

ABSTRACTS

Anderson, Chris, Florida Fish and Wildlife Research Institute, St. Petersburg
GIS Use in Disaster Response – Experiences from Oil Spill Drills and Hurricane Katrina

Since 1991, the Fish and Wildlife Research Institute (FWRI) has provided GIS support to the Bureau of Emergency Response (BER) in order to protect Florida's resources in the case of an oil spill. FWRI and BER work regularly with NOAA's Office of Response and Restoration (OR&R), the US Coast Guard, and oil companies to make sure the most up-to-date information is available responders in a spill event. Spill drills are one way for all parties to come together and test whether they are prepared to respond to a spill. The drills involve all aspects of a spill response; a command center is set-up, data are collected from the field and in some cases, clean-up equipment are deployed to the spill area. FWRI attends three to four drills a year. Immediately after Hurricane Katrina struck the Mississippi/Louisiana Gulf coasts, FWRI was asked by OR&R to provide GIS support for NOAA's hurricane response in coastal Alabama and Mississippi. OR&R was familiar with FWRI's GIS capabilities because of their work with oil spills response. As a result, FWRI spent two weeks in Mobile, Alabama, providing GIS support for NOAA, the US Coast Guard and EPA. This talk will discuss how GIS has been used at various oil spill drills and in response to Hurricane Katrina.

(Category: Professional)

Berger, Joshua, Department of Geography, University of Florida
Wright, Jordan, Department of Geography, University of Florida
Estimation of Spatial Variability of Mean Monthly Precipitation within the Tiribí Basin, Costa Rica

Knowledge of available water resources is crucial, but often limited, in many developing countries. A simple, yet physically meaningful, technique is used to maximize the benefit of the available precipitation records in the Tiribí basin, which supplies much of the freshwater to the capital, San José. A gridded precipitation data bases is developed for monthly precipitation within the basin at a resolution of about 1km². Given the dependency of precipitation on elevation, a DEM is employed at the same resolution. Precipitation data are available at 15 stations in and around the Tiribí between 1940 and 1990. Linear regression is used to establish the changing monthly relationship between elevation and precipitation. Percentage errors in estimation of mean monthly precipitation at the 6 calibration stations within the basin, range seasonally and between stations. Statistical tests of the performance of the procedure applied to 4 validation stations not used in calibrating the model, revealed unacceptable performance in only about 5% of the months. This area shows a strong dependence of monthly precipitation on El Niño/Southern Oscillation, which is

reflected in the coefficients derived from similar techniques to provide approximate measures of interannual variability about the mean regime. The efficacy of the methodology is illustrated in its application to 5 ungauged sub-basins in differing physical environments within the Tiribí, which imply the potential for the technique in other mountainous areas of the developing world. (Category: Undergraduate Students)

Bezdecny, Kris, Department of Geography and the Center for Urban Transportation Research, University of South Florida
Exploring the Localized Impacts of Tourism in Central Florida

This paper will examine the impacts of tourism within the Orlando, Florida region, particularly before and during the recent recession. While theme parks would experience record-shattering attendance numbers during this period, the polarization of service workers and other vulnerable populations would continue, as they had for the past three decades. In particular, the relationship between the overall economic vitality of the tourism industry during this period, and the impacts of economic downturns upon service workers and other vulnerable local populations, will be explored. The paradoxical relationship between the increased visibility of the tourism industry simultaneously with the decreased visibility of the local participants will also be evaluated, as well as what these relationships mean to the changing physical and socioeconomic spaces in Orlando. (Category: Graduate Student)

Bolden, Gabriel, Department of Geography, University of Florida
Samson, Chris, Department of Geography, University of Florida
Market Analysis for New Student Housing at the University of Florida

The University of Florida is one of the fastest growing Universities in the nation. With this increase in student population we were able to determine that there was a substantial need for new student housing in Gainesville. Using different GIS software we were able to geocode the incoming student population as well as the existing student population. Using this information we were able to come up with viable solutions to the housing problem that faces Gainesville in the immediate future.

(Category: Gabriel Graduate Student Chris Undergraduate Student)

Booker, Alan S. Graduate Student, Department of Geography, University of South Florida – Tampa BCI Engineers & Scientists, Inc.
Modeling the 100-Year Flood Using ICPR: A Flood Analysis in the Avon Park Watershed

Using hydraulic modeling software and GIS (Geographic Information Systems), the Avon Park watershed, located in Central Florida, was modeled and the 100-year flood, 5 day and 24 hours events were delineated. A detail and rigorous

modeling approach was undertaken to study the watershed and an extensive spatial database was developed to store the data. This analysis combined GIS and the Interconnected Channel and Pond Routing (ICPR) model version 3.02 to develop a hydraulic model that assigned regulatory flood elevation within the watershed. During the time of the study, hurricane Jeanne struck Central Florida. The Southwest Florida Water management District (SWFWMD) collected daily rainfall and lake stage data in the area, hence the model was verified and validated. The availability the rainfall distribution added a degree of confidence to the analysis because it offered the unique chance to further calibrate the model. The model results were utilized to delineate the 100-year flood in the GIS. The modeled 100-year flood indicates that the municipality's airport would be inundated and several parts of the city would be flooded as well. The flood depth reached a little over 9 feet in some areas. It was also determined that 56 structures would be inundated with a foot or more of floodwater. In the end, implementing and improving flood mitigation plans could minimize the areas inundated within the watershed. (Category: Graduate Student)

Boswell, Thomas D., Department of Geography and Regional Studies,
University of Miami

Decomposing the African American Population of Metropolitan Miami

It has been common to refer to the United States African American population as though it was a monolithic group, even though it is well-known that important differences exist within this minority. When the characteristics of American Blacks are described in most studies averages are used. The obvious problem with using averages is that they mask important differences (as they do with almost all large groups of people). In 2005, the author of this paper was commissioned by Miami-Dade County's Black Advisory Board to produce a profile of Miami's African American population. It quickly became apparent that there were really several different populations of Blacks living in metropolitan Miami. With these differences in mind, it was decided to investigate the socioeconomic characteristics of Miami-Dade's African Americans as though they were several populations. To accomplish this, we compared the total Black population to the County's Hispanics and Non-Hispanic Whites, but we also decomposed the Black population into its foreign born and U.S. born components and into its below poverty and above poverty constituents. We also compared metropolitan Miami's Blacks to those living in the state of Florida and those in the United States.

