

Title: Reproductive Rights and Development in Peru: Indigenous perspectives from the Quipu Project

Abstract:

This paper examines how multimedia archives can facilitate the study of development geographies. With the theoretical tools of feminist geography, I analyze a selection of testimonies made available through The Quipu Project. This online collection houses hundreds of testimonies from Indigenous women (as well as some men), mostly from the Andes region in Peru. These individuals have suffered obstetric violence during the National Population Program, considered a key element in President Alberto Fujimori's policies to stimulate the country's development. Obstetric violence is a term that identifies hospital-based obstetrics as violent and disrespectful of women's autonomy.

With discourse analysis, I interpret four women's testimonies with development narratives promoted by the government. Comparing them to each other illustrates what mainstream discourses of development tend to ignore. My analysis connects the issues of family planning and the political economy of Peru through feminist geography theory. I emphasize the ways in which Indigenous women embody development. I conclude by suggesting how these testimonies provide critical counterpoints to the dominant narratives put in place by institutions. By erasing the experiences of oppressed and minoritized populations, development narratives represent the power imbalance that affects Indigenous communities all throughout the Americas. Rarely are their voices considered when designing policies for development. Projects like The Quipu Project amplify these voices, giving them more exposure, highlighting the violations of Indigenous peoples' reproductive rights, and bringing them closer to obtaining justice.

Keywords: feminist geography, obstetric violence, Peru, reproductive rights, family planning

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Session Type: Paper

Title: "Not a Big Climate Change Guy": The Semiotics of Climate Change Discourse in West Texas and the Panhandle

Abstract:

Interviews with farmers and ranchers in West Texas and the Panhandle demonstrate ways in which climate change is constructed as unimportant, meaningless, insignificant, impertinent, invalid, and alien. These strategies may be present even when the speaker has had first-hand experiences of changes in weather patterns and is willing to speak about those experiences. This demonstrates a need to adapt climate change discourses to engage with people who recognize changes in the weather but at the same time adopt a flexible strategy of rejection when it comes to the term and the concept "climate change."

Keywords: climate change, weather, discourse, semiotics, identity

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Session Type: Paper

Title: Tobler's Hiking Formula and Raster Resolution

Abstract:

Tobler's hiking formula provides estimates of walking pace and travel time derived from terrain slope, which are useful both for trip planning and search and rescue purposes. The formula is promising but under-analyzed; a better understanding of the formula is sought through an applications-based approach. First, open source data and tools are utilized to demonstrate a geographic information systems workflow for implementing Tobler's hiking formula. Second, the workflow is used compare results across two different resolutions of raster elevation data. Finally, the pace and time estimates produced by the workflow and varying raster resolutions are analyzed for their validity. The results expose limitations to the hiking formula over steep terrain and suggests additional opportunities for research moving forward.

Keywords: GIS, spatial analysis, trip-planning,

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Session Type: Poster

Title: Climatology and Spatiotemporal Analysis of North Atlantic Rapidly Intensifying Hurricanes

Abstract:

In recent decades, the scientific ability to project tropical cyclone (TC) intensities and tracks has improved. Hurricanes undergoing the process of rapid intensification (RI) have created new barriers in formulating predictions of TC paths and peak velocities. Current research suggests the warming climate may produce more intense TCs with a higher probability of undergoing RI during their life cycle. The increased likelihood of rapidly intensifying TCs necessitates the development of an RI climatology spanning the current North Atlantic record. A time series count analysis suggests a significant increasing trend of RI events in the Atlantic basin by 48.3% (36–61%) for the entirety of the record and 29.1% (17–45%) from the year 1900 to present. For the entire basin, the peak frequency occurs in September, followed by August, then October. Both Gulf of Mexico and Atlantic events typically have their highest occurrences in September; however, Gulf of Mexico events tend to occur more regularly over June, July, August, and September while Atlantic storms peak in August, September, and October. The onset of RI typically begins in the Western Caribbean and Gulf of Mexico, west of -85° longitude. The lifetime maximum intensity typically occurs in the Gulf of Mexico basin. Statistics suggest the location of rapidly intensifying TCs LMI is clustered through space. This research is necessary in order to find substantive trends in RI events that may aid future predictions of tropical cyclones; therefore, potentially decreasing the lives lost and the cost of damage that these storms are known to cause.

