landscape suspended amidst psychic and corporeal forms not based on resemblance or imitation, but in a molecular line of deformation between molar forms.

Shane Kirby, Jacksonville State University – **Session 23**

THE EFFECTS OF A BYPASS ON THE COMMERCIAL DEVELOPMENT OF AN INTERSTATE INTERCHANGE

The City of Oxford, Alabama has enjoyed phenomenal economic growth over the past 10-years and has become the envy of the other municipalities in Calhoun County. Its economic growth has outstripped the growth of the other cities and has quickly transformed it from a typical town of less than 10,000 to one that is taking advantage of every available commercial space. There has been an obvious upswing in the number of new businesses settling in Oxford. The area along Highway 21 north of the intersection of Highways 21 and 78 has experienced a filling in process whereby virtually all-available commercial lots have been developed. South of the same intersection along Highway 21 there has been the addition of a number of smaller businesses centered on a Wal-Mart SuperCenter. The addition of an interchange on Interstate 20 at the intersection of Highway 78 and Golden Springs Road has produced an explosion of mainly service-oriented businesses anchored by a giant Lowe’s.

Paul A. Knapp, Georgia State University, **Henri D. Grissino-Mayer**, University of Tennessee, **Peter T. Soulé**, Appalachian State University – **Session 27**

EXTREME CLIMATIC SIGNATURE YEARS AND CLIMATIC BOUNDARIES IN THE INTERIOR PACIFIC NORTHWEST

We use tree-ring records from western juniper (*Juniperus occidentalis* var. *occidentalis*) occurring throughout the interior Pacific Northwest to identify extreme climatic signature years (CSYs) (i.e. severe single-year droughts) from 1500-1998. Additionally, we identify three climatic boundaries based on similarities in the variances of the radial growth indices. Our results indicate that widespread extreme CSYs were concentrated in the 16th and early part of the 17th centuries and did not occur again until the early 20th century. Further, the precise timing of these extreme CSYs may be dependent on the tree species selected for analysis. Our results also suggest that western juniper radial growth indices have substantial interannual variability within the northwestern range of the species (i.e. central Oregon), particularly when compared to western juniper growing in its northeastern range (i.e. eastern Oregon, southeastern Idaho, and northern Nevada) and southwestern range (i.e. southern Oregon and northeast California). We suspect that the substantial differences in the variability of western juniper radial growth indices is linked to the influence of ENSO events on winter/spring precipitation amounts.

Robert J. Kruse II, Kent State University – **Session 6**

NARRATING INTERSECTIONS OF GENDER AND DWARFISM IN EVERYDAY SPACES

Dwarfs, midgets, even freaks, are among the terms that have been used to label *little people*. Little people are individuals who for genetic or hormonal reasons grow to a height of less than four feet eight inches. Feminist theorists have argued that discursive identities of women prevent any meaningful essentialized analysis of their experiences. Similarly, disability researchers have argued against generalizing the experiences of disabled individuals. This paper explores the intersection of gender and the “disability” of dwarfism through the narratives of four women who are little people. Findings suggest that the ways women who are little people negotiate public spaces are affected by discourses of gender, disability, and common conceptions of what is physically “normal.” Furthermore, these discourses have material implications in the everyday lives of these women.

Hilda E. Kurtz, University of Georgia – **Session 30**

ACTIVATING STUDENT LEARNING: CASE METHOD INSTRUCTION IN THE COLLEGIATE GEOGRAPHY CLASSROOM

Teaching strategies that allow students to grapple directly with a range of geographically informed political and cultural perspectives could become increasingly important in a dramatically shifting world. A long tradition of case method teaching, widely used in disciplines other than geography, offers one approach to such a teaching and learning task. Case method instruction demands of students that they synthesize information to make evaluations, placing the learning objectives of the case method at the top of Bloom’s taxonomy. Preliminary experimentation with case method instruction in a lower-division geography classroom suggests that students gain a valuable learning experience from the opportunity to engage firsthand with a difficult real-life dilemma from a geographically informed perspective. I draw on this classroom experience to reflect on the contributions of, limitations to, and future possibilities for case method instruction in human geography.

Craig R. Laing, University of Tennessee at Chattanooga – **Session 29**

THE LATTER-DAY SAINT DIASPORA IN THE SOUTH: REGIONAL PATTERNS OF MEMBERS OF THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

During the 1900s, many members of the Church of Jesus Christ of Latter-day Saints left their Utah homeland and settled in other American regions. This, combined with new converts from the region, has led to a significant growth in members of the Church of Jesus Christ of Latter-day Saints in the South. The purpose of this paper is to document the 20th century diaspora of Latter-day Saints to the American South. This diaspora is examined through cartographic and statistical analysis. Data on membership was obtained both from Church-published materials and unpublished statistics from Church administrative officials. The map of membership distribution in this study is an improvement over previously published maps of Latter-day Saint populations by county. Also, the paper discusses the Church’s concept of gathering, how it changed over time, and how this has impacted the spatial pattern of members. Latter-day Saints are found to be similar in distribution to the region’s population, with significant populations in the region’s large metropolitan areas. These areas are emerging as early hearth areas of Latter-day Saint culture in the South and contributing to the diversity of the southern religious landscape.

Elin Langholn, East Carolina University – **Session 3**

ECOTOURISM IN DOMINICA: A RESEARCH ON ECOTOURISM IN THE LAST INDIGENOUS COMMUNITY IN THE CARIBBEAN

This paper examines the development of a new and alternative ecotourism industry in Dominica in the Caribbean. Dominica lacks the sandy beaches necessary for promoting “sun and sand”

tourism and the island's isolation has ensured the survival of endemic species of flora and fauna and of distinctive culture. Dominica is the only island in the Caribbean that has an indigenous population, the Carib Indians, who are descendants of the original inhabitants of the island. These two factors have made Ecotourism in Dominica a part of the government's development strategy. The paper shows that small-scale ecotourism might be the right path to more sustainable development of tourism on the island. However, more research is essential to create more sustainable practices, concerning both the physical, social and cultural environment of the islands. The unique group of Carib Indians is strongly marketed in the tourism industry, and further research is needed to understand and develop the structure of Ecotourism, to see if it can be a right path to sustainable development for everyone in the country.

Heidi Lannon, University of Florida – **Session 12**

THE USE OF COASTAL GEOMORPHOLOGY IN THE EVALUATION OF PUBLIC LAND USE POLICY IN NORTHEAST FLORIDA

In 1972 the State of Florida required local governments to produce comprehensive land use plans. Local jurisdictions set land use policy each decade chronicling the existing and proposed land uses for all property. Geomorphic variables are analyzed to evaluate three decades of coastal land use policy in St. Johns County. The beach width index, maximum dune height, crest position, and long term shoreline change every kilometer along the coast are evaluated. The geomorphic variables are compared to the number of dwelling units and the impervious area for each time period, and the adopted future land use densities. The beach width and impervious area relationships in St. Johns County are most significant, and demonstrate a temporal lag. The beach width in the prior time period is positively correlated with impervious area. Future land use densities are positively correlated with beach width and negatively with shoreline change suggesting that planned densities may be sensitive to the actual geomorphology for each time period. However, when long-term geomorphic variability is considered adopted land use densities are high in areas exhibiting dynamic geomorphology. This indicates that the land use policy tends to reflect conditions at the time of adoption rather than the long-term coastal characteristics.

Scott A. Lecce, East Carolina University, **Robert T. Pavlowsky**, Southwest Missouri State University – **Session P1**

DISPERSAL OF MINING-CONTAMINATED SEDIMENTS IN FLOODPLAINS, BLUE RIVER, WISCONSIN

Floodplains act as both sinks and sources of metal contaminants in mined watersheds. The effects, however, of geomorphic and geochemical interactions on spatial variations in floodplain contamination and contaminant dispersal remain poorly understood. The purpose of this research is threefold: (1) to estimate historical rates of overbank sedimentation using vertical changes in Zn concentrations, (2) to assess spatial variations in the storage and potential remobilization of Zn from different sedimentary environments, and (3) to investigate geomorphic and geochemical controls on the lateral and longitudinal dispersal of mining-related Zn in floodplain deposits. Results show that the deposition of historical alluvium exhibits a temporal and spatial lag, with pre-mining sedimentation rates highest in the tributaries and post-mining sedimentation rates highest in the lower valleys. Overbank deposits are the largest contaminant sink, storing five times more Zn than the point-bar deposits. Remobilization of Zn from storage is most likely in headwater and mid-basin reaches with high stream power and high rates of lateral channel migration. Lateral trends suggest that Zn contamination tends to be higher near the channel, particularly at the sites closest to the mine source where coarser tailings particles are the primary metal substrates.

Jonathan Leib, Florida State University, **Gerald Webster**, University of Alabama – **Session 11**
“SIX FLAGS OVER GEORGIA”: THE GEORGIA LEGISLATURE, THE CONFEDERATE BATTLE EMBLEM, AND THE NEW STATE FLAG

On January 31, 2001, Georgia Governor Roy Barnes signed into law a bill replacing Georgia’s 45 year old state flag. Introduced and passed by the state House and Senate in less than a week, the new Georgia flag is dominated by the state seal on a field of blue. Below the state seal is a banner containing five small versions of flags that have flown over Georgia under the heading of “Georgia’s History.” Included among the five flags is the one the new flag replaces. Created in 1956, the old state flag was dominated by the Confederate battle emblem. This paper analyzes the spatial pattern of votes in the Georgia General Assembly for and against the new flag. First, we provide context by briefly reviewing Georgia’s 1992/3 state flag debate. Second, we examine the 2001 flag debate and vote, considering the geographic patterns of the legislative votes in the context of each legislator’s partisan affiliation, and the racial and urban/rural/suburban composition of their legislative district. We conclude that the erosion of pro-Confederate flag support from legislators in some rural areas of the state led to the passage of the bill creating the new flag.

James K. Lein, Ohio University – **Session 9**

STATEWIDE FARMLAND LOSS MONITORING: THE OHIOVIEW EXAMPLE

The loss of agricultural land has become a significant concern as competition for land between cities and suburban areas intensifies. Farmland loss, while pervasive, is a discontinuous and gradual process that does not become apparent until a period of time has elapsed. As a consequence, policy makers are often slow to respond to the cumulative environmental impacts that can be attributed to the process of agricultural land conversion. To provide timely information on local and state-wide trends in land use/ land cover change, the OhioView consortium has developed a monitoring program based on the near-real time acquisition of Landsat 7 data that can track critical trends in farmland conversion and produce critical change over time information to guide land use planning efforts. This paper describes the principal features of the monitoring program and presents preliminary data products developed during the early stages of this project’s operation. The lessons learned during this initial phase highlight the challenges of state-wide land cover mapping and the applicability of remotely sensed data in land use policy making.