Bradley, B. Kevin, Department of Environmental Studies, University of West Florida

Boat Wake Attenuation Through Seagrass

Santa Rosa Sound is a microtidal back-barrier lagoon separated from the Gulf of Mexico to the south by Santa Rosa Island. Recent tropical cyclones have had a significant impact upon the geometry of the island, relocating large amounts of sediment to the lee-side of the island through overwash. The combined occurrences of winter cold fronts and high boat traffic on the Intracoastal Waterway provide a wave climate capable of activating back-barrier sediment and contributing to island erosion. Two species of submerged aquatic vegetation (SAV), the seagrasses *Halodule wrightii* and *Thalassia testudinum* represent the primary physical barrier between sound-side waves and Santa Rosa Island. In general, the ability of SAV to attenuate wave and current energy varies with plant morphology, local geography and meteorological conditions. In order to quantify the attenuation of boat wake energy by SAV, four wave and tide recorders were deployed in a linear transect through a seagrass bed and a 17' marine vessel was used to generate wakes of varying magnitudes. Results suggest that maximum wave heights decay exponentially as the wakes progressed through the seagrass. The decay rates are used to calculate the attenuation coefficients and drag coefficients for the seagrass.

(Category: Graduate Student)

Brown, Andrea, Graduate Student, Department of Geography, University of Florida, Land Use and Environmental Change Institute (LUECI)

Land-Cover Change in Three Watershed Basins in Siem Reap, Cambodia

This study is one component of a larger NSF funded project entitled *Economic Growth, Social Inequality, and Environmental Change in Thailand and Cambodia*. Focusing on Cambodia, Landsat imagery is used to analyze land cover changes for three watersheds in Siem Reap province from February 1989 through February 2005. The time period of the study correlates to the emergence of Cambodia as its own capitalist state. Siem Reap province is one of the most rapidly changing areas in Cambodia due to continued population growth, increasing deforestation due to logging, and conversion of shifting cultivation to permanent agriculture. Upland areas of the three watersheds that encompass the region (Siem Reap, Puok, and Roluos) delineate an area experiencing major land cover change. These changes in land cover directly influence the predominantly agricultural floodplains through increased erosion, loss of habitat, and decreased biodiversity. To analyze the extent of the land cover change, I used Landsat TM and ETM+ imagery to classify the watershed basins. Six land cover classes were chosen for further investigation using spectral separability techniques and relevance of major land cover changes in the basins. A change trajectory was performed to assess the amount of change between four years (1989, 1995, 2002,

and 2005) as well as a beginning and end assessment of total land cover change between 1989 and 2005. Results suggest deforestation rates are increasing throughout the upland portion of the basins. The increase in cleared lands relates to socio-economic changes that directly influence land cover changes throughout the country. (Category: Graduate Student)

Caravelis, Mary, Department of History and Political Science, Barry University
Black Beans and Rice with Feta Cheese: The Transculturation of Greek Ethnic Cuisine in South Florida and Beyond

Ethnic cuisines, like ethnic cultures are undergoing many changes in the midst of our multi-ethnic environment. Ethnic foods are mirroring the merging and converging of cultures that create the conditions for transculturation. This phenomenon is most evident in the urban environment of South Florida. This paper explores the ways in which Greek ethnic cuisine is changing and adapting to this unique setting while influencing the other ethnic cuisines of the region in return. (Category: Faculty)

Coley, David, Department of Geography, University of Florida
Mossa, Joann, Department of Geography, University of Florida
Rasmussen, Jim, Department of Geography, University of Florida
Instream and Floodplain Mining along the Bowie River, Mississippi: Impacts, Quantities and Uncertainties

The Bowie River in southern Mississippi has been altered by floodplain sand and gravel mining, but perhaps more so by historical in-channel mining that began in the 1940s and ended in 1995. On topographic maps, portions of the channel are several times wider than other portions such that the channel resembles a chain of lakes. This form is due to mining along the channel perimeter in selected reaches plus some avulsions into floodplain pits. This study evaluates how the river was altered and estimates minimum quantities of material removed using both historical and field data. The mined reaches have widths and depths up to 574m and 16.8m in comparison with unmined reaches where widths and depths average 38m and 1.4m. Cross-sectional areas were up to 120 times larger in mined than unmined sections. Statistical analyses were performed to evaluate differences between cross sections in different reaches and volumetric analyses were applied to estimate channel extraction from the channel perimeter. Contributions include better understanding of impacts of instream and floodplain mining and developing field methods for deriving minimum estimates of material extracted.

(Category: Faculty)

Daniels, Amy Graduate Student, Department of Geography, University of Florida

The Imprint of Milpa Agriculture on Dry Tropical Forest of the Yucatan Peninsula, Mexico

Over time, traditional Yucatec agriculture, or *milpa*, creates a heterogenous landscape of cultivated patches and varying stages of forest succession. Edges created by *milpa* clearings have different ecological and cultural functions than the background forest matrix. Area, density and relation of *milpa* patches to landscape context is examined over time. Field-based and remotely-sensed measurements were used to test the hypothesis that reduced fallow times seen in recent generations has transformed the matrix into “edgey” forest where there is no difference between forest structure adjacent to *milpa* clearings and that of the matrix. Finally, edge effects from *milpa* were compared to other potential drivers of forest structure change to better determine its landscape significance. Clearing size was found to be constant over time, likely related to labor or biophysical constraints (e.g., flat arable areas). Total *milpa* edge increased over time, however, suggesting that clearings became increasingly linear, possibly influenced by road development. Field-based measurements indicated that the *milpa* “edge effect” disappeared over time as the entire forest matrix became “edgey”. The spatially-aggregated remote sensing measurements, in the form of 30 x 30 m pixel vegetation indices, however, indicated that forest at clearing edges is still, on average, scrubbier than the background matrix. *Milpa* edge was determined to be the most significant landscape variable in explaining variance in forest structure indices. These findings underscore the importance of considering traditional land management practices in regional forest management strategies, particularly in light of potential changes in land tenure systems in the region. (Category: Graduate Student)