Keywords: Rapid intensification, hurricanes, climatology

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Session Type: Poster

Title: Mapping Bone: Integrating 3D Scans and GIS to produce Quantifiable Indicators of Age in the Auricular Surface

Abstract: The human skeletal system goes through various morphological transformations with age, which allows forensic anthropologists to create age estimations by evaluating specific changes on the surface of bone. While GIS tools were originally designed to map and examine the physical surface of the Earth's terrain, the past 30 years has shown a shift in GIS tool application into different fields including archaeology, medical sciences, and forensic anthropology. This study presents a multidisciplinary approach that utilizes GIS tools to map the auricular and retroauricular areas of the human os coxa (hip). The goal of this project was to create a method of aging by analyzing 3D coordinate data in GIS to produce quantifiable characteristics for age assessment.

A NextEngine \hat{a} , \hat{c} HD Desktop 3D scanner was used to scan the auricular and retroauricular surfaces of 23 os coxae from the LSU Forensic Anthropology and Computer Enhancement Services (FACES) Laboratory donated collection. ScanStudio HD Pro \hat{a} , \hat{c} software was used to process the 3D image and produce xyz point cloud coordinate points. ESRI ArcGIS \hat{a} , \hat{c} software version 10.6.1 was used to create Tin surface models and continuous raster data for analysis. ArcMap tools including contour mapping, slope, and surface volume were used to highlight apical changes, areas of exostosis on the retroauricular surface, as well as regions of depression associated with macroporosity.

This study demonstrates the ability to combine 3D scanning technology with GIS tools to evaluate morphological changes in the auricular and retroauricular surfaces that are commonly used when creating age at death estimations.

Keywords: Age Estimation, 3D Scanning, GIS

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Session Type: Poster

Title: Merging Servers: The Fusion of Gay and Gamer in to Gaymer

Abstract:

As technology continues to be ever intertwined in our daily lives, identities that once pertained only to online worlds are beginning to manifest in offline settings. One such identity is that of the Gaymer (Gay-gamer), self-identified individuals who simultaneously identify as part of and yet rejected by both the gaming and gay communities. By drawing upon the theories of the videoludification of society and actor-network-theory as well as conducting ethnographic research in Houston, Texas at the monthly meet ups of the Houston Gaymers group, this project examines the factors that lead to individuals creating and adopting hybrid virtual/actual identities and how these identities manifest in the actual world. **Keywords:** feminist geography, obstetric violence, Peru, reproductive rights, family planning

Keywords: Gaming, Houston, Ethnography, Identity, Sexuality

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Title: Development of Global Social Vulnerability Model for Earthquakes

Abstract:

Although earthquakes are one of the most devastating natural hazards that affect humanity, very few attempts have been made to consider the human elements that put populations at risk. Most researchers focus on the assessment of seismic hazard and the physical risk of a given area (i.e. potential for losses of life and infrastructure). But more integrated approaches that address both physical risk and social/human characteristics that place people at risk are needed to assess earthquake risk in a manner that is robust and holistic. Measurement of the concept of social vulnerability is one of the methods of addressing the human element of earthquake risk, which can be defined as characteristics or qualities within social systems that create the potential for loss or harm. There is no agreed-upon framework and established sets of data, however, to measure social vulnerability to earthquakes. The objective of this study is to focus on the human component of earthquake risk worldwide. It is accomplished by following a step-by-step methodology for producing composite indices representing the social vulnerability of countries to earthquakes within three topical areas (human impact potential, economic vulnerability, and recovery and reconstruction potential) that includes the development of a “wish list” of variables, missing data imputation, correlation analysis, and global as well as geographically weighted regression analyses for variable validation and selection. The results show that a number of different indicators can be used to assess social vulnerability considering the human impact, economic vulnerability, recovery potential, and these indicators vary across space.

Keywords: Global Social Vulnerability, Earthquakes, Social Vulnerability Index, Validation of Index

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Session Type: Paper

Title: Greenwashing in the Health and Beauty Industry

Abstract:

The research reports the practice of greenwashing in the health and beauty industry. This commercial enterprise is currently valued at 500 billion dollars. A rise in social responsibility for the Earth has caused consumers to change their buying habits to regard environmental issues as a priority. What consumers do not know is that big businesses are using greenwashing as a marketing model to keep the consumer believing that they are making a difference with their change of purchasing power. Developed on innovative plans to prioritize profit over transparency, companies continue to carry out these practices without discipline.