Jon Lepofsky, James C. Fraser, University of North Carolina at Chapel Hill – **Session 5**

FLEXIBLE CITIZENSHIP: MAKING CLAIMS IN AND ON URBAN SPACE

This paper is an exploratory investigation into contemporary urban geography. The authors use the idea of citizenship as a device to clarify the ways in which people claim the right to participate in the production of urban space. The authors argue that in the current stages of globalization and devolution, the idea of citizenship becomes a central mechanism to understand how responsibility for urban space production is made available and utilized. The paper uses contemporary community building initiatives as the focal point for the discussion. The authors introduce the idea of flexible citizenship to articulate how citizenship is employed in this context. The authors propose that flexible citizenship can be a critical device to democratize the production of urban space.

Elizabeth J. Leppman, St. Cloud State University – **Session 15**

BLACK CHURCHSCAPES OF KENTUCKY’S BLUEGRASS: SOME PRELIMINARY OBSERVATIONS

A conceptual model of the development of church landscapes, or churchscapes, begins with Belief, which generates emotional response or Attitude and regular behavior, or Intentionality. These intangibles are expressed in the landscape in an Icon, which becomes a metaphor for highly

valued characteristics of height, durability, and centrality. Affected by a designer's meaning, it also organizes space, time, communication, and meaning, and shapes users' meanings. Users also bring to the churchscape concerns from their secular lives, and they in turn effect changes in beliefs, attitude, and intentionality, so that the cycle repeats. Applying this conceptual model to the black churches of the Lexington, Kentucky, area requires including a strong sense of community in the Belief component, as the strength of this community has helped these churches to endure in the face of changing demographics and relations with the dominant white community.

Robert Lloyd, Michael Hodgson, University of South Carolina – **Session 4**

SEARCHING FOR LAND USE IN AERIAL PHOTOGRAPHS

This paper considers how people search for objects in natural scenes such as aerial photographs. A cognitive experiment was conducted that had subject search for land use objects in aerial photographs. A multiple target design was used that presented photographs with 1 to 5 objects. It was expected that photographs with more target objects would make the search faster. The primary land use objects also had secondary objects that were presented either near the primary object or far from the primary objects. Stores had parking lots, Schools had athletic fields, Churches had cemeteries, and Farmhouses had fields. The land use objects were presented on either a plain or forest background. Subjects simply considered each photograph presented on a monitor and clicked that the targeted land use was either present or absent. Results indicated that reaction time significantly decreased as the number of land use objects increased for present trials, but not for absent trials. Reaction times were significantly faster when primary and secondary land use objects were near each other than when they were far from each other. Forest backgrounds produced significantly slower reaction times than plain backgrounds. Schools and farmhouses were found significantly faster than the other land uses.

J. Dennis Lord, University of North Carolina at Charlotte – **Session 21**

HARNESSING THE LOCAL TO CAPTURE THE GLOBAL: INDUSTRIAL RESTRUCTURING IN GREENWOOD COUNTY, SOUTH CAROLINA

This paper uses Greenwood County, SC as a case study to illustrate the contrasting effects of globalization forces on the industrial restructuring of a local economy. The county's industrial structure, similar to that in many small communities in the Piedmont region of the US South, was dominated by the textile industry for over half of the 20th century. By the latter half of the century, however, the county and other textile communities began to realize the need to diversify their industrial base to maintain viable local economies. This need became even more apparent as the textile industry began to shift to lower cost, offshore production areas. More recently, globalization forces via FDI have benefited the local economy, the most notable example being the location of Fuji Film's North American manufacturing headquarters in the county. Greenwood County provides an example of a community that has been able to "harness the local to capture the global." Arguably, the county should be considered a "marker" region not unlike the status described for the Greenville-Spartanburg area of the state.

Rezaul Mahmood, Western Kentucky University, **Kenneth G. Hubbard**, University of Nebraska at Lincoln – **Session 14**

SOIL MOISTURE AND EVAPOTRANSPIRATION IN THE GREAT PLAINS: THE ROLE OF HETEROGENEOUS SOIL PHYSICAL PROPERTIES AND LAND USES

Soil moisture (SM) plays an important role in land surface and atmosphere interactions. It modifies energy balance at the near surface and the rate of water cycling between land and atmosphere. In the past, the lack of data prohibited understanding of SM variations at climate scales under varying soil conditions and land uses. However, it is possible to develop a long-term SM data set by using models and study these issues. In this paper we have provided a sensitivity

assessment of SM and ET for heterogeneous soil physical properties and for three land uses including irrigated maize, rainfed maize, and grass at climatological scale by using a water balance model. The study finds increased soil water content in the root zone throughout the year under irrigated farming. Soil water depletes to its lowest level under rainfed corn cultivation due to its complete reliance on naturally available SM. It is found that annual total evapotranspiration (ET) can be up to 34% and 36% higher under irrigated corn compared to rainfed corn and grass, respectively. Sensitivity analysis shows that soil physical properties influences SM at the root zone and seasonal total ET.

Susan P. Mains, University of the West Indies – **Session 25**

TEACHING TRANSNATIONALISM: MEDIA, GLOBALIZATION AND CRITICAL GEOGRAPHIES

Mainstream media have been increasingly important for simultaneously representing, challenging and reinforcing regions, while also providing a vast diversity of images from throughout the world. In this paper I examine how concepts of race and region have been interwoven in specific media representations, and as such have created very particular regional and cultural geographies. This exploration is undertaken to illustrate the means by which specific geographies of race and region have been represented in recent British media, and to explore how media cartographies of exclusion and mobility can be utilised to develop critical geographic pedagogies that include more nuanced discussions of transnationalism. The paper is divided into three sections: 1) a brief discussion of the theoretical framework focusing on space, representation and identity; 2) a discussion of recent debates about “Britishness” and cultural diversity in UK media; and 3) suggestions for teaching transnationalism with case studies based on the UK, US and Jamaica. Transnational identities move with people, between and beyond traditional territorial borders, and an examination of these journeys can provide a fruitful area for teaching and creating critical geographies.

David Mann, University of Tennessee – **Session P2**

DENDROARCHAEOLOGICAL INVESTIGATIONS AT THE SWAGGERTY BLOCKHOUSE, COCKE COUNTY, TENNESSEE

This study blends dendroarchaeological principles together unlike any previously carried out and shows the potential of these processes to assist the archaeologist in the dating of artifacts. The purpose of the study is to date the historic timbers and artifacts at the Swaggerty Blockhouse in Cocke County, Tennessee. Dendroarchaeological techniques were used to: (1) establish the cutting date of the timbers, (2) establish a collection of artifacts, and (3) establish the use of dendrochronological principles to verify the dating within an archaeological artifact collection. A total of thirty dendrochronological specimens were collected from the structure and skeleton plots developed. Plots were compared with a master chronology and verified using Cofecha resulting in a cutting date of 1860. A total of forty-two shovel test were dug resulting in the recovery of 167 artifacts. The flat glass and nail portion of the artifact assemblage was analyzed resulting in the mean date of 1863.9. Dating of timbers resulted in the cutting date of 1860, which correlates to an artifact mean of 1863.9. Through the use of the cutting date, the incept date of the nail collected was moved from 1830 to 1860. Further investigation will include the verification of the remaining artifact collection.

Leah D. Manos, University of Tennessee, Knoxville – **Session 10**

BLUE COLLAR CONSUMER TOURIST DESTINATIONS

This paper defines and describes a new type of tourist destination developing in several places in the United States. I am designating these destinations “Blue Collar Consumer.” This type of tourist destination has not been explicitly identified or described in the tourism literature. Each destination was initially focused on a natural or historical attraction, but the natural or historical

amenity has become progressively less important as other tourist activities have developed. Of these activities, recreational shopping and live performance theater are the most important in terms of numbers of visitors and revenue generated. Blue collar consumer tourists have many cultural traits which are reflected in the amusement, recreation and entertainment opportunities provided for them. Examples of blue collar consumer tourist destinations include Branson, Missouri, Myrtle Beach, South Carolina, Pigeon Forge, Tennessee and Williamsburg, Virginia. This type of destination has great potential for development in other U.S. locations.

Keywords: tourism, development, United States.

Deborah G. Martin, University of Georgia – **Session 30**

OBSERVING ATLANTA, GEORGIA: USING AN URBAN FIELD STUDY TO ENHANCE INSTRUCTOR KNOWLEDGE AND STUDENT EXPERIENCES IN URBAN GEOGRAPHY

Junior faculty new to their positions face many challenges in the first few years, especially prepping new courses. For many, finding materials that students can readily identify with is a particular challenge. In urban geography courses, knowledge of a local area is especially useful for demonstrating geographic principles with examples from the local – and regional—community. These classroom examples are further enhanced when students conduct their own field observations, with direction from the instructor. This paper describes a field study of the Atlanta area that is used in an intermediate geography class as a final project, in which students compare their observations of Atlanta with urban geography models and theories. I argue that the preparation of the project, and the completion of it by students, represents a valuable firsthand observation experience for both the instructor and the students. This paper outlines the considerations of preparing the assignment, including site and format, and the resulting benefits and opportunities in the first three years of its implementation.

Linda Martin, University of Kentucky – **Session 12**

INITIATION OF STREAM CUTS IN THE OZARK PLATEAU, SPRINGFIELD, MISSOURI

Study of the upper reaches of headwater tributaries draining the escarpment of the Springfield portion of the Ozark Plateau physiographic region indicates that slope and karst features of the plateau topography determine the rate of channel initiation according to stream power changes accompanying accretion of normal sheet flow. Attributes of the headwater tributaries show much similarity to geomorphic features noted for larger Ozark rivers, including flow that tends to maintain contact with alternating sides of flat alluvial valleys. Headwater portions of these upland valleys support a system of discontinuous cuts connected with shallow, grass-lined swales, from which overflow is distributed as cross-valley sheet flow. Measurements show that low stream power is generated by the sheet flow, and that discontinuous cuts are associated with locations where stream power is increased by either vertical or lateral flow accumulation caused by local topography or obstruction. Findings have a great bearing on placement of single-opening detention basins within these environments.