Day IV, Irving M., Environmental Science, Florida Atlantic University

Determining Vegetative Biogeography, Complexity, Biodiversity and Species Richness on Tree Islands of the Northern Everglades

The loss of species richness and vegetative biodiversity in the Greater Everglades Area (GEA) is in large part due to human encroachment and compartmentalization causing altered hydroperiods, water levels and surface sheet flow. The purpose of this study is to quantify species richness on four (4) tree islands within a pristine area of the historical North Everglades ecosystem. Eight (8) Modified Whittaker Plots (MWP) will be used along with multiple sampling techniques, which are well suited toward studying the biogeography of the unique, nonconforming tree islands of Grassy Waters Nature Preserve. Analysis of vegetative biodiversity is calculated by calculating Simpson’s Diversity Index (SDI), along with formulating a complexity index (CI); the CI is acquired by assessing basal area (G), average canopy height and structure (H),

number of species (Sp), and the density of stems (D) within each MWP, each island, and the study area as a whole. Data is to be used as a baseline study for future studies in the preserve, and will be used in conjunction with other species richness and biogeography studies being conducted by federal, state and local agencies, and against which to test and track the effects of the Comprehensive Everglades Restoration Plan (CERP).

(Category: Graduate Student)

Edwards, Jeremy, Department of Geography, University of South Florida

There and Back Again: From the World to the World Wide Web

One of the most important properties of digital mapping is the dynamic image, a restriction that cannot be overcome by the printed image. By creating export images in a Macromedia's Flash Movie Format (.swf), *Flash* elements are able to be coupled with GIS (Geographic Information System) data. Many presentation properties can be quickly and easily manipulated to convey the cartographic message in a manner not heretofore possible. Flash's main advantages are the smaller vector file sizes that do not degrade in quality when resizing, a serious problem with its .jpg counterpart, and the interactivity that can be used to connect any place (on the map) with any data source, be it a table, another web page, a movie, a sound, or anything that can be placed in a data set or the World Wide Web. Flash is able to display information from ArcGIS by simply copying and pasting. Thematic maps and individual elements can be scripted to turn on and off the same way that they are in ArcGIS. The dynamic information can be placed on the web and emulate some of the properties of the ArcIMS platform with much less cost or required re-education. This presentation will focus on these elements and how to build a website quickly that can display geographic information. (Category: Graduate Student)

Fik, Timothy, Department of Geography, University of Florida

Sidman, Charles, Florida Sea Grant, University of Florida

Swett, Robert, Florida Sea Grant, University of Florida

Sargent, Bill, FWC's Florida Wildlife Research Institute, St. Petersburg

A Characterization and Analysis of Recreational Boaters in Charlotte Harbor

This presentation highlights the statistical results of a mail survey of boaters who recreate in the Greater Charlotte Harbor region (Charlotte and Lee County waterways). The analysis focuses on sub-groups of boaters that launch from four specific departure categories: Marina Wet Slips, Marina Dry Storage facilities, Public Ramps, and Private Docks. Vessel and boat trailer registration numbers collected at area marinas and boat ramps were used to obtain names and mailing addresses of observed marina and ramp users from the State's Vessel Title Registration System (VTRS). Names and mailing addresses for waterfront parcel owners were obtained from County Tax Records and compared to the VTRS to

identify waterfront parcel owners that owned a boat. A map-based questionnaire was mailed to a random sample of 6,944 area boaters. Survey respondents provided information on their last two recreational boating trips (locations and routes), identified favorite boating destinations, and activities that they engaged in during a typical boating trip. Additional data were obtained on use preferences and patterns, selection criterion for trip departure sites, favorite activities, vessel types, and trip frequency. A content analysis also identified important issues and needs within this boating community. Information obtained from this study is useful for coastal management and planning applications and for developing map-based products intended to improve the recreational boating experience and resource stewardship. (Category: Faculty)

Gauron, Laura C., Department of Geography, University of South Florida

Raabe, Ellen A., U.S. Geological Survey, St. Petersburg, FL

Mapping Saltgrass as Habitat for the Florida Salt Marsh Vole

Hyperspectral imagery and field reconnaissance were combined to map potential habitat sites of the Florida salt marsh vole on the Gulf Coast of Florida. The vole is known from two Levy County coastal sites dominated by saltgrass (*Distichlis spicata*). Saltgrass sites were field-identified under a range of environmental conditions. Saltgrass co-occurred with several other plant species, including three-square sedge, smooth cordgrass, black needlerush, and glasswort. Hyperspectral imagery acquired in 2002 for the Lower Suwannee River and estuary was re-evaluated for saltgrass habitat. Potential sites derived from the imagery were checked against field-identified locations. Image-derived saltgrass mapping successfully captured 62% of the known field sites. Positive identification of saltgrass from the imagery was hindered by the opportunistic nature of the species. The combination of field-verified and image-derived sites was provided to Lower Suwannee National Wildlife Refuge personnel for use in recovery and protection of the vole. This effort highlights the potential to enhance understanding and management of Florida habitats through a combination of traditional methods and modern technology. (Category: Undergraduate Student)

Gebelein, Jennifer, Department of International Relations and Geography,
Florida International University

Changing Trends in the Cuban Landscape: 1950-present

Many social factors define a country's physical characteristics. These physical manifestations can be derived from political relations with other nations, population distribution, influx of foreign investment and economic dependence on various crops, for example. Cuba's original landscape at the time of European contact was largely forest, since harvested and converted to various types of farmland and pastureland with very little forested area remaining. The geography of the Cuban landscape is and has been tightly linked with its political relationships and economic dependence on other nations. This important connection is discussed through analysis of several case studies

including the United States Embargo and the collapse of the Soviet Union. In addition to landscape change driven by agricultural influences, urban expansion and tourism are also increasingly impacting Cuba's natural features. Here, Cuba's relationship with the United States, the Soviet Union and other nations is analyzed with respect to its changing landscape from 1950 to the present day. (Category: Faculty)

Gibbs, Cerian, Department of Geography, University of Florida

Assessment of Land Cover Change and Conservation Effectiveness in Trinidad.