Keywords: Beauty, Greenwashing

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Session Type: Poster

Title: Yemenis in Korea and Congolese in Mexico: Understanding Migration to Non-Traditional Destinations

Abstract:

The dramatic rise of international migration over the last several decades has resulted in a global crisis as wealthier and stable destination countries are increasingly hostile to migrants who are unable to prove the requisite persecution to claim asylum. Instead, they are 'survival migrants' (Betts 2013) fleeing from the chaos of 'fragile' states that fail to protect them from serious socio-economic deprivations and other threats that do not fit the 1951 refugee convention. As such, they are ineligible for legal protections, assistance and recognition afforded to refugees and asylum seekers. The closing of options for legal migration has dramatically restricted choices for migrants fleeing the political, or socio-economic violence in their home countries and has resulted in many migrants settling "temporarily or permanently" in non-traditional destinations. Through the cases of two migrant populations in alternative destinations: Congolese in Mexico and Yemenis in South Korea, this paper examines how 'survival migrants' choose these alternative destinations. Utilizing a human rights framework, this analysis will trace the policies that lead survival migrants to search for alternative destinations, as well as suggest future policies that would better serve and protect survival migrants.

Keywords: survival migration, asylum, human rights, Yemeni, Congolese

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Session Type: Paper

Title: The Maussian Paradox of the Gift in Military Places/Spaces

Abstract: The contemporary US military provides a premier example of postemotional society: it makes use of the most advanced and up-to-date technology, but operates on social principles, including hazing, that are premodern. Military recruitment and retention verbiage preach to recruits and members that they are a "band of brothers and sisters," a community, a family. However, reported incidents of sexual violence within the ranks continue to increase which, in turn, indicates violation of incest taboos (in addition to violation of the UCMJ, as well as state and federal laws). Activities on US military installations are by their very nature intimate and, by necessity, unseen or unseeable by the general public. The people who labor at and with warâ€”service members, their families, local civilians, politicians”coexist in spaces in which otherwise gratuitous violence is minted into coherent narrative, a complicated, unstable public and public-serving yet also very private, self-serving exercise. This selective (in)visibility renders their tradition-steeped subculture also steeped in secrecy and often impunity. Utilizing the Maussian paradox of a gift, this qualitative research identifies military spaces as historic locales of gifting and of care. The data drawn from multiple generations of female military veterans exemplify the transition from a modern US military to a postmodern/postemotional US military. Abandonment of gifting and rejection of care result in the degradation of military good order, discipline, and esprit de corps. Female military veterans report anomie, mistrust, and abuse of power which manifest in harassment, sexual violence, and suicide. These are indeed hostile geographies.

Keywords: military, female, veteran, postmodern, sexual violence

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Session Type: Paper

Title: Exploratory fieldwork in Natural Protected Areas of arid northern Mexico

Abstract:

Mexico contains eight percent of the world's flora species about half of which are endemic and in need of conservation. Economic development and population growth are constant obstacles to conservation efforts, particularly in arid lands where flora species are highly vulnerable to anthropogenic disturbance. In this work I show preliminary biophysical and socioeconomic fieldwork observations from three Protected Areas located in the Chihuahuan Desert: 1) the Reserva Estatal Real de Guadalcazar, 2) the Sitio Sagrado de Huiricuta, and 3) the Reserva de la Biosfera de Mapimi. I employed topographic, land use and vegetation maps, Geographical Information Systems, Global Positional System, and knowledge from locals to identify the main human-environment interactions. I registered the types of vegetation and degradation processes in the study sites. I **Contacted** the leaders from the most populated towns, and I evaluated the general conditions of accessibility and safeness. I discovered that the biophysical conditions of these natural areas pose challenges but also numerous possibilities to collect and integrate data. The conclusions of this work are that the selected Protected Areas face similar problems but different circumstances for conserving their natural resources according to their historical background and legal status, and because of their particular social and economic influences.