Matt McCourt, University of Kentucky – **Session 13**

STORIED SPATIALITIES: THE VAGARIES OF PLACING KNOWLEDGES IN A MOUNTAIN SETTING

Borrowing certain figures from Kathleen Stewart's inquiries into the ethnopoetic spaces of stories in West Virginia coal camps, this paper elaborates the narrative practices at work in two fragments of stories belonging to disabled miners and artisans from southeastern Kentucky. Each story fragment turns on *placing* events that operate through haunting spaces, a recurring site of

negotiations between different knowledges. In doing so, the stories frame the interplay between explanation and speculating, and the in-between spaces of the University and “hillbilly.”

Christopher F. Meindl, Georgia College & State University, **Derek H. Alderman**, East Carolina University – **Session 31**

SOUTHERNERS AND THEIR SWAMPS: USING THE INTERNET TO SURVEY PEOPLE’S PERCEPTIONS OF WETLANDS

Over the past several decades, the scientific community has discovered a host of benefits provided by wetlands such as flood control, water purification, groundwater recharge, and habitat for endangered species of plants and animals. In an effort to learn about people’s perceptions of wetland environments, we developed a simple on-line wetland survey that can be completed in 10 minutes or less. Our results suggest that many people have a fair understanding of wetland environments. This is important because if people appreciate wetlands, they are more likely to support public policy intended to protect these environments. At the same time, it would appear that there is room for improvement. Our survey suggests that many people are still not aware of some wetland benefits. Furthermore, although many wetlands provide some benefits, not all wetlands provide all benefits attributed to them. Our survey will need to be refined if we are to determine if people understand that different wetlands provide a different suite of benefits.

Harry J. Miller, Jr., Derek H. Alderman, East Carolina University – **Session P1**

THE BUSINESS OF NAMING STREETS AFTER MARTIN LUTHER KING, JR.

The naming of streets after slain civil rights leader Martin Luther King is an increasingly common and controversial event within American cities and towns. The most vocal opponents to naming streets for King are often non-residential institutions potentially affected by the address change. While business owners most often cite the economic cost of changing their address, there is evidence to suggest that some commercial interests identify Martin Luther King streets with the black community and fear the social connotations and economic consequences of this symbolic association. Geographers and other social scientists have spent little time investigating the intra-urban commercial prominence of MLK streets. The purpose of this poster is to identify and analyze the frequency and type of non-residential development found along Martin Luther King streets in the United States. Using the American Business Disc, we analyze the commercial structure of these streets in terms of sales volume, employee size, and Standard Industrial Classification. These patterns are compared to the overall non-residential structure of the country and general business patterns within each city that commemorates King through street naming.

Michael Miller, University of Southern Mississippi – **Session 17**

CHANGES IN THE AREA OF THE BARRIER ISLANDS OF MISSISSIPPI

This paper focuses on the coastal morphological changes in the barrier islands of the Mississippi Gulf Coast from 1989 to 1999. Landsat 5 imagery in the infrared bands is used to create clustered images that differentiate between land and water. Using ERDAS Imagine, the images are compared to determine differences in the number of pixels representing the land area of the islands. This is done to study the land change over the decade, specifically the erosion and accretion of the islands. The loss of Mississippi’s barrier islands would contribute to the vulnerability of coastal Mississippi to natural events. The islands provide protection from storm surge during hurricanes as well as creating a calm environment, which the primary industries of the Gulf Coast require. The islands also afford the proper conditions for the formation and maintenance of Mississippi’s coastal wetlands.

Jacqueline W. Mills, Louisiana State University – **Session 4**

FROM ROW CROPS TO PLANTED PINES: IMPACT OF GOVERNMENT POLICY ON A CHANGING LANDSCAPE IN GEORGIA (1987-2001)

Conversion of cleared agricultural land into planted pine forests signifies a metamorphosis of the physical landscape driven by human alteration. This modification, evident in the visual morphology, holds research potential for identifying locations and attributes of the locations where this transition is active, as well as for comprehending the rationale driving the human decision to change both form and function of land in these areas. While several spatial forces, such as land speculation and physiographic elements, have been identified as salient to this landscape change, the focus of this research is government policy, specifically as it relates to the Conservation Reserve Program (CRP), and how it serves as a catalyst for land use change. Within the larger study of land transition in Georgia, this program was consistently indicated as neither a push nor a pull factor, but as an element that helped form the direction of land productivity. CRP is not a singular agent in this change, but it has allowed land to be diverted to pine trees in Georgia at a rate that may not have been realized without its inception.

Amanda Mitchell, Jacksonville State University – **Session 16 GEOGRAPHIC PATTERNS OF PEOPLE CLAIMING NATIVE AMERICAN HERITAGE** When Europeans first came to the Americas they discovered that large numbers of people inhabited the New World. The Europeans soon decided that these “Indians” were culturally inferior to themselves. Native Americans who survived encroachment were often shunned by white society and deprived of their basic rights. For this reason, individuals with Native American ancestry often began to conceal their heritage. In recent decades, changing attitudes towards race and ethnicity within the United States have made it more acceptable to have a culturally diverse heritage. Census data indicates an increased number of people newly claiming Native American heritage. Whether a claim is substantiated or not, it indicates a desire to belong to a specific ethnic group. A survey was given to a portion of the student body of Jacksonville State University, in Northeastern Alabama, to ascertain if geographical patterns were present in people claiming Native American heritage.

Preston Mitchell, Derek H. Alderman, Derek Hanak, Harry Miller, East Carolina University – **Session 15**

CAROLINA THUNDER REVISITED: TRANSITION AND TRADITION IN THE GEOGRAPHY OF NASCAR

The recent death of Dale Earnhardt, Sr. is used as a springboard for assessing the growing national popularity of stock car racing. Several years ago, cultural geographer Richard Pillsbury provided evidence of the “decentralization” of NASCAR and what he considered the destruction of stock car racing as a unique southern tradition. Building upon the ideas of historian James Cobb, we argue that the geography of NASCAR—like southern culture in general—is a complex synthesis of change (transition) and continuity (tradition). Four major objectives are addressed in this paper. First, we update Pillsbury’s findings and conclusions from the early 1970s, identifying important changes in the location of Winston Cup tracks. Second, we discuss how the national restructuring of Winston Cup tracks has negatively affected North Wilkesboro, NC—a town of traditional importance in the cultural geography of NASCAR. Third, we explore the enduring role of southern tradition within NASCAR. A strong southern orientation in stock car racing is still evident when one examines the agglomeration of driver residences and racing teams around Charlotte, NC and the association’s management style, which reflects a traditional southern opposition to organized labor. Fourth, we conclude the paper by discussing how the career of Dale Earnhardt reflected the forces of change and continuity.

Lindsey O. Murphy, University of Southern Mississippi – **Session 17**

LAND USE/LAND COVER CHANGES ALONG THE MISSISSIPPI GULF COAST

The research was done to show a land use/land cover change on the Gulf Coast of Mississippi over a 10-year period. The two counties studied are Harrison and Jackson. Mississippi's Gulf Coast is the most active economic region in the state, which thus brings a polarization and movement south. Most of this movement is due to the legalization of casino gambling. Since land use patterns evolve in the wake of change, this research will show how much change has affected this area. It is assumed that there will be a change, and so loss in the vegetation of the area. Landsat imagery from December 1989 and January 1999 were the two data sets used for the study. The data sets were imported into an ENVI file and georectified. An unsupervised ISODATA classification was performed on the data to signify changes in the urbanization and vegetation of the coastline. The results of the classification were then used to show the amount of change in the area. There was a significant amount of change in the vegetation. Not surprisingly, there was a larger percent of healthy vegetation lost than that of unhealthy vegetation. The change and/or loss in the vegetation are assumed to be in large part due to the amount of growth that the area is experiencing.

Sally Nash, University of North Carolina at Chapel Hill, **Bonnie L. Kaserman**, University of British Columbia – **Session 32**

DOING FIELDWORK INSIDE-OUT: INTERVIEWS WITH LATINO FARMWORKERS AND THE NEGOTIATION OF MEDICAL DISCOURSE

Based upon experiences interviewing Latino migrant farmworkers in eastern North Carolina tobacco fields, this paper presents an exploration of positionality in fieldwork. We discuss our fractured social identities as enacted in the field, identities distancing us from our informants, and suggest how these identities produced a specific medical discourse. In particular, we argue that our positionalities/differences were in many ways an advantage in producing explanatory models of illness. Using excerpts from the narratives we composed about our interviewing experience, we illustrate how our positionalities were part of a negotiated process of knowledge production that took place between farmers, farmworkers, and researchers.

Elisabeth S. Nelson, University of North Carolina at Greensboro – **Session P2**

BIVARIATE SYMBOL DESIGN FOR THEMATIC MAPS: CONCEPTS AND GUIDELINES

Research conducted on the theory of selective attention suggests that varying the graphic combination used when designing bivariate point symbols affects the functionality of the symbol. Some graphic combinations appear to facilitate the ability to visualize correlation between the data sets mapped onto the symbol; others appear to be more effective at representing the data sets individually, some even at the expense of extracting correlational information. The purpose of this research was to test the strength of these findings in a map use context. Several bivariate symbol designs were tested in the study, using map use tasks designed to test subjects' abilities to extract either correlational information from the two mapped data sets or individual information from on the two data sets. Subject reaction times provided an assessment of the types and levels of interactions that occurred with each symbol set. Results corroborate previous research, with several symbol designs falling into each of three interactional categories: separable, integral, and configural. By confirming and expanding previous research, this study provides further evidence of the strength of selective attention theory in aiding the design of bivariate thematic maps.