Measuring success of conservation projects is difficult, yet it is essential to good management. This study utilizes Landsat TM imagery to detect land cover changes within two protected wetland areas from 1982-2002 in Trinidad. Relating land cover changes in protected areas to the changes in management is essential to determining the effectiveness of protected areas. The study area includes Nariva and Caroni swamps. Nariva swamp includes 6,234 ha and consists of distinct zones of palm swamp, swamp forest, herbaceous swamp and mangrove. Caroni swamp is dominated by mangrove forests and is the largest brackish water ecosystem in the country. Change detection was performed using land cover trajectories, and then also using the two techniques best able to differentiate across known land cover types: differencing of the normalized difference vegetation index (NDVI) and differencing of the tasseled cap transformation of the Landsat images. Discriminant analysis identified NDVI and tasseled cap as containing the most significant information regarding Trinidad's land covers. More change in vegetation was detected in Nariva swamp over the thirty year time period, while the effect of anthropogenic activity on Caroni swamp may not yet be detectable or may not be detectable using Landsat TM imagery. This method of change detection could be used as a tool for monitoring changes in protected areas and ensuring appropriate management of such areas as it goes beyond a simple land cover analysis, and attempts to determine within cover changes at a finer, within-class, scale, e.g., thinning, degradation, or regrowth within classes. (Category: Graduate Student)

Goldman, Abe, Department of Geography, University of Florida

Hartter, Joel, Department of Geography, University of Florida

Southworth, Jane, Department of Geography, University of Florida

Binford, Michael, Department of Geography, University of Florida

"Superpixels" on the Landscape Meso-scale sampling to study livelihoods, land use, land cover, and biodiversity around Kibale National Park, Uganda

Devising and using a common geographic sampling frame for interdisciplinary research presents numerous challenges. A group of geographers, biologists, and anthropologists working in Uganda and Tanzania have begun using a random geographic sample of nine-hectare "superpixels" as the basis for studying the

impacts of parks in East Africa on the people and landscapes surrounding them. Kibale National Park in western Uganda is one of the two main parks studied. A sample of 95 superpixels has been selected in two research areas within 5 km of the park boundaries. These superpixel units are the basis for identifying farmers for interviews; monitoring agricultural, extractive, and other land use over time; biological sampling of key indicator taxa; and some of the land cover change analysis. The superpixels themselves represent a meso-scale sample of land units that can provide useful information at an intermediate level between the household scale commonly used by social scientists and the “whole landscape” scale used in analysis of satellite imagery. This paper reviews the methods, benefits, and limitations of the superpixel sampling technique and presents initial data on land use, livelihood conditions, and farm-level risks derived from a meso-scale analysis based on the superpixel sample. (Category: Faculty, Joel Hartter-Graduate Student)

Hamilton, Stuart, Department of Environmental Studies, University of West Florida

Utilizing LIDAR to map and interpret post-hurricane barrier island morphology

LIDAR derived elevation data is an established technology for accurate topographic mapping. As access to LIDAR data increases and Geographic Information Systems are designed to better manipulate LIDAR data, the potential for rapid analyses of coastal change after major storm events increases. Traditional topographic or bathymetric surveys can take many hundreds of man hours to complete and temporal data relating to an individual storm event is rarely available. Hence, traditional coastal survey methods are being replaced by LIDAR surveys. The USGS Center for Coastal Geology flies coastal environments with NASA's Airborne Topographic Mapper (ATM) pre-hurricane and post-hurricane. This paper examines the use of USGS ATM data in mapping coastal change before and after Hurricanes' Ivan and Dennis. Using Santa Rosa Island as a case study, this paper examines the potential of identifying hurricane washovers, dune erosion, structural damage, and volumetric change within a GIS environment. The potential of using ATM data for vegetation analyses, shoreline change, and bathymetric mapping is also addressed. The use of LIDAR data as opposed to traditional mapping methods is also examined, as well as potential future areas of coastal research. (Category: Faculty)

Joel Hartter^{1,2*}, Abe Goldman¹, Michael Binford^{1,2}, Colin Chapman³

Lauren Chapman⁴, Jane Southworth^{1,2}

¹Department of Geography, University of Florida, 3141 Turlington Hall, Gainesville, FL 32611

²Land Use and Environmental Change Institute, University of Florida, 241 Williamson Hall, Gainesville, FL 32611

³Department of Anthropology and McGill School of Environment, McGill University, Montreal, Quebec, Canada, H3A 2T7

⁴Biology Department, McGill University, 1205 Avenue Docteur Penfield Montreal, Quebec, Canada, H3A 1B1

*Corresponding author's email: jhartter@ufl.edu

Services and Hazards of Wetlands and Forest Patches For Communities Around Kibale National Park, Uganda

The establishment of protected areas can have long term impacts on the land use and livelihoods of people living near the parks. Rapid population growth, high population density, and intensive agriculture characterize the landscape surrounding Kibale National Park in western Uganda. Although the park itself is completely surrounded by agricultural land, a network of forest patches, papyrus swamps and other wetland areas is scattered throughout the agricultural landscape. These are important resources for local people as well as biodiversity habitats that harbor many wild plant and animal species. They are also, however, sources of hazard for local farmers, since crop raids by primates, elephants, and birds seem to emanate from these natural fragments. In addition, there has been extensive conversion of wetlands to grazing or cropland, as well as increasing extraction of fuel wood, charcoal, and other resources from forest patches, all of which are diminishing their area and ecological integrity. This paper examines the dual character of these natural areas within the agricultural landscape around Kibale NP in terms of the environmental services and hazards they represent to local households that vary in wealth and location. It also discusses the impacts of the decline of this resource base at the household and the larger scale landscape levels.