Keywords: Nature Conservation, Natural Protected Areas, Chihuahuan Desert, human environment interactions, Mexico

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Session Type: Paper

Title: An Integrative Approach to Count Protestors in Hong Kong

Abstract:

Many protesters marched onto the streets and rallied in Hong Kong during Summer 2019. The conventional approach involves counting protesters at specific check point(s) along the rally. However, such manual counting is labor intensive, inconsistent and suffer from high spatiotemporal uncertainties. Hence, counting a rally crowd remains challenging in theory and in practice. This research highlights an integrative approach, in addition to the manual count and in-situ questionnaire, to count rally by using 1) an automated counting algorithm at multiple check points, 2) a crowdsourcing project to collect individual protest trajectory, 3) an augmented count of early departure, and 4) a GIS simulation of crowd behaviors. The automated counting algorithm uses a Convolutional Neural Network (CNN) approach to detect an object as human, and track its movement within a zone to define him or her as a participating protester. This application is developed and installed on ten iPad devices distributed along the planned route to count bypassing protesters in the 2019 annual July 1st rally in Hong Kong. To better account for the stochastic human behaviors in a dynamic rally, a crowdsourcing project was launched and has recruited hundreds of volunteers to track their movement during the rally using a mobile application and provided individual trajectories. Moreover, another group of volunteers were mobilized to count early departure at various gateways of public transits, including railways and buses. These information is used to calibrate the parameters of an agent-based model to simulate the crowd behaviors and verify crowd estimation.

Keywords: mobile crowd estimation, machine learning, geocomputation, crowdsourcing trajectory, GIS

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Session Type: Paper

Title: Identification and evaluation of flood-avoidance routes in Tucson, AZ

Abstract:

Campaigns such as “Turn Around, Don’t Drown” encourage motorists to avoid driving into flooded roadways, but vehicle-related flood deaths remain high. Motorists may not have a feasible alternate route, or they may not be aware of one. Furthermore, few studies within hazards research consider how vulnerability changes as an individual moves through space. A survey of Tucson residents included a mapping activity to determine whether the routes they take on a regular basis intersect flood areas, and whether alternate routes exist that avoid flood areas without adding excessive travel time. Of the 452 routes provided, 185 intersect with areas known to flood, exposing 80 percent of study participants to floods during their typical travel. ANOVA revealed no statistically significant differences in exposure rate among groups based on demographic characteristics. Network analyst was used to generate alternate routes that avoid the flood areas and to calculate how much additional time and mileage would be required. Only one route from this sample did not have a calculable alternative. Additionally, many of the alternate routes were shorter than the routes provided by participants, and 80 percent added less than one mile to the trip. Since most of the participants indicated they would be willing to travel at least one mile to avoid floods, they would likely take the safer alternate routes. These findings highlight the potential utility of a decision-support tool to help motorists choose safer flood-avoidance routes during storms.

Keywords: Hazards, floods, motorists, GIS

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Session Type: Paper

Title: Maps Published in Geography Journals, 1987-2017: A Longitudinal Analysis

Abstract:

The tools and techniques used in the design and construction of maps continue to evolve with innovations in computer hardware and graphics software. However, instruction involving cartographic design principles is increasingly found within college and university courses that emphasize maps and mapping techniques tied to geographic information system (GIS) software. As a result, geographers today generally have less training in cartographic design and presentation than previous generations, which could lead to map quality problems such as inappropriate projections, poorly designed symbols, or the omission of critical elements. This paper examines whether such issues are becoming more or less common over time.

To evaluate changes in cartographic quality over time, we evaluated maps published in geography journals over a thirty year period (1987-2017). Our sample included 650 maps selected from 10 research journals in geography. Each map was evaluated independently by three researchers using a rubric for scoring seven basic elements of cartographic design including the size and placement of text, success in establishing visual hierarchies involving point, area, and line symbols, and the extent to which space was used effectively. Our principal objective is to evaluate the extent to which basic cartographic conventions have been applied and maintained during a period of extraordinary technological change.

Keywords: cartography, geography journals, map design principles

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Session Type: Paper

Title: Invisible no more: An exploratory geospatial typology of illicit massage businesses in the Dallas-Fort Worth Metropolitan Area

Abstract: Illicit massage businesses (IMBs) make up the largest sector of the commercial sex industry in the United States. To date, very little research examining the spatial dimensions of this industry exists, and what limited research exists treats all IMBs as equivalent features in space. This research addresses this shortcoming of previous research by drawing on analysis of landscape photographs of more than 150 IMB storefronts in the Dallas-Fort Worth Metro area, attribute data for each IMB drawn from online review websites, and neighborhood demographic profiles, this paper presents the first geo-spatial typology of illicit massage businesses in North America.