David J. Nemeth, University of Toledo – **Session 26**

BLAME WALT ROSTOW FOR MISS SOM RASMEY'S ACID BATH

In general, the legal rights of women in Asia are ignored. To illustrate this I provide anecdotal evidence of "young, beautiful" women in several Asian countries who have been the targets of acid attacks by angry men and women over personal issues. Battery acid is the weapon of choice. These atrocities give new meaning to "assault and battery" where women are concerned. The acid attacks intentionally transform these women from "beautiful" to "ugly." Most of the victims are alone and poor, and youth and beauty may be their only assets. The courts of law, however, blame the victims' beauty and wile for initiating the circumstances that result in their suffering. The attackers generally go free. Miss Som Rasmeay of Cambodia is one of my examples. I digress from the brutal particulars of the acid attacks to a naive question: "Why is there so much battery acid around, anyway?" This leads me to ultimately blame the insidious impact of Walt Rostow's capitalist manifesto (*Stages of Economic Growth: A Non-Communist Manifesto*, 1960) and its role in the conspiracy of growth (globalization) for the attack on Miss Som Rasmeay.

Heather N. Nicol, State University of West Georgia – **Session 21**

HISTORICAL PATTERNS IN CARIBBEAN AIR TRANSPORTATION IN THE 20TH CENTURY

This paper represents the first step in a larger project studying transportation policy and development issues within the Caribbean. It uses archival and contemporary documents to reconstruct the historical geography of air transportation in the region, exploring the impact of the European colonialism and North American air transportation upon this insular society. After identifying the key sources of weaknesses of the region's transportation network (both past and present), the paper concludes that Miami has become the de facto capital of Caribbean air transportation. But it also concludes that Miami's dominance was not simply a by-product of deregulation of US airlines in the 1970s. Other historical factors, such as the impact of early air transportation networks, the lack of a common regional transportation policy, and political events such as the Cuban Revolution, were equally instrumental in shaping the contemporary network.

Viva Nordberg, University of Kentucky – **Session 7**

EFFECTS OF POPULATION GROWTH ON STREAM FLOW IN TWO SOUTHERN CALIFORNIA WATERSHEDS

Storm runoff quantity is influenced by population growth, which causes higher stream flow volumes due to increased urban infrastructure and the loss of pervious surfaces. Regression models were used to test whether annual stream flow was positively related to precipitation and population density for two urban watersheds in the San Gabriel Valley, California. Flood frequency curves were developed to detect if peak flows increased after significant population growth occurred in the same watersheds. Stream flow volume for Rubio and Eaton watersheds exhibited strong relationships to precipitation and population density. Additionally, the flood frequency curves showed that peak flows increased as the population increased after 1960, by 10-40% in the Rubio watershed and 70-200% in Eaton watershed. These data highlight the growing controversy and conflict between the need for flood control protections and environmental restoration in Los Angeles County.

Ann M. Oberhauser, Amy D. Pratt, West Virginia University – **Session 5**

GENDER AND THE POLITICAL ECONOMY OF TRANSFORMATION IN SOUTH AFRICA

This paper explores how political and economic transformation in South Africa is impacting rural women's livelihood strategies. The conceptual framework for this paper draws from contemporary feminist analyses from developing regions that are couched in postcolonial theory

and focus on indigenous forms of social agency among women. The empirical study is based in the former bantustan of Venda in the Northern Province where interviews were conducted with community leaders, groups and individuals. Women are increasingly involved in community projects in this area through a variety of income-generating activities that include pottery, baking, sewing, and agricultural production and marketing. These projects provide the potential for economic and social empowerment among poor women and their communities despite the patriarchal institutions that maintain a stronghold in many rural areas, as well as the neo-liberal policies adopted by the state. The discussion contributes to gender and development literature that particularly addresses community livelihood strategies in transition societies. In sum, political and economic transformation in the new South Africa is embedded in a complex set of institution and social agency that recreate, but also provide new opportunities for livelihood strategies.

William E. O'Brien, Florida Atlantic University – **Session 31**

EXTERNAL NATURE AND ENVIRONMENTAL JUSTICE IN EVERGLADES RESTORATION

The inclusion of minority communities in current large-scale Everglades restoration efforts is a stated goal of the federal and state agencies in charge. Environmental justice activists, however, criticize the attempt as inadequate. Among other factors, the persistence of a nature/culture dualism works to maintain the effective exclusion of minorities from the process. Three examples of such implications of this dualism are presented: (1) that the problems of the “natural” environment are presumed as separate from the “social” concerns of such communities; (2) the presumption that humans are necessarily a negative influence in nature, and that human population growth and immigration to South Florida undermine sustainability; and (3) that experts, trained in understanding the workings of nature, should control restoration efforts, inhibiting effective political participation by grassroots environmental justice activists.

Andy Orr, Jacksonville State University – **Session 23**

CANOEING CALHOUN COUNTY, ALABAMA

Waterways in Calhoun County, Alabama were evaluated to locate potential canoe trails. Topographic quadrangles were consulted to identify potential trail locations and driving directions to possible put-in and take-out locations. Each particular site was visited and parameters classified, such as proximity of launch and retrieval locations in respect to the waterway, amount of overgrowth which would make portage difficult, slope of the launch and retrieval areas, bank conditions, water levels, amount of debris, and aesthetic qualities. With this information, the vast majority of waterway sections were omitted. Four streams met the criteria for manageable canoe trail implementation.

Clifton W. Pannell, University of Georgia – **Session 21**

CHINA'S CONTINUING URBAN TRANSITION

China's has the world's largest urban population, 456 million in cities and towns according to the recently completed year 2000 census. This accounts for 36% of China's total population, and the increase in urbanization is accelerating in step with China's rapid economic growth and structural shift in employment. Six salient factors – population growth, internal migration, employment shift, growing trade, restructuring domestic economy, and capital for urban infrastructure --are noted and their roles in the urban transition are assessed. Regional variations in urbanization level and income have resulted as coastal areas have advanced most rapidly, while many interior areas remain poor and cut off from the benefits of fast economic growth.

Kyonghwan Park, University of Kentucky – **Session 22**

THE PRODUCTION OF HUMAN SUBJECTIVITY AND CYBERSPACE: IN CASE OF THE ONLINE GAME IN SOUTH KOREA

This paper examines the dynamics between the human subjectivity of Internet users and the online game space as a social space. Studies on the production of cyberspace have often not sufficiently paid attention to the inter-constructive relation between human bodies and cyberspace. Theoretical framework is based on the Deleuzian notions of desiring machines and production, which would elucidate the space in-between the body as an accumulation strategy, as David Harvey put it, and the body reductionism in some of the poststructuralist thoughts. Human subjectivities of the Internet users, which are originally amorphous with-in their own bodies, become assembled, fragmentized and emplaced into physical, instrumental cyberspace machine. Empirics of online game are deliberately arranged for the possible contribution to discourses between them, because it could bring forward integrative implications of people, technology and capitalism. Specifically, South Korea is one of the prominent countries, which rapidly proceeds into the techno-capitalism. This research examines the characteristics of Korean Internet users and online games, analyzes the visual representation and structure of leading online games, and interprets the game participants' addiction and reaction to them in South Korea.

Albert J. Parker, **Kathleen C. Parker**, University of Georgia, **Deanna H. McCay**, Colgate University – **Session 14**

GEOGRAPHIC AND ECOLOGICAL VARIATION IN SEEDLING GROWTH RATES OF SAND PINE

We harvested seedlings from across the range of sand pine in order to estimate seedling growth rates. Our purpose was to relate spatial variation in seedling growth rates to ecological and geographic effects. We found no significant differences between the two varieties in seedling growth rates. Ocala sand pine on the Florida peninsula commonly regenerates following crown fires in open ground; seedling growth was rapid on these sites, with minimal within-stand variation. Choctawhatchee sand pine on the Florida panhandle commonly regenerates in the understory of extant sand pine forests, often in canopy gaps formed by wind damage. Seedling growth rates were slower and more variable in these settings. Heat and water stress at a modern dune site on the panhandle yielded the slowest seedling growth rates. At Eglin Air Force Base, fire suppression has allowed sand pine to invade longleaf pine savannas. Seedling growth rates across this invasion gradient revealed no significant differences between sites from the historical core of sand pine's range in coastal lowlands and older invasive sites, where dense sand pine cover has developed. By contrast, recently invaded sites showed rapid seedling growth, not significantly different from values attained for Ocala sand pine seedlings following crown fires.

Brooks C. Pearson, State University of West Georgia – **Session 30**

ASSESSING THE ACCURACY OF MILITARY MAPS SUPPORTING THE 1862 SHENANDOAH VALLEY CAMPAIGN OF THE AMERICAN CIVIL WAR

This study begins assessing the accuracy of map information contemporary with operations during the 1862 Shenandoah Valley Campaign of the American Civil War (1861-1865). To accomplish this, a geographic information system (GIS) was assembled with layers representing map data from current US Geological Survey (USGS) 7.5' topographic sheets and from a sample of Civil War historical cartography: Jedediah Hotchkiss's 1862 *Map of the Shenandoah Valley*; Hermann Boye's 1859 *Map of the State of Virginia*; an 1861 Union triangulation survey of the Shenandoah River and its south fork conducted by Cpt. James W. Abert, son of Corps of Topographical Engineers head Col. John Abert; and Union Maj. Gen Franz Sigel's 1862 Valley Campaign map. For the purposes of the present study, the positional accuracy of the historical maps will be evaluated relative to ground truth as represented by the USGS information.

Patrick Pease, Scott Lecce, Paul Gares, East Carolina University – Session P1
CONCENTRATIONS AND HEAVY METAL CONTAMINATION OF OVERBANK DEPOSITS ON THE FLOODPLAIN OF THE TAR RIVER, NC, FOLLOWING HURRICANE FLOYD

Samples of sediment deposited on the Tar River floodplain following Hurricane Floyd were collected from 85 sites along the lower Tar River basin in eastern North Carolina. Samples were analyzed for sedimentation and heavy metal concentration. Despite the magnitude of the flood, little suspended sediment was deposited on the floodplain. In almost all cases the deposition was less than 0.2 cm and in many locations the sediment amounted to a “dusting” or was not present at all. Possible explanations for the low sediment concentration include, 1) low suspended sediment concentrations in the flood water, 2) most sediment available for transport was flushed from the system during the smaller flood of Hurricane Dennis, and 3) the bulk of sediment in the system might have been too fine to settle from suspension and was evacuated with the flood water. Although samples showed varying concentrations of heavy metals, the sediments were generally not heavily contaminated relative to EPA residential soil and agricultural soil standards. The highest contamination levels occurred in discrete locations with possible local inputs. The exception was arsenic, which was elevated at almost all sites, and had concentrations as much as 40 times above the acceptable levels for residential soil.