(Category: Graduate Student)

Hobbs, Chasidy, Department of Environmental Studies, University of West Florida

Morphological Response of a Created Salt Marsh

Project Greenshores is one of the largest ecosystem rehabilitation projects in northwest Florida and involves the establishment of an oyster reef and salt marsh within Pensacola Bay, Pensacola, Florida. When phase I (completed 2003) of the project began in the winter of 2000, the shoreline, and adjacent sub-littoral zone was comprised of bare sand with no emergent or aquatic vegetation. Eight acres of salt marsh and seagrass beds, consisting of 35,000 cubic yards of dredged sand, 40,000 *Spartina alterniflora* and 3,900 locally propagated seedlings of *Ruppia maritima*, were used to construct five inter-tidal islands just offshore. The morphological response of this created salt marsh will be described over a sequence of storm events from March 2005 to June 2006. Sedimentation and erosion; density, height and percent coverage of the planted *Spartina alterniflora*; and wave energy will be monitored over the study period. The spatial variation

in sedimentation and erosion and how it is related to variations in vegetation (density, height and percent cover), pre-existing island morphology (elevation) and incident wave energy will be described. (Category: Graduate Student)

Johns, Rebecca A., Geography, University of South Florida

The Consumerist Turn: Reshaping the Global Landscape through Downshifting

In this paper, I argue that shifts in the global economy in the past two decades have engendered new forms of grassroots efforts to control or influence local, regional and national development. Deindustrialization of the United States and other advanced economies and the subsequent the rise of service based, mass-consumption economies has prompted a shift from a production-oriented politics of social change to political organizing based in the geography of consumption. As globalization has significantly transformed the spatiality of production and consumption, traditional grassroots political organizing within the more developed countries of the United States, Great Britain and surprisingly, some areas of the less developed world, has shifted from a focus on spaces of production to spaces of consumption. Earlier work done by the author and co-investigator Leyla Vural, analyzed the consumerist turn within organized labor in the United States. In this paper, I continue this line of inquiry by investigating the rise of an anti-consumerism movement in diverse regions of the world including the United States and Sri Lanka. The scale, scope and potential impact of the consumerist turn in social-change movements is examined through analysis of economic data and case studies of specific political organizations. (Category: Faculty)

Kamiar, Mohammad Florida Community College at Jacksonville

A Combo-Ecosystem: An Alternative for the Concept of Oasis

Oases have played a critical role in the history and geography of mankind. For many centuries, caravans traversing desert environments had to stop in oases to rest and replenish supplies of food and specially water. They have been very important geographical elements for trade and transportation. But, what is the meaning of the word "oasis" in reality and in mind? And, how big an oasis can be? Based on the connotation and size problems, this paper suggests using Ecotone or the Edge Effect as an alternative concept. An "Ecotone" is an excellent alternative approach to the concept of oasis. It does not have any of the above problems. As a product of combination of several ecosystems, Ecotone or the Edge Effect is concerned with the transitional zone in which one type ecosystem merges with others. The concept of Ecotone will be applied to an oasis settlement in the Middle East hoping to produce more meaningful understanding of its geography. (Category: Faculty)

Kent, Richie, Department of Geography, Florida State University
The FCAT: Constructing Market Mechanisms in Educational Reform

Neo-liberalism has penetrated the educational realm through discourses of market competitiveness. In Florida, these ideas have materialized in the form of the Florida Comprehensive Assessment Test (FCAT), which seeks to create a marketization of schools by labeling them with grades "A" through "F". Further market mechanisms are established through the distribution of funds in the "School Recognition Program". Several consequences of substituting market processes for complex teaching and learning processes include the disempowerment of teachers in curriculum development, the destruction of teachers' professional ethics through an environment of surveillance, and the widening of existing inequities in the socio-economic landscape of educational attainment. Issues of scale are discussed, including the trend of creating centralized demands (at the state level) with decentralized accountability and responsibility of failure (at the local level). A GIS is used to analyze the how the FCAT's results reflect and affect the spatial inequities of educational achievement in Florida. (Category: Graduate Student)

Ledermann, Samuel T., Department of Geography, University of Florida
The World Trade Organization's Doha Round: A Historical Breakthrough for African Cotton Farmers?

The international community witnessed a self-proclaimed 'historical breakthrough' at the World Trade Organization (WTO) in late Summer 2004 as a framework was created to eliminate all export subsidies and reduce domestic subsidies and tariffs respectively. While many hailed this step as a major victory for developing country farmers, others have been cautious on the potential 'success' of the agreement. The main objective of this article is to provide an analysis of WTO agriculture negotiations, its main actors and alliances, and its legal content. This analysis targets African cotton farmers, with a focus on West African countries. More specifically, this article: evaluates progress made within the WTO past the recent Hong Kong Summit, including the workings of the Sub-Committee for Cotton; analyzes potential short- and long-term effects on African cotton farmers (focusing on economic and ecological sustainability); and proposes an alternative set of policies for improving the situation of African cotton farmers. (Category: Graduate Student)

Marsik, Matt, Department of Geography, University of Florida

Quesada, Marvin, Departamento de Ciencias Sociales, Universidad de Costa Rica sede Occidente, San Ramón, Costa Rica

Stream Discharge Change in the Rios Virilla and Grande de San Ramón, Costa Rica

Costa Rica is located in an interesting climatologic crossroads, and is experiencing rapid land cover alteration in response to various social, economic, cultural and political drivers. This research seeks to determine the cause, either climatologic or human-induced, of a noticeable change, observed in 1975, in stream discharge in the Rio Virilla and Rio Grande de San Ramón. Annual precipitation totals are generated for each basin for 28 years of record (1959 to 1986) using inverse distance weighted (IDW) and spline interpolations. The IDW results indicate precipitation input to the Rio Virilla has risen slightly with a very slight decline in input to the Rio Grande de San Ramón. Contrastingly, the spline results show very slight declining trends in precipitation input for both basins. Assuming negligible annual basin storage evapotranspiration estimates have increased for both basins using both precipitation estimation techniques. These preliminary results suggest the spatial shift (pre- and post-1975) in the significance of runoff generation contribution between basins is not an climatologic artifact. Other causes may be the construction of major dams or large shift in land use/clearances in the mid-1970s. (Category: Graduate Student)

Matyas, Corene, Department of Geography, University of Florida

Quantifying the Effects of Wind Shear on Tropical Cyclone Rain Shields

Difficulties in forecasting tropical cyclone (TC) rainfall patterns can be attributed to the many physical forcing mechanisms that can affect a storm's circulation, causing it to assume an asymmetrical shape. A statistical climatology and persistence rainfall model developed by TC researchers (R-CLIPER) predicts that highest rainfall totals will occur near the center of the storm's circulation and will decrease symmetrically outwards. The R-CLIPER model, however, does not account for the effects of directional wind shear, which limits convection to the downshear side of the TC. This study quantifies the shapes of six TCs that were affected by strong directional wind shear prior to and after landfall. Base reflectivity radar returns are entered into a GIS and interpolated to create polygon shapes representing the rain shield of each TC in hourly time-steps. Six new shape metrics are developed that relate the rain shield shape to an arc, rather than a circle as do most geographical measures of shape. These six shape metrics quantify both the degree to which the arc is closed, the asymmetry of the two ends of the arc, and the position of the middle of the arc for both the inner and outer regions of the storm.