Keywords: Informal Economy; Economic Geography; Urban Geography; Illicit Economy

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Session Type: Paper

Title: Insights Into Guyanese Perceptions of Wild Cats and Implications for Their Survivability

Abstract: Wild cat survivability across the globe is intricately linked to human pressure within their habitats. Human pressure is primarily exerted from activities that are labeled as ‘economic development’ and tend to occur within spaces that are home to some of the planet’s most vulnerable peoples. For example, in Guyana human-jaguar conflict, a good indicator of all human-wild cat conflict, is prominent across four primary dimensions, 1) cattle farming places prey within the range of jaguars, 2) gold miners bring domestic animals into jaguar habitats, 3) commercial loggers modify jaguar habitats, and 4) indigenous peoples’ population growth and the advancement of alternative livelihood opportunities compromise the well-being of native jaguar prey species. Each of these dimensions present different realities for the survivability of jaguars and other wild cats as stakeholders perceptions determine whether they are killed. Yet, our understanding of how human-wild cat conflict has been restricted to cattle farmer-jaguar interactions. In this paper I examine perceptions of all six wild cats species found in the forests of Guyana to determine whether there differences across the four dimensions and how this varies across space. The measure, the potential for conflict index (PCI), was used gauge stakeholders’ perceptions and determine what this may mean for wild cat survivability. The analysis suggests that while gold miners view wild cats as a potential challenge to their work, they have a strong affinity for these animal species. Cattle farmers, in contrast, generally hold negative views of wildcats and are more likely to kill them.

Keywords: potential for conflict index, wild cats, jaguars, Guyana, gold miners, cattle farmers

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Session Type: Paper

Title: Spatio-temporal Patterns of Groundwater Arsenic Contamination in Texas from 1980 to 2019.

Abstract:

Arsenic (As) concentration in groundwater varies across space and time and may increase with geological processes and/or human activity. Ingesting As concentrations above 10 ug/L may be harmful and contribute to several diseases including kidney disease, skin cancer or even death. In Texas, As levels in the Panhandle and Gulf Coastal Plain are remarkably higher than average As levels statewide, but temporal studies at counties are generally lacking. Landscape modification due to agriculture, energy extraction, industrialization, and weathering may have influenced concentrations in these areas. Using data from the Texas Water Development Board's groundwater quality database and geostatistical models, this study examines the spatial patterns of As concentration between 1980 and 2019 in Texas counties. The methodology presented identifies areas with consistent increases through time and evaluates possible human and natural factors that may explain the observed patterns.

Keywords: Arsenic, landscape modification, spatial patterns

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Session Type: Poster

Title: Alienation and the 'Exclusion Identity': Right-wing populism and its strident anti-immigrationism in the US

Abstract:

Analyses of the anti-immigration focus of right-wing populism are regularly inhibited by the conventional terminology employed. The 'economic argument' emphasizes competition for economic resources/opportunities/subsidies. The 'cultural preservation argument' emphasizes the need to protect a way of life from the threat posed by 'others'. And what further hinders comprehension is the motivating dynamic of 'alienation', being an unwieldy term referring to an affliction with multiple causes and multiple manifestations. This paper shows that a complex synthesis of marginalizing economic and cultural factors generate a profound state of alienation that, for contemporary political analysis, merits recognition as a distinct state of disconnectedness. By refining the concept of 'alienation', this paper shows that the disaffection disproportionately experienced by the core of North American right wing populism is a consequence of the contemporary inability to affirm a traditional conception of 'us' in a consumer culture. The immigrant 'other' is not the elemental cause nor the source of right-wing populist resentment; the immigrant 'other' is the 'means' to momentarily confirm an ephemeral and cathartic sense of 'us' that this paper labels an 'exclusion identity'. With a refined conception of alienation overt contradictions of right-wing populism that are inadequately explained when using the conventional 'economic/cultural preservation' duality become more intelligible

Keywords: Populism, Alienation, Immigration, Trump

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Session Type: Paper

Title: Multiscalar spatial analysis of urban flood risk and environmental justice in the Charlanta Megaregion, USA