Jonathan D. Phillips, University of Kentucky – Session 14
EROSION, ISOSTASY, AND THE MISSING PENEPLAINS

The peneplain--a low-relief erosional plain worn to near sea level--is a venerable concept in geomorphology, geology, and geography. Yet despite more than a century of effort, no convincing example of a contemporary peneplain has been identified, and the identification of relict peneplains is uncertain and controversial. As a peneplain is a logical outcome during a period of long tectonic stability, the paucity or absence of peneplains is problematic. Most explanations are based on the notion that the periods of tectonic stability required for peneplain formation are too long to allow the features to fully develop, or that Neogene tectonics has precluded recent and peneplanation. This paper proposes an alternative explanation, generally consistent with those given above, which can also explain the absence of peneplains in regions experiencing long tectonic stability. If erosion or deposition rates are related to elevation, and if there is an isostatic response (uplift or subsidence) to erosional unloading or depositional loading, the relationship between these components is dynamically unstable. This is demonstrated mathematically. This instability implies that no particular state or mode of topographic evolution--including peneplanation--is likely to persist in the face of variations or perturbations which influence any system component. Thus formation of a peneplain would require not only tectonic stability, but also relative constancy in sea level (or rates and direction of sea level change), climate, biotic influences on erosion or deposition, and any other factors which modify erosion, deposition, elevation fields, or isostatic responses. This would explain an absence of geologically contemporary peneplains, and a rarity of well-developed peneplains in the geologic record.

Erin Poliakov, University of Illinois at Chicago – Session P2
SPATIAL DISTRIBUTION OF PRECIPITATION IN THE GREAT LAKES REGION: EL NINO, LA NINA, AND NON-ENSO YEARS (1948-1996)

Spatial distribution of precipitation during El Nino, La Nina, and Non-ENSO years is examined in the Great Lakes region during the years 1948 through 1996. This research was accomplished by analyzing historical climate data from the Great Lakes region. Analysis incorporates 21-sites within the Great Lakes drainage basin in the northern United States; states include Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin. Twelve-month periods are grouped into the four seasons. Seasonal averages are calculated, as well as standard deviation for each season and group of years to indicate variation of precipitation from normal

amounts. Normal precipitation amounts are calculated by the mean of all years in the groups that span the 49 years. Conclusions are formed, summarizing the region's spatial variation in precipitation, mapped and visualized using Surfer software.

John Protevi, Louisiana State University – **Session 22**

THE GEOPHILOSOPHIES OF DELEUZE AND GUATTARI

Examines the 1980 volume by French thinkers Gilles Deleuze and Félix Guattari, *A Thousand Plateaus*, in terms of a “geophilosophy” which provides an unprecedented opportunity for philosophers and geographers to collaborate. Discusses the link of *A Thousand Plateaus* with complexity theory, a neo-materialism which avoids determinism and vitalism, the traditional bogeys of materialisms. Explains Deleuze and Guattari's distinction between “actual” (the realm of constituted bodies) and the “virtual” (the field of potential transformations of those bodies). Distinguishes an “empirical geophilosophy” whose units of analysis are “bodies politic,” material systems whose formation of “territories” or fields of exploitation can be analyzed in political terms, from a “transcendental geophilosophy,” which with the help of the notion of “phase space” maps the virtual realm of those bodies in terms of the “Earth,” a new relation to the creative potentials of material systems to form free bodies with multiple, shifting, and increasingly intense internal and external connections.

Casey W. Reaves, Jacksonville State University – **Session 23**

FINDING THE BEST AVAILABLE ROUTE FOR THE GADSDEN TROLLEY COMPANY

The Gadsden Trolley Company provides a public bus service for the city of Gadsden in northeast Alabama. The eastern route of the trolley service was the focus of this research. The question raised was if the existing bus route of the Gadsden Trolley Company was the best available. If a better route were found, then it would be possible to add more stops. The addition of these stops would allow more residents access to the bus service and produce more revenue from customer bus fees. With the assistance of a GIS software package, it was found that the new proposed route was less than a half of a mile shorter than the original route. Since this difference was so small, it was determined that it would not greatly enhance customer service or increase company revenue to modify the existing bus route.

George Roedl, University of Southern Mississippi – **Session 9**

SPATIAL RELATIONSHIPS BETWEEN LULC CHANGES AND KNOWN ENVIRONMENTALLY SENSITIVE AREAS WITHIN HARRISON COUNTY, MISSISSIPPI

The research presented in this paper builds upon previous research. Changes in Land Use/Land Cover that were identified within the study area were used to determine the proximity of environmentally sensitive areas to areas of change. Changes in LULC were derived from Landsat images and exported into a GIS layer. Environmentally sensitive areas were identified and compiled by the Mississippi Natural Heritage Program. The research used GIS to identify environmentally sensitive areas within areas of change as well as environmentally sensitive areas within specified distances of areas that experienced changes in LULC. The environmentally sensitive areas were further classified into types and ranks, allowing further analysis of the impact of LULC changes on those specific classes.

Linda Rohr, Michael Lewis, University of North Carolina at Greensboro, **Lauck Ward**, Virginia Museum of Natural History – **Session P1**

MASS WASTING OF THE STRATFORD CLIFFS, WESTMORELAND COUNTY, VIRGINIA

This poster reports on a field investigation into instability and mass wasting along a portion of the Stratford Cliffs, a dissected escarpment along the Virginia shore of the Potomac River arm of Chesapeake Bay. Mass wasting of the poorly consolidated marine sediments poses a hazard to visitors at Stratford Hall Plantation and Westmorland State Park. We completed a reconnaissance of the cliffs and sampled sediments from each of four stratigraphic units. Field observations and particle size analysis of sediment samples using a Wentworth sieve technique suggests groundwater sapping along stratigraphic contacts plays a role in failure of the upper cliff face. Other potential factors include desiccation and frost separation of basal cliff members in the water zone. Forested versus cultivated land adjacent to the cliffs is also suggested as influencing groundwater movement and mass wasting.

Dan Royall, University of Alabama – **Session 7**

LAKE SEDIMENT MAGNETISM AND SEDIMENT SOURCE TRACING AT WOLF BRANCH, NORTH CAROLINA

Determining the sources of sediment carried by streams is important for understanding environmental impacts of different land use types and the rates of recovery of watersheds after disturbance. In this study, the magnetic properties of potential sediment sources and lake sediment accumulations were compared in an effort to reconstruct changes in sediment source over a 50-year period for a small catchment in western North Carolina. The study catchment, Wolf Branch, is part of the Bent Creek Experimental Forest in Pisgah National Forest, an area that was well-populated by settlers in the 1800s, but abandoned to forest regrowth following its purchase by the Forest Service in 1910. Magnetic measurements carried out on particle-size separates suggest that most sediment in the lake was derived from bottomland stream-marginal sources and not adjacent footslope colluvium or upland hillslopes. However, two sediment strata dating from the 1940s and 1960s respectively, display characteristics similar to upland sources marginal to the lake. This first stratum may be related to minor development around the lake which occurred prior to 1950. The second may relate to a clearcut (or preparatory road building) on the north slope of the lake, although the poorly-resolved sedimentation chronology leaves the timing in question.

David Shankman, Qiaoli Liang, University of Alabama – **Session 14**

FLOOD CONTROL IN THE POYANG LAKE REGION, JIANGXI, CHINA

Jiangxi Province in southeastern China contains Poyang Lake, the largest freshwater lake in the country. All of the major rivers originating in the province flow into Poyang Lake. The drainage for Poyang lake, and therefore almost all of Jiangxi, is a narrow outlet into the Changjiang. Poyang Lake and the lower sections of the major Jiangxi rivers flood most years during the early summer months and floodwater can be several meters above the surrounding floodplain. Extensive land reclamation and new levee construction during the past few decades has reduced the size of the lake. There are about 6400km of levees protecting 10,000 square km of farmland and a population of about 10 million. The floodwater storage area has been significantly reduced and therefore, peak water levels and flood frequency have progressively increased in recent decades. Increased rates of river and lake sedimentation will likely magnify the flood problems. The abandonment of reclaimed farmland adjacent to the rivers and in regions surrounding Poyang Lake is necessary to increase floodwater storage and lower peak water levels. However, this has not been pursued because it would force a large relocation of farmers into areas already heavily populated and in intensive cultivation.

Rebecca Sheehan, Louisiana State University – **Session 13**

TELLING STORIES AND FISHING FOR PLACE

The campus lake area around Louisiana State University presents a picturesque scene. In several sections a narrow provides access to numerous, mostly white, upper-middle class residences. The slow paced road provides space for walking, running, and cycling along the lakes. Workingmen and women, black and white, spend time at the lakes taking part in these activities. Yet, the affluence of the area can make the place seem ungraspable. There are others, however, who use the lakes at all hours of the day and for long periods of time. They are the mostly black bank fishermen. These fishermen park along the banks on public property or on private land. What kind of meanings do the fishermen attach to the campus lakes? How are they connected with this place? My aim in this paper is to examine the nature of answers to informal questions from one interview with a bank fisherman, Joe, a black man in his mid-forties. I explore how Joe's responses to questions came in the form of stories and suggest a few ways that analysis through stories apprehends meanings of place that, perhaps, would not be understood without attention to them.

Bradley A. Shellito, Old Dominion University – **Session 4**

SPATIAL MODELING OF SEASONAL HOMES IN THE UPPER GREAT LAKES STATES

Seasonal home location is influenced by a variety of factors, including many related to land use. Water bodies, natural areas, agriculture, and distance from cities are some of the qualities that affect the location and distribution of seasonal homes. This project examines the 1990 seasonal home distribution for the Upper Great Lakes States of Michigan, Wisconsin, and Minnesota on an MCD level. Geographic Information Systems are used to construct independent variables over the three state level. Modeling techniques, including the application of logit regression and artificial neural networks, are used to examine this distribution. These models are used to determine the principal predictors of seasonal home distribution in the region. The project also serves as a test of the applicability of combining these modeling approaches with GIS and recreational tourism related theory. Conclusions are drawn about the principal predictors of seasonal home distribution as well as a comparison of modeling approaches.