(Category: Faculty)

Morris, Phillip, Department of Geography, University of Florida
Graham, Matthew, Department of Geography, University of Florida
Patel, Ashish, Department of Geography, University of Florida
Physical Geography on the Net: Interactive Laboratory Learning

This poster describes and promotes the benefits of an internet based physical geography lab. The University of Florida Geography Department offered a one credit hour physical geography lab class in the fall of 2005. This course required research from various accredited websites. The typical lab would open with an introduction into the topic followed by the completion of a set of questions requiring the students to link up to a university or scientific website for answers to questions in the lab manual. The poster will describe an internet based research class as opposed to earlier methods used by the University of Florida Geography Department. Content for the poster will include a list of advantages versus disadvantages, pictures from the websites used in class, and a list of some valuable websites for researching physical geography topics. The objective in the presentation of this poster is generation of thought into whether this is a practical method for other geography departments throughout the state. The students, for the most part, were interested in the topics and enthusiastic about the content of the class. Many of the websites used have interactive media that makes learning physical processes more of an effective, sensory educational experience.

(Category: Graduate Students)

Mowell, Barry, Honors Program Coordinator – Broward Community College,
Adjunct Professor of Education – Florida Atlantic University
The Prevalence of Geography in the Curriculum of Florida's Community Colleges

The paper will present an overview of the status of geography as a course offering in Florida's community college system. Specifically, it will address the degree to which geography courses are present in the curriculum via examining: (1) the number and types of courses and course sections offered; (2) the enrollments in geography courses---using online data as of Spring/Winter term 2006; (3) the prevalence of geography courses in college catalogs; and (4) the types and number of geography courses present in the general education core curricula of Florida's 28 community colleges. An analysis of curriculum patterns will be offered together with suggestions as to how geography course offerings can be expanded within the Florida community college system using specific case studies from specific institutions such as Broward Community College, which has historically been a focal point for geographic education within the state community college system. (Category: Faculty)

Oldakowski, Ray, Jacksonville University

Disc Golf in Florida

Disc golf is a recreational game developed by Frisbee players in the 1960's and 1970's. In 1980, there were only 43 disc golf courses in the United States. In 2004, there were over 1700 courses. This paper examines the spatial distribution and diffusion of disc golf in the state of Florida. It presents a demographic profile of those who play the game based on surveys from various locations across the state. Lastly, it examines the role of human-land interaction in the game's popularity. (Category: Faculty)

Polk, Jason S., Head Graduate Teaching Associate, Dept. of Environmental Science and Policy, University of South Florida

Environmental Reconstruction Using Cave Sediments from Belize since 2.5 ka

Cave sediments (RC/SC04-01) from Reflection Cave on the Vaca Plateau, Belize were analyzed to infer regional changes in vegetation based on variations in the $\delta^{13}\text{C}$ in the sediment record. The sediment layers were ^{14}C dated to provide a temporal scale of deposition and the stable isotopes $^{12}\text{C}/^{13}\text{C}$ were analyzed using mass spectrometry to determine changes in vegetation from forested (C_3) to arid grass (C_4) conditions. Several shifts in vegetation, including a dramatic change $\sim 2,200$ years ago, were found in the isotopic record. A close correlation exists between the cave sediment record, the $\delta^{13}\text{C}$ signal from a speleothem in the same study area, and two nearby lacustrine cores from Lake Chichancanab, Yucatan Peninsula. Similarities between the records suggest regional vegetation shifts over the last 2,800 years. The cause for these regional changes in vegetation is changing precipitation levels due to the position of the Bermuda High and the Intertropical Convergence Zone (ITCZ), affecting the strength of the Easterly Trade winds. (Category: Graduate Student)

Qiu, Youliang, Geography Department, University of Florida

Web-based Digitizing Mechanism for Spatial Decision Support System

The Internet is chosen as a development platform for spatial decision support tool because of platform independency, low cost, ease of use and wide accessibility. Design and development of the web-based decision support system involves client server technology wherein the client makes a request to the server and the server gives the results back to the client. Scratch map as one of important tool is frequently used in normal spatial decision-making processing but it is not represented in web-based spatial decision support system because the lack of a possibility to transfer effective screen digitizing vector graphics to server side. In this paper, a web-based digitizing mechanism utilizing scratch map for spatial decision support system is discussed and an interactive tool for web-based scratch map is evaluated. It is also demonstrated that the web-based

digitizing mechanism could be used in many other applications, such as to enhance e-Commerce security. (Category: Faculty)

Raulerson, April, Department of Geography, University of South Florida

Jennifer Collins, Department of Geography, University of South Florida

Meteorological concepts explained through a flight field trip experience

The need for field based experiences in geographical education is of paramount importance as the “hands on” active learning approach is shown to be an effective method of teaching. In this paper we describe aspects of a fieldtrip developed for the meteorology class at USF (MET4010C) including a discussion of the various stages from planning, through implementation to evaluation of the success of the fieldtrip. This fieldtrip involved students flying in a light airplane (a single engine piper) and collecting temperature and pressure data, while also making atmospheric observations. On return to the classroom, students analysed the data to understand several concepts discussed in class such as “temperature inversions” and “atmospheric stability”. Further, the trip was a platform to enable students to build relationships with each other and the professor which was invaluable for future group work back in the classroom. (Category: April Raulerson - Graduate Student, Jennifer Collins - Faculty)