Abstract: Previous research exploring the environmental justice implications of urban flood hazards has produced contrasting results. To better understand if vulnerable populations are disproportionately exposed to urban flood hazards in non-coastal cities, this study assessed the magnitude of socio-economic inequities in flood risk throughout the Charlanta megaregion. Specifically, population characteristics within the 500-year flood zone were estimated using United States Census Bureau data for race, ethnicity, and poverty by applying three dasymetric mapping techniques at four spatial scales. Risk ratios were used to statistically evaluate if vulnerable populations were overrepresented in areas at risk for flooding overall as well as for lake and non-lake regions. Although the results varied according to the scale and socio-economic variable, the most accurate dasymetric mapping approach indicated that environmental injustices were systemic, as vulnerable individuals were between 14% and 42% more likely to reside in areas at risk for flooding when analyzing the entire megaregion. At the metropolitan scale, vulnerable individuals were still significantly more likely to reside in flood zones, and the influence of lake amenities on the disparities was nuanced. A complex spatial landscape of inequities was also observed at the county and census tract levels. Overall, the notable disparities faced particularly by non-Hispanic black and Hispanic populations suggest that urban flood risk inequities in the megaregion are largely due to structural forms of discrimination and residential segregation, which have been pervasive throughout the development of Charlanta.

Keywords: Urban Flood Hazards; Environmental Justice; Vulnerability; Charlanta Megaregion; Dasymetric Mapping

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Session Type: Paper

Title: SmartCampus: Multi-Level Building Data Model

Abstract:

SmartCampus, the flagship project of the Geospatial Analytics and Innovative Applications Laboratory (GAIA), was born from a desire to innovate the UT Dallas campus into a smart Geographic Information System (GIS).

The project aims to provide intelligent space use and management for students, faculty, and staff through the applications of GIS. Our solution is to provide data, analytics, and innovative applications that augment the UT Dallas community experience

This poster discusses the systematic workflow of creating the initial GIS layers that serve as the foundation for a campus variation of the smart city initiative, as well as future expansion of the project.

Keywords: BIM, Smart City, GIS Indoors

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Session Type: Poster

Title: Slow Violence in the Tourism Industry

Abstract:

For many, the tourism industry often evokes ideas of being on vacation, getting away from it all, or adventure in an unfamiliar place. For others, it constitutes a primary threat to their livelihoods, land rights, and way of life. These threats and their realization constitute a form of “slow violence,” which according to Rob Dixon, is incremental, often invisible, and whose repercussions span years, decades, or even centuries. Drawing on fifteen years of research in Guatemala’s Maya Biosphere reserve, I argue that slow violence in tourism takes the form of three interlocking dynamics. First, slow violence in tourism manifests in a diversity of practices of land dispossession that range from land grabs to gradual, incrementally lost usufruct rights. Second, the commodification of culture and identity in tourism is another form of slow violence. Third, slow violence in tourism occurs through scientific knowledge production in tourism projects associated with heritage management. I explore how advances in LIDAR and other geospatial technologies are marshaled to reproduce neo-colonial claims of discovery that support elite land claims and limit local autonomy and management of cultural and natural resources. These interlocking physical, cultural, and epistemic forms of slow violence are pervasive but not inherent to tourism. Analyzing slow violence in tourism illustrates the role of grassroots, communally-managed tourism initiatives in pursuing more socially and environmentally just forms of development, particularly in indigenous, rural, and protected areas in the Global South.

Keywords: tourism, sustainable development, violence, Guatemala, Maya, archaeology

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Session Type: Paper

Title: A sparse Bayesian approach to eigenvector spatial filtering

Abstract:

In this paper I draw from the literature on high-dimensional signal detection to propose a Bayesian approach to estimating eigenvector spatial filters (ESF) for spatial regression modeling. ESF is an approach to spatial regression which both removes residual spatial autocorrelation and estimates underlying spatial patterns in the outcome variable. A key computational challenge is identifying an optimal spatial filter through the linear combination of the eigenvectors of a transformed spatial connectivity matrix. While this is often approached as a problem of variable selection and removal, I investigate the performance of sparsity-inducing prior distributions for the estimation of spatial filters in a Bayesian context. I argue that the regularized horseshoe prior (RHS) is well-suited to ESF modeling due to the ability to control both the degree of sparsity and regularization (or shrinkage) of eigenvector coefficients while achieving relative computational efficiency.

By recasting the problem of eigenvector selection as one of (sparse) parameter estimation, a posterior distribution of the ESF is obtained in a single model. Results from a simulation study show that popular ESF estimation methods tend to underestimate the degree of uncertainty in parameter estimates while the proposed RHS-ESF method offers a substantial improvement. RHS-ESF regression can be implemented in the Stan programming language.