Robert Sirk, Austin Peavy State University – **Session 31**

ESTUARIES UNDER THREAT: ANTHROPOGENIC RUNOFF IN THE CHESAPEAKE BAY, PALACE SOUND, AND INDIAN RIVER LAGOON

Estuaries are complex systems produced in turn from the interaction of terrestrial, atmospheric, and freshwater and saltwater systems. Historically, their great productivity and proximity to human populations and activities have given of estuarine systems importance beyond their physical size. This proximity has also made them the inadvertent victims of human development, and made them some of the most threatened ecosystems on earth. Increased threat has often given them increased popular visibility and resulted in greater outcry for their protection or remediation. The Chesapeake Bay, Pamlico Sound, Indian River Lagoon have all suffered from this attractiveness-to-man, and are utilized to highlight some anthropogenic threats to estuary systems. They also provide the basis for some author concluding comments and observations about the public's perception of keeping them safe.

Peter T. Soulé, Appalachian State University, **Paul A. Knapp**, Georgia State University, **Henri D. Grissino-Mayer**, University of Tennessee – **Session 27**

THE ROLE OF DISTURBANCE IN THE ESTABLISHMENT HISTORY OF WESTERN JUNIPER IN OREGON

The tree species western juniper (*Juniperus occidentalis* var. *occidentalis*) has experienced a rapid expansion of its range in the last 120 years, with geometric rates of establishment occurring

at some locations. In this paper we examine the establishment history of western juniper on five matched pairs of study sites in Oregon and the probable driving forces behind the establishment patterns. We sampled on five Research Natural Areas (RNAs) or proposed RNAs, areas that have had minimal anthropogenic disturbances, and five areas adjacent to these RNAs that are actively disturbed. We randomly sampled 200 trees per site and dated these trees using standard dendroecological techniques. Our results show that establishment rates began to increase in the late 1800s through the 1920s, followed by a small downturn after the 1930s drought, and then a rapid increase in establishment rates through the early 1990s. Trees on the disturbed sites are younger, have a greater density, and a more episodic establishment history than on the less disturbed sites. In addition to disturbance, increasing summer precipitation, a lack of major stand-replacing fires, an increasing seed rain, and carbon dioxide enrichment are probable driving forces behind the increased rates of establishment.

Robert B. Spans, Jacksonville State University – **Session 23**

DOES JACKSONVILLE NEED ANOTHER SERVICE STATION?

Driving through most cities in America, it is quite evident that they are usually laid out in a similar fashion to one another. The geographic placement of fast food restaurants, gasoline stations, and stores throughout the country is an attempt for these services to cluster together in a ribbon or linear fashion to compete for a common market. These tertiary services attempt to target consumers within the local community as well as the traffic volume traveling through a place. Gasoline stations are particularly attracted to locations along busy roadways. As the economy continues to grow, gasoline stations spring up along thoroughfares located throughout the country providing low-order goods with a low range. American consumers have become very mobile over the past several years, relying heavily upon the automobile. The auto has become a way of life for the consumer and a way to profit for the businessman, especially gasoline stations. The purpose of this research is to determine whether or not the number of service gasoline stations in Jacksonville, Alabama, is at an optimal level, that is, the spatial arrangement of stations in Jacksonville matches perfectly with the threshold, range, and traffic flow to support the 14 service stations.

Audrey Sprenger, University of Denver – **Session 20**

PLACE STORIES: ACCRETED GEOGRAPHIES FROM ETHNOGRAPHY

This paper shows how ethnographic field methods can be used to understand the most elusive meanings of place -- like where it's located and when it's used, how it's known and why it's remembered. Drawn from my experiences pursuing field research among forest-dependent communities in Manitoba, Canada, it introduces "cartographic storytelling," a new theory which uses maps and conversational narratives to document the discursive processes of ethnographic research, as well as the content of the data collected. Such an analysis will not only make clear the geographical foundations of ethnographic research, but will also provoke discussion about the social differences between any social scientist who tells stories about a place, and the subjects of their research, who call this same place "home."

Tony Stallins, Florida State University – **Session 31**

LIGHTNING PROPERTY DAMAGE LOSSES FOR GEORGIA (1996-2000) AND POTENTIAL SOURCES OF VARIABILITY IN ITS DISTRIBUTION

I compare lightning property damage losses for the state of Georgia as compiled by a major property insurer and by NOAA's Storm Report. Over a five year period (1996-2000), lightning property damage claims of the state's third largest insurer totaled 22.9 million dollars. Over this same period in NOAA's Storm Report, a total of 13.5 million dollars in damage were recorded. Given this under representation, I discuss the need for more in-depth geographic analysis of the distribution of risk factors associated with lightning losses. Assessments of lightning hazards

based upon background thunderstorm frequency and population density are common; however, few studies have examined geographic variability in the emergence of lightning property damage from the perspective of urban heat island effects; interactions among physiographic variables; and land-use type. These factors are discussed in light of current lightning research, as well as interviews with fire department personnel, utility operators, and insurance representatives from the Atlanta metropolitan area.

Christopher H. Stanfield, Pin-Shuo Liu, Hsiang-Te Kung, University of Memphis – Session 4
A PREDICTIVE MODEL OF CHILDHOOD LEAD POISONING RISK IN MEMPHIS, TENNESSEE

This study evaluates the predictive ability of a GIS model used to determine the potential risk for childhood lead poisoning within the Memphis metropolitan area. We use the Shelby County Health Department database for 1998 and the 1990 Census of Population and Housing data at the census tract resolution to analyze the geographic relationship between childhood lead poisoning incidence and lead poisoning risk potential as determined from a variety of demographic and housing factors. Preliminary results indicate a strong correlation between the risk index generated by the model and childhood lead poisoning incidence. The apparent strength of this model indicates its usefulness as a tool for state and county public health agencies to direct funding for screening and prevention efforts to populations in areas which are at the highest relative risk for toxic lead exposure.

Philip E. Steinberg, Stephen D. McDowell, Florida State University – Session 19
MUTINY ON THE BANDWIDTH: THE SEMIOTICS OF STATEHOOD IN THE INTERNET DOMAIN NAME REGISTRIES OF PITCAIRN ISLAND AND NIUE

The Internet has evolved to have a complex top-level domain name system, in which generic top-level domains like COM and ORG coexist with country-code domains like UK and JP. This dual system points to the Internet's existence as a space that is neither the sum of pre-existing state territories nor a space wherein the authority of the state is universally transcended. Rather, it is a space wherein the continual tension between globalist flows and statist claims to territorial sovereignty are being renegotiated. Here, we illustrate this renegotiation by focusing on two Pacific island microstates that, in very different ways, have used their Internet domain names to construct 'new' states that break the typical tripartite construction of nation, government, and territory that historically has formed the foundation for the modern state-ideal. In the process, these microstates have served to both reproduce and challenge the state-centric organization of the global political system.

John B. Strait, University of New Hampshire – Session 19
POVERTY CONCENTRATION IN A MULTI-ETHNIC CITY: THE IMPACT OF COMPOSITIONAL AND REDISTRIBUTIVE FORCES ON POVERTY CONCENTRATION IN MIAMI, FLORIDA, 1980-1990

Changes in poverty concentration have been shown to result from intrametropolitan forces that redistribute populations among neighborhoods and metropolitan-wide forces that alter the overall population composition of metropolitan areas. I examine the degree to which these two forces affected levels of poverty concentration within Miami, Florida, from 1980 to 1990. Both redistributive and compositional forces functioned to increase poverty concentration, although the impacts of these forces varied by race, class and ethnicity. In general, a racial/ethnic continuum existed in Miami, with poor African-Americans being the most spatially isolated of all poor groups. Poor Non-Hispanic whites were less exposed to poverty than all poor groups considered, while poor Hispanics exhibited intermediate levels of poverty isolation and exposure. Evidence suggest that the residential experiences of poor minorities is strongly impacted by the migratory behavior of the non-poor.

Selima Sultana, Will Mastin, Doug Dilworth, Nolan Smith, Allen Reed, Auburn University – Session 21

“THE LOVELIEST VILLAGE ON THE PLAIN”: AUBURN’S TRANSITION FROM COLLEGE TOWN TO INDUSTRIAL TOWN

Auburn, known as the loveliest village on the plains, has been growing at a faster rate than anticipated. According to 2000 census data, the city grew almost 30%, which is 11% more than the City Planning Commission estimated. The Planning Commission reports that there has been significant growth in all segments of the community during the 1990s. This paper seeks two answers: (i) why and how Auburn, a college town, is growing so fast in the last decade; and (ii) how the local Planning Commission is going to deal with this growth. It has been evident that though the city’s growth is closely tied to Auburn University, the recent growth is more toward an industrial town than to a university town. Findings also suggest that despite residents fear about urban sprawl, the city’s growth pattern is more toward sprawl in the last decade than the planning commission’s claimed of smart growth. To cope with this recent industrial growth without urban sprawl, the Planning Commission of Auburn City must strictly follow the smart growth pattern.

Lee Templeton, University of North Carolina at Greensboro – Session 1

GEOGRAPHY OF ZOO ATTENDANCE: THE ROLE OF SPECIES AND SPECIMENS

With the equivalent of almost one-half the population of the United States visiting zoos in 1999, understanding the geography of zoo visitation is critical. This study was undertaken to determine whether attendance at the fifty largest zoological parks (by numbers of visitors in 1999) in the United States is affected by the numbers of species and numbers of specimens housed at these zoos. The major conclusions are: 1) the diversity of the animals as measured by the numbers of species and specimens at the fifty largest zoos appears to affect the attendance at these zoos; 2) one-third of the visitor attendance is concentrated in just three states, Texas, California, and Ohio; 3) many of the zoos with large attendance also had large numbers of species, though some have a larger attendance than would be expected from their numbers of species or specimens; and 4) a correlation analysis of the data indicates that strong, positive associational relationships occur between visitor attendance at zoos and both numbers of species and specimens.

Rebecca Torres, East Carolina University – Session 3

APPLYING FORDIST -- POST-FORDIST PERSPECTIVES TO UNDERSTANDING TOURISM DEVELOPMENT IN CANCUN

Tourism scholars in recent years have noted a global paradigmatic shift from Fordist to more Post-Fordist modes of tourism production and consumption. This paper provides a brief review of transformations in global tourism production and consumption from a Fordist – post-Fordist perspective. Drawing on empirical data from a survey of 615 Yucatan Peninsula tourists and 60 Cancun hotels, this paper provides a contextual application of the Fordist – post-Fordist theoretical paradigm in understanding the nature of tourism production and consumption in Cancun and the surrounding region. Cancun is situated as a predominately Fordist mass tourism resort, however, analysis reveals that the region’s tourism landscape, which is experiencing processes of diversification, is in reality a complex combination of both Fordist and post-Fordist elements manifest in different ‘shades’ of mass tourism, neo-Fordism and “mass-customization.” The paper concludes that the Fordist – post-Fordist theoretical paradigm provides a useful analytical perspective from which to examine the changing nature of tourism production and consumption.