Reeder, Philip, Department of Geography, University of South Florida

Unraveling a Mystery at Qumran, Israel: A Geographic Approach

Fundamental geographic concepts of space, time, place and form (the spatial aspect of process) were integral in understanding linkages that exist between the physical Earth, processes, form, time and humans at Khirbet Qumran, Israel, the location where the Dead Sea Scrolls were discovered. A major component of this research was to produce the most up-to-date and accurate map of the Qumran cemeteries, and to establish the spatial relationships between the Qumran settlement, the caves (where the Dead Sea Scrolls were discovered), and the water system. Using a Total Station system, 1,077 graves with some surface expression were mapped within the confines of the cemeteries, and an additional 122 v-shaped anomalies were detected using ground-penetrating radar (GPR) and interpreted as possible grave locations. Additionally, the ruins of a mausoleum-like structure were found on a prominent hill located at the far eastern edge of the cemetery. The remains of two females were discovered within this structure in 2001, and in 2002 the remains of a male was discovered below the other remains. The lower remains were dated to the Roman period. The prominence of the spatial location of this building may indicate that a person with some importance, perhaps one of the leaders of the Qumran Sect, is buried there. More research is required to further expand this base of knowledge and to unlock more of the mysteries of Qumran. (Category: Faculty)

Rosenblum, David Brian, Department of Geography, University of Florida
A Demographic Analysis of Change in Urbanization Rates Resulting From French Colonization and Policy in Sub-Saharan West and Central Africa

Despite sharing a similar colonial government and gaining independence in 1960, the former French colonies of Sub-Saharan West and Central Africa have experienced varying trends of urbanization. Landlocked nations like Burkina Faso, Niger, and Chad currently range from 18 to 39 percent urbanized while nations along the coast such as Mauritania and Gabon are 38 to 73 percent urbanized. These trends towards coastal development show a reversal from pre-colonial growth in which many kingdoms (Ashanti and Sokoto) and cities (Kano and Timbuktu) developed further inland. The changes in the spatial focus of urbanization were examined. The research identified these changes through analysis of the growth rates of large cities since the early 1900s. Findings came from annual French-colonial statistical reports, national censuses, and reports from the United Nations. This research project also spatially identified cities with their proximity to navigable rivers and coastline. With this data, a timeline was created to view population growth, urbanization rates and colonial governing policies. This allowed for a comparison between the growth and urbanization rates of cities inland to those on the coast by year and event. This research project culminated with a demographic analysis of urbanization in Sub-Saharan West and Central Africa today versus colonial periods, what changes occurred, and why these changes happened. Additionally, the extent of how African governments incorporated colonial governing and planning policies in the post colonial timeframe was examined. Understanding these demographic trends leads to an improved appreciation of a nation's economic, agricultural, and social situation. (Category: Undergraduate Student)

Selover, Michael, Department of Geography, University of Florida
Construction of predictive seasonal precipitation models in Thailand

Models of annual and seasonal precipitation in six regions of Thailand will be addressed. Regressive models of monthly rainfall were constructed and tested using seventy years of monthly rainfall records from fifty-five stations covering the whole of Thailand, in conjunction with oceanic and atmospheric measurements and indices. These include, but are not limited to Southern Oscillation Index, Indian Ocean Dipole, and Pacific Decadal Oscillation. Regions were partitioned based on the configuration of the Thai Meteorological Department, and justified using nearest neighbor and k-means clustering algorithms. Monthly data was divided into five seasons justified by rainfall characteristics. Each of these regions and seasons was then modeled using least squares regression and robust regression, each where appropriate. Climatic shifts in the time series were identified using Mann-Whitney's U statistic, and

regression models were recalibrated using these shifts. Final models were tested with rainfall data from the same stations from 1980 to 2002.

(Category: Graduate Student)

R. SCHULTZ, Department of Geosciences, Florida Atlantic University

L. LINES, Department of Environmental Studies, Rollins College

M. KUBY, Department of Geography, Arizona State University, Tempe, AZ

Z. XIE, Department of Geosciences, Florida Atlantic University

Hydrogen Fuel Cell Refueling Stations: Issues and Strategies for Location Decisions in the Orlando and Central Florida Area

We report on the development of data and procedures for optimizing the locational siting of hydrogen car refueling stations in the greater Orlando area. Funded by the Florida Hydrogen Initiative, Inc/U.S. Department of Energy this study examines driver attitudes regarding hydrogen fueled cars, the potential demand for a rental fleet in the Orlando area, and the issues underlying the computer modeling of optimum locations for a limited number of hydrogen fuel cell refueling stations. (Category: Faculty)

Thomas Smucker¹, Rebecca Johns, Jim Krest, Daanish Mustafa, Joseph Dorsey, Joshua D. Rumschlag, Shanon Connelly, and Drea Miller, University of South Florida

The Social and Environmental Dimensions of Xeriscaping in St. Petersburg Florida: A Pathway for Ameliorating Coastal Environments

This poster illustrates a research project being conducted in the racially and economically diverse neighborhoods of Midtown St. Petersburg. The project investigates the socio-economic underpinnings of residents' lawn management decisions, the persistence of cultural preferences for certain lawn types, and the environmental potential benefits of xeriscaping in terms of reducing pollution from yard runoff. Xeriscaping entails the conversion of non-native, water-intensive landscapes to landscapes that are dominated by native, drought-resistant plants. Wider adoption of xeriscaping can be an important component of broader strategies to ameliorate coastal environments in the rapidly urbanizing state of Florida. However, growth in the adoption of sustainable lawn management practices has met considerable resistance from water users, as well as from related institutions in Pinellas County as in many U.S. residential areas. The project investigates the relationship between characteristics of ethnicity, gender and socio-economic class in Midtown St. Petersburg and degrees of receptivity to environmentally appropriate landscaping.