Keywords: Spatial regression, spatial filtering, Bayes, sparsity priors

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Session Type: Paper

Title: PEMEX, transitions in the energy sector, and the local milieu in Mexico

Abstract:

This research contends that Mexico's energy sector is undergoing a transition on three parallel trails: the regulatory changes approved in 2013 that opened up the entire value chain to private participation, the increasing role of renewable sources in the energy mix, and the political shift the country is experiencing as a result of the July 2018 presidential elections. These transitions are re-shaping the energy landscape of Mexico not only in terms of policy implementation, institutional governance, productive gains, and the role of private and state-owned players. This shifting environment is also having considerable repercussions at the local level.

Furthermore, the structural change of PEMEX over the last few years cannot be delinked from the local milieu. Owing to the company's decline in production and investment, cities and regions that depend heavily on PEMEX activities have been experienced economic constraints and unemployment.

By and large, the present research seeks to identify and analyze different sort of local responses to PEMEX structural change and the above mentioned energy transitions.

Keywords: Energy geographies

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Session Type: Paper

Title: UT Geography through the doctoral lens: an analysis of PhD research trends in the first geography doctoral program in Texas

Abstract:

Within the seventy-year tenure of the Department of Geography at the University of Texas at Austin, a total of 133 doctoral dissertations have been completed. Previous work has documented distinct developmental stages in the department's history between 1949 and 1998 (Knapp 1998). In this study, we take a quantitative approach to concentrate on the graduate program and extend the previous work temporally to the present year. To do so, we analyze the content of published dissertations using their **Titles** and **Abstracts** to synthesize prevalent themes and trends using automated content analysis (ACA). The ACA framework uses prominent words in a document as "seeds" for a machine learning process, and then extracts concepts which are grouped into overarching themes. ACA can be used to better understand departments, fields, and sub-fields. We present this work as an example of the utilization of ACA to document the ebbs and flows of research trends within a geography department and to determine how these trends align with the discipline of geography more broadly.

Keywords: history of geography, temporal research trends, geography departments, automated content analysis

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Session Type: Poster

Title: Using ‘Potential’ to Conjure Geoimaginaries of a Texas-Mexico Frontier Basin

Abstract:

We argue that the word “potential” and associated visualizations conjure geoimaginings of resource possibilities, including production volumes, capital investments, and economic development. To demonstrate how, we trace the history of the word “potential” as used to describe the Burgos Basin in northeast Mexico. Included in the analysis of Burgos potential, we show how conjuring tools such as: 1) maps of geologic continuity with productive Texas oil fields, 2) quantitative forecasts of production scenarios, 3) graphs depicting private firm contributions to production, and 4) the threats posed by a fracking ban to economic development, aim to reinforce potential narratives and support calls for investing in the Basin’s development. The research contributes to debates on resource frontiers, resource governance, and geoimaginaries. It also provides a critical reading of a common hydrocarbon narrative.

Keywords: Oil and Gas Development; Reserves; Mexico

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Session Type: Paper

Title: The energy reform in Mexico and the evolution of Social and Environmental Impact Studies

Abstract:

An overview is presented on the evolution, within the energy sector in Mexico, of the social base line studies towards social impact assessments, and on the other hand, the environmental impact studies that evolved from characterizations of contaminated sites to environmental baselines. The starting point is the change in the state regulations on the production of energy in recent years.

The normative effects of such reforms have already manifested in the social and territorial management plans of the companies involved, giving rise to the emergence of social impact assessments.

This process has been called Energy Reform and has introduced significant changes in two markets that were exclusive monopoly of the Mexican State for more than 70 years.

In this context, we also present the experience of a team of researchers and professionals from the academic sector (Department of Sociology, Universidad Autónoma Metropolitana, Mexico) who have been linked to the oil industry by developing social and environmental impact assessments on the territories affected by oil extraction.

Keywords: Social Impact Assessment, Environmental Impact Assessment, oil and gas industry , Mexico

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Session Type: Paper

Title: Food Deserts in Oklahoma: A Convergence of Research and Narrative

Abstract:

Food deserts have been a source of conversation, research, and policy-making in the United States for about two decades. Since the term "food desert" entered the lexicon, research has focused on both the causes and the effects of their appearance on the landscapes of our cities and rural areas. Research has focused on many related issues, such as lack of access to grocery stores stocked with healthy food, transportation issues, poverty, race, and health impacts. Several works point out that ambiguous language and a lack of accepted definitions of terms on the subject were hampering efforts to understand it. According to the United States Department of Agriculture, 87 out of 228 census tracts in Oklahoma City are food deserts. The town of Valley Brook is