Thomas Tricot, Michael Lewis, University of North Carolina at Greensboro – **Session 24**
USING GIS TO PRIORITIZE LAND ACQUISITION IN A PIEDMONT NORTH CAROLINA WATERSHED

Using principles of Geographic Information Science (GIS) we developed a prioritization scheme for riparian land acquisition within the Mears Fork watershed, a sub-basin of the Cape Fear River basin. The North Carolina Clean Water Management Trust is considering portions of the riparian zone for acquisition. We built a database around 52 tax parcels entered by heads-up digitizing. The tax parcels were then overlain with a digital zoning district map. A stream buffer layer representing a zone extending back 300 feet on either side of each stream centerline was created. Artificial water bodies (sediment dams/ponds) and wetlands (beaver dams and swamp) were added using remote sensing and field verification. The criteria used to query the system of tax parcels were: (1) presence of a stream segment, (2) presence of a wetland or standing water body, (3) proportion of stream buffer in natural riparian vegetation (patch of trees/shrubs/herbs). The nine highest scoring parcels ranked in a list of the most desirable parcels.

A.V. Turkington, University of Kentucky, **B.J. Smith** and **P.A.M. Basheer**, Queens University of Belfast – **Session 7**

THE EFFECT OF CAVERN MORPHOLOGY ON SUBSURFACE TEMPERATURE AND MOISTURE CONDITIONS IN SANDSTONE

Confined test blocks of Hollington sandstone were exposed to direct heating by an infrared lamp within an open-topped cabinet. Temperature and moisture profiles were monitored as retreat of the test blocks at 1cm intervals created an extending shadow zone on the surface. Stone surface temperatures were reduced by block retreat, and subsurface thermal gradients did not extend so deep into the stone, but remained steep; high rates of surface temperature change were recorded under conditions of direct and indirect heating. High stone moisture content resulted in subdued surface temperature ranges and reduced depth of thermal gradients. The rate of moisture loss from subsurface layers decreased as the test block retreated into the shadow zone. Results suggest that stone decay in caverns may be promoted by microenvironmental conditions, particularly related to their morphology.

James A. Tyner, Kent State University – **Session 13**

EVERYDAY GEOGRAPHIES AND THE ARTISANS OF EDO

In recent years, many geographers, informed by social theory, have explored the significance of the everyday in their work. Through an incorporation of theorists such as Michel de Certeau and Judith Butler, geographers have contemplated the meanings of ordinary and mundane acts. Two centuries ago, during the Tokugawa period of Japan, many artisans of woodblock prints--*ukiyo-e*--were similarly struck by scenes of the ordinary. In this paper I am concerned not so much with providing an interpretation of these prints, nor to critically examine these as a visual recording of Japanese identity. The intent is not, therefore, to apply a European-based social theory to understand these prints, but rather to work in the opposite direction. The purpose of this paper is to draw insight from *ukiyo-e* to provide insight into geographic questions of everyday spatialities. Ultimately, I contend that a concern for empathy may be derived from these prints, and as such, provide insight into our scholarly and pedagogical endeavors.

Susan M. Walcott, Georgia State University – **Session 33**

HUMAN-ENVIRONMENT PATTERNS OF METROPOLITAN SPATIAL RESTRUCTURING: ATLANTA, GEORGIA AND SHANGHAI, PRC, 1950-2000

This paper compares the spatial and environmental impacts of rapid growth through the five decades in Atlanta, Georgia and Shanghai, PRC. Both metropolitan areas represent the prime demographic and economic engines of their respective regions, and exhibit some of the worst environmental degradation problems, though from significantly different sources. Atlanta

epitomizes spatial patterns of sprawl arising from an unfettered topographic and economic setting. Shanghai, in a political economy transitioning from decades of centralized constraint, seeks to spread out some of the world's densest core settlement population to its inner suburbs. Remotely sensed photographic images are utilized to classify land use changes, while census figures and environmental data are integrated in a Geographic Information System to correlate shifts through time.

Johnathan Walker, University of Illinois at Chicago – **Session 11**

THEORETICAL CONSIDERATIONS ON THE STATE AND LABOR IMPORT AND LABOR EXPORT TO TAIWAN

This research looks at the Taiwan labor import policy and the relationships between labor the exporting states of Indonesia, Thailand and the Philippines. Much of the migration literature and migration theory would suggest that the individual's role, either as an individual or as part of a migration network, is the most important subject of study. In viewing the actions of both labor importer and exporter states have been able to craft a more realistic picture of the structural facets of international labor migration. To support this I consider literature in international migration and globalization to view the migration of international contract workers. What is clear is that states are becoming more aggressive in their methods to attract foreign direct investment (FDI) by making finance/labor packages for producers (in Taiwan) and arranging for labor to be consumed (from Indonesia, Thailand, and the Philippines) globally. Evidence of the power of state officials in an effort to retain global competitiveness is the state is making structural changes – and in Taiwan even changing the social milieu to welcome expatriate workers – and the export states' desire to exploit expatriate labor for national gain.

Yong Wang, Scott Wade, East Carolina University – **Session 31**

USING DIGITAL SPATIAL DATA SETS TO STUDY THE IMPACT OF RESERVOIR CONSTRUCTION ON LOCAL ENVIRONMENT AND COMMUNITY

Digital spatial and demographic data sets have been used to study the impact of the Randleman Reservoir on the local environment and demography of Randolph and Guilford counties, N.C. At surface water heights of 682, 685, 706, and 709 ft. above the mean sea level, the reservoir's capacities were 25,053, 29,242, 92,654, and 106,654 acre-ft., and total surface areas (reservoir plus 200ft. erosion/pollution control buffers) were 3,081, 3,516, 7,403, and 8,233 acre, respectively. The capacities and total surface areas were lower than those reported in the environmental impact statement and published at the Piedmont Triad Regional Water Authority (PTRWA)'s Web page. These underestimations were attributed to the inaccurate representation of the digital elevation model (DEM) data used. After applying a 3 by 3 minimum spatial filter to the DEM data, the recomputed reservoir capacities and areal extents were very close to those reported and published as mentioned in the above. At the surface water heights of 682 and 706 ft., the recalculated capacities were 52,445 and 162,709 acre-ft., and the recomputed reservoir (only) areas were 2,958 and 7,035 acre, respectively.

Barney Warf, Florida State University – **Session 5**

THE KUNA INDIANS OF PANAMA: TRADITION CONFRONTS COMMODIFICATION ON THE SAN BLAS ISLANDS

Indigenous peoples worldwide face a tsunami of homogenization that threatens to obliterate traditional lifestyles, typically through the consumption of mass-produced commodities. This paper explores how globalization has manifested itself among one particular people, the Kuna Indians of Panama. First, this paper summarizes the origins of the Kuna and their conflicts with the Panamanian government. Second, it charts the traditional Kuna world, including their subsistence economic activities and cultural practices. It is based on both secondary sources and field visits to the San Blas Islands in which open-ended, informal interviews were conducted.

Third, it traces the multiple ways in which Kuna culture has been transformed as they have become steadily enveloped in commodity relations, including waged labor, trade, tourism, and their attending consequences. Despite tenacious attempts to preserve their cultural heritage, the Kuna illustrate the tendency toward cultural homogenization that is currently annihilating tribal cultures rapidly around the world.

Jingyu Wang, Scott A. Lecce, East Carolina University – Session P1

SUSPENDED SEDIMENT TRANSPORT IN AGRICULTURAL DRAINAGE DITCHES ON THE COASTAL PLAIN OF NORTH CAROLINA

Although the Coastal Plain of North Carolina has long been considered a slowly eroding landscape, recent research suggests that soil erosion may be more significant than previously believed. Nevertheless, little is known about the transport, storage, and ultimate fate of the eroded soil. The purpose of this research is to provide quantitative estimates of suspended sediment transport in a small, coastal plain watershed near Littlefield, North Carolina. Suspended sediment concentrations were determined on three ditches during flooding produced by Tropical Storm Allison, June 14-16, 2001. Maximum concentrations were an order of magnitude greater than those recorded on the lower Tar River at the peak of flooding produced by Hurricane Floyd in 1999. Peak concentrations occurred on the rising limb of the storm hydrograph and were as much as five times higher than those during the flood peak.

Ronald W. Ward, University of Georgia – Session 14

BIOGEOMORPHIC EFFECTS OF LIGUSTRUM SINENSE (PRIVET) INVASION ON THE OCONEE RIVER FLOODPLAIN, NORTH GEORGIA

Species invasions are a component of accelerating global change, but few studies document specific effects of invasive species on native ecosystems. *Ligustrum sinense* (privet), an ornamental shrub, escapes cultivation and invades Southeastern floodplains. Our proposed research will investigate documented effects of *Ligustrum sinense* (privet) invasion on floodplain forest structure and composition, and invasion-geomorphology rates of average annual floodplain sedimentation relationships along the Oconee River in Piedmont Georgia. We used sampling transects on invaded and non invaded floodplains to collect vegetation and geomorphologic data. We then compared data among sites to identify conditions associated with privet invasion, and to determine invasive effects on regeneration of native floodplain trees. Regression analysis indicates two geomorphologic variables, water table depth and percent silt, account for 53% of variation in privet density in invaded sites. Regression models using geomorphologic and privet variables to explain native tree regeneration indicate greater reproductive success among trees in non invaded areas. Ordination analysis indicates similar compositions of mature forest among sites and fluvial landforms, but different sapling compositions in invaded and non invaded areas. Data associating privet density to geomorphologic factors helps assess which floodplain settings are prone to privet establishment. Similarly, documentation of changes in native forests with privet invasions forecasts the fate of forests experiencing establishment of this exotic shrub.