(Category: Students and Thomas Smucker, Jim Krest, Daanish Mustafa, Joseph Dorsey, and Rebecca Johns - Faculty)

Southworth, Jane; Binford, Michael; and Hartter, Joel

Affiliations: Land Use and Environmental Change Institute (LUECI) &
Department of Geography, University of Florida, PO Box 117315, 3141
Turlington Hall, Gainesville, FL

Hotspots and Change: Using thermal analyses for improving land cover classifications

Current studies of land cover change and land cover fragmentation predominantly rely on land cover classifications for the data input, based on remotely sensed images. However, limitations of traditional land cover classifications are numerous and as such, many researchers have tried alternate methods of classification techniques. This research goes an additional step by comparing classification-based techniques (discrete data) to the use of thermal analyses, based on both field and image data (continuous data). This research addresses issues relating to conservation of a protected park region in Uganda, in and around Kibale National Park, and in Tanzania, in and around the Tarangire National Park. While the current use of continuous data for land cover classification, and related analyses (modeling, fragmentation etc.), is quite limited this research does provide a solid foundation and grounds for additional future research on continuous surface temperature data analyses. (Category: Faculty)

Walker, Curt, Department of Geography, University of South Florida

An Analysis of Florida's First Magnitude Springs

An exploratory study of Florida's first magnitude springs was conducted using morphometric analysis. Several spatial datasets were acquired for analysis using GIS (Geographic Information System) software, with the data sets including spring locations, elevation and hydrographic data. These datasets were used with ArcGIS 9 to measure certain morphometric parameters representing physical and dimensional characteristics of the springs, which were acquired from FGS Bulletin 31, *First Magnitude Spring[s] of Florida*. The resulting database was analyzed for spatial patterns and trends. Regression modeling and Chi-squared analysis were used to determine if relationships exist between specific morphometric parameter-pairs, with extra attention given to discovering any spatial patterns or relationship between spring location and geomorphic and morphometric parameters. No significant relationships were determined to exist between the morphometric variables that were tested (for example pool area, depth and pool and run orientation). Future research will include higher magnitude springs and more morphometric and geomorphic variables. (Category: Graduate Student)

Warf, Barney, Dept. of Geography, Florida State University

Florida's Biotechnology Sector and the Palm Beach County Research Park

This paper examines Florida's biotech sector, which, while small, offers great potential for growth. It opens with an overview of the dynamics of the industry

nationally, including its major locational clusters, emphasizing the forces that generate agglomerative districts, the dynamics of regional competitiveness, innovation, and technological spin-offs. Attention is paid to the role of tacit, unstandardized knowledge and informal linkages, knowledge spillovers, and positive external economies of scale. Second, it examines biotechnology in the state of Florida, including the role of state government subsidies and educational programs. Finally, it explores the specifics of the proposed Palm Beach County Biotechnology Research Park, an offshoot of the Scripps Institute in San Diego, its likely impacts on the state economy, and its feasibility as a center of innovation in light of the local infrastructure, educational system, amenities, and ability to attract venture capital. The conclusion dwells upon the potential of new centers of biotech to compete with older, established ones.

(Category: Faculty)

Watson, Kelly, Department of Geography, Florida State University

Stallins, J. Anthony, Department of Geography, Florida State University

Tupelo honey production in Northwest Florida: challenges, networks, and livelihood strategies

We have initiated a formal geographic study of beekeepers and honey production in Gulf County, Florida, a primarily rural area located along the Apalachicola River. The context of beekeeping and the tupelo honey industry in this region are tied to larger-scale changes in the landscape of the Florida Panhandle. The dense stands of tupelo trees that grow along the Apalachicola River and its tributaries make Northwest Florida one of the only places in the world where this renowned honey is produced commercially. Environmental change in this region is sometimes natural, but often socially and politically induced as Florida's Deep South is divided up into parcels of real estate prime for commercial development. Tupelo honey production is both an economically important industry for the state, and an artisanal rural livelihood practiced for generations by beekeeping families. However, the number of honey producers in this unique and culturally rich area has been in a constant decline over the past 100 years. More so than ever, beekeepers are faced with a slew of challenges that threaten their livelihood. Along with land-use change and development, other obstacles include exotic pests, Africanized bees, labor constraints, and issues of forest access. We propose to examine how these challenges may affect the future of beekeeping in the region, and the social networks from which adaptation to these challenges emerge and serve as "development" or survival strategies. We discuss preliminary findings related to initial participatory observation and interviews with beekeepers.

(Category: Graduate Student)

Waylen, Peter, Department of Geography, University of Florida
Corene Matyas, Department of Geography, University of Florida
Shifting Patterns of Seasonal Rainfall, Jacksonville, 1872-2005

The precipitation regime of Jacksonville reflects elements of the seasonally varying generating processes - winter frontal, summer convective and tropical storm - which affect the entire state to some degree, and are reflected in the hydro-climatology of floods and droughts in the rivers. The length and completeness of this historic record provides an excellent opportunity to identify temporal changes in the relative importance of these processes, and their interannual variability. The changing regime of tropical storm-related rainfalls in concordance with a warming tropical north Atlantic has been of great public interest in recent years, while earlier attention was focused upon the role of ENSO in determining winter precipitation. The state of ENSO is one factor which governs tropical storm formation. However these two causes of interannual variability operate with differing frequencies, multi-decadal in the case of the Atlantic and 3-7 years for ENSO, which means that the nature of their interaction is complex over time. Wavelet analysis is employed to identify changes in the nature of the seasonal rainfall components at Jacksonville, showing distinct longer term changes in the relative importance of warm and cold rainy seasons, which are tentatively linked to temperatures in the tropical north Atlantic, the annual frequency of tropical storms in the vicinity, and the changing strength of ties to the ENSO phenomenon. (Category: Faculty)

Wysong Jr., James F., Professor of Earth Sciences Hillsborough Community College
Rivers, Reservoirs, and Rainfall - An Examination of Renewed Interest in Surface Waters for Public Supply in Peninsular Florida

Peninsular Florida has traditionally relied on groundwater for public supplies of potable water. In recent years the highly productive aquifers that underlie the region have been overtaxed in many areas, forcing consideration of alternative supply options. Though surface waters have long been utilized in some Florida locations, geological and hydrological circumstances, as well as regulatory concerns, have heretofore limited the expanded use of surface waters. The recent opening of the 15 billion gallon (57 billion liter) C.W. "Bill" Young Regional Reservoir near Tampa has been touted as a means to reduce dependence on groundwater, while also offering some measure of "drought proofing" of the public water supply in West Central Florida. Surface water diversions and impoundment are, however, not without critics who cite a host of concerns. Can surface water resources play a significant part in meeting peninsular Florida's future water needs, or will other approaches prove more effective? This paper examines the past, present, and predicted future of surface water resources in peninsular Florida as a part of the public water supply. (Category: Faculty)