Joe Weber, University of Alabama – Session 21

EVALUATING THE EFFECTS OF SCALE ON INDIVIDUAL ACCESSIBILITY: A MULTILEVEL APPROACH

The intraurban accessibility of individuals has long been an important topic, but the relationships between individual accessibility and scale have not been fully addressed by multi-scale approaches using conventional proximity-based accessibility measures. The use of space-time measures of accessibility overcomes some of these limitations by allowing individual's daily travel and activity patterns, as well as characteristics such as gender, race, and age, to define their intraurban accessibility. Additionally, because of the difficulty of distinguishing scale effects

from socioeconomic variations with conventional statistical methods, the mediating influence of location at different scales has been evaluated in Portland, Oregon using both single level multivariate regression as well as multilevel modeling techniques. These relationships were examined across a range of spatial scales within Portland, but no significant scale variations in accessibility relationships were found. These scale-independent results are in striking contrast with common expectations about accessibility, leading to the conclusions that many statements about cities and human behavior are of limited usefulness in describing or explaining accessibility patterns. They also reveal that space-time measures are independent of the spatial frames used, and this framelessness in turn suggests that the Modifiable Areal Unit Problem is not a problem for accessibility analysis.

James O. Wheeler, University of Georgia, **Stanley D. Brunn**, University of Kentucky – **Session 6**

AN URBAN GEOGRAPHER BEFORE HIS TIME: C. WARREN THORNTHWAITES 1930 DOCTORAL DISSERTATION

In 1930, a time when human geography was not considered to be among the emerging analytic social sciences and when urban geography barely existed as an identifiable subfield, C. Warren Thornthwaite, later a gargantuan figure in American climatology, was awarded a doctorate under Carl O. Sauer at the University of California, Berkeley. In his dissertation, *Louisville, Kentucky: A Study in Urban Geography*, Thornthwaite analyzed land-use zonation, commercial strip development, daytime-nighttime populations, community formation, elevation and land values, functional regions and cultural areas, spatial competition and optimal location, buying power, and Black residential distributions. Thornthwaite's urban geography was centered unmistakably in the spatial tradition, and his innovative research - based on aerial photographs, intensive field observations, city directories, and detailed mapping - treated concepts that were to become central to urban geography as it developed in the late 1950s and the 1960s. Urban geography, however, evolved independently of Thornthwaite's contributions. Thornthwaite directed no graduate students, and his unpublished dissertation was not cited until a perfunctory reference in 1954. A second citation, not appearing until almost 30 years later, described it as "a major syntheses." Thornthwaite's dissertation was not only an anomaly in the career of its author but also an anachronism in the history of urban geography.

Stephen White, East Carolina University – **Session 12**

LASER ALTIMETRY FOR THE INVESTIGATION OF CHANGE IN A PORTION OF THE NORTH CAROLINA COASTLINE

The North Carolina coast like other developed coastlines is experiencing an influx of people and increase in development. The increase in growth with the constant struggle against the natural processes that affect a barrier island's morphology emphasizes the need to provide a better understanding of the changes that might be occurring. This research presents a method and volumetric analysis results for monitoring of the beachfront for a portion of the North Carolina coastline located between Masonboro Island at the southern extent and Topsail Island at the northern extent. Light Detection and Ranging (LIDAR) provides the possibility to capture highly spatially accurate topographic data that may be used for volumetric analysis of the coastline's ever-changing morphology. Volumetric parameters from this study will be used in examining, comparing, and contrasting delineations of coastline characterized as developed versus undeveloped.

Sharon Wilcox, Defenders of Wildlife, Washington, DC – **Session 29**

THE GARIFUNA OF BELIZE: HOLIDAY CELEBRATION AND STRATEGIES OF REPRESENTATION

Settlement Day, a Belizean national holiday, celebrates the history and culture of the Garifuna people. The Garifuna are a self-proclaimed indigenous people united by this ethnic identity and a common history. Located along the Caribbean shores of Belize, Guatemala, Honduras, and Nicaragua, the Garifuna trace their cultural roots to the Caribbean island of St. Vincent. Today, internal and external challenges continue to threaten the well being of this community, but its leadership strives to remind people of a collective heritage. After Belize achieved independence in 1981, the Garifuna struggled to interpret their identity within rapidly changing local and national social, economic, and political conditions. The process of decolonization frequently coincides with the building of a nation through the integration of several racial and ethnic groups. Attempting to negotiate an identity within these conditions, the Garifuna leadership has turned to representation as a method for asserting this restructured identity in the local community and throughout the world. The leadership uses this representation as a method for securing social, economic, and political strength for the Garifuna of Belize.

Wendy Wolford, University of North Carolina at Chapel Hill – **Session 20**

WHEN MEMORIES MEET THEIR MAKERS (OR, WHEN THE “OTHER” CAN READ): REFLECTIONS ON RETURNING ETHNOGRAPHY TO THE FIELD

“But if God is gone and man is no longer the master, then who is the master? The planet is moving through the void without any master. There it is, the unbearable lightness of being.” (Milan Kundera, 1988, p. 41, quoted in Vidich and Lyman 1998, p.45). Memories are made and re-made at multiple moments during the research process. Understanding those moments provides insight into the final product – the written text. In this paper, I discuss the making of memories during my work with members of a Brazilian social movement – The Movement of Rural Landless Workers (MST). MST was formed in 1985 as an expression of the tension over inequitable land ownership and has grown to become the largest grassroots social movement in Brazilian history. People who join the movement leave behind familiar lives to participate in a radical organization whose members are labeled as criminals, vagabonds, and simple-minded dupes. Their memories of this process are politically and emotionally charged in ways that make *how* they remember as important as *what* they remember. In looking back over the process of conducting field research, I found five key moments that shaped my perception of the memories I collected. The five moments were dominated by unique actors and interests, none of whom/which could usefully be considered authoritative or objective, but all of whom/which shaped my on-going representation of “the field.” In the final moment, returning the memories to their makers was critical in exposing the different actors and interests.

Honglin Xiao, George A. Brook, University of Georgia – **Session 7**

CLIMATE AND HUMAN ACTIVITY RECORD IN A STALAGMITE FROM GUIZHOU, CHINA

An active stalagmite from Yanzhipo Cave, 30 km southwest of Guiyang, China, was cut into two halves along its growth axis. Thin section analysis revealed 144 annual layers in the upper 4.6 cm of the stalagmite. The layers could be identified by detrital grains at the top of each layer. Thin section studies also showed that the basal part of the formation is predominantly aragonite while the upper, darker section is largely calcite. As aragonite is usually associated with drier conditions, areas of calcite in the stalagmite suggest times of increased rainfall. The dark color of the calcite may be further evidence of increased rainfall and the rapid leaching of humic acids from the soil by heavy rains at the time of calcite precipitation. The white color of the aragonite indicates a lack of humic acids in these deposits although fulvic acids, which are colorless, may be present. Four hiatuses at 4.7, 5.0, 8.2 and 10.7 cm from the top are suggested by dense calcite

deposits above eroded aragonite. Pb^{210} analysis and annual layer counts in the upper part of the stalagmite indicate deposition at about 0.32mm/yr during about the last 150 years. TIMS U-series and AMS radiocarbon ages indicate that the growth hiatuses occurred at about 1570, 3273, ca 5000 and 7300 years ago. $\delta^{13}C$ and $\delta^{18}O$ data from the stalagmite suggest that the East Asian Summer monsoon was strong at about 8500 to 7700 years and Guizhou experienced a dry and/or warm climate, which may correlate with the worldwide “hyperthermal period,” which in most of north China occurred at ca. 10000-7000 years ago. From 7300 to 4300 years ago the East Asian summer monsoon became stronger and Guizhou experienced drier and cooler conditions. After ca. 4300 years ago, the East Asian summer monsoon weakened and Guizhou’s climate became wetter and/or cooler. Interestingly, growth of the stalagmite about 150 years ago, after a long hiatus, corresponds well with the end of the “Little Ice Age” and a farmer rebellion around AD1850. Also, beginning around AD 1962 there is evidence of reduced humic acid in the calcite of the Yangzhipo stalagmite (making the color much whiter). This corresponds remarkably well with the period in China known as the “Big Leap” beginning in 1957.

Robert A. Yarbrough, University of Georgia – **Session 1**

VARIATIONS IN THE EFFECT OF WOMEN’S EDUCATION ON FERTILITY: A CASE STUDY OF GUATEMALA

Over and over again, empirical studies show that increasing female education exhibits a downward effect on a woman’s fertility. Yet, the literature suggests that a number of factors including contraceptive use, occupation, decision-making power within the household, access to resources, and place of residence mediate the effect of education on fertility. A micro-scale case study of Guatemala evinces how this education-fertility association varies when one accounts for geographic contingencies within a developing country, specifically measuring the conditional effects of one’s place of residence as either urban or rural. Analyzing fertility data for Guatemala from the 1995 *Demographic and Health Survey*, this paper examines the contingent effects of geographic setting and ethnicity on the education-fertility relationship. After articulating a simple model for the education-fertility relationship, the parameters are tested for contextual drift using Casseti’s Expansion Method (1972). Results demonstrate that: (1) The education-fertility relationship in Guatemala is non-linear with an initial downward slope, (2) Ladino and Mayan groups exhibit differing patterns of fertility, as do rural and urban dwellers, and (3) Ethnic and spatial contingencies impact this relationship at a ninety-percent confidence level. Overall, this analysis draws attention to the complex effects of location and other contingencies on the well-known education-fertility relationship.

David Zurick, Richard Sambrook, Eastern Kentucky University – **Session 10**

VIRTUAL TOURISM IN APPALACHIA

Development plans of many counties and municipalities in Appalachia include tourism as a proposed economic driver. The types of tourism promoted capitalize on the distinctive geographic qualities of Appalachia and include ecotourism, based upon the scenic value of the mountains, heritage tourism, drawing upon the region’s cultural traditions, and various forms of mass tourism that target thematic destinations built for specific purposes. In this paper we examine the tourism plans in a four-county region in the Kentucky foothills targeted for a heritage-based driving and cyberspace tour. The region is especially noted for its artisans and handicrafts, which are key elements in the proposed tourism plan. The driving tour project assumes that people will spend money on handicrafts and services when they visit the area. Unique to this project, though, is the assumption that people will also purchase handicrafts without actually visiting the region except via an automated driving tour accessible through the Internet. This paper addresses cyber-based tourism in Appalachia by exploring its efficacy in promoting economic development, its potential for mediating media-induced regional stereotypes, and its broader role in the formation of a fledgling tourism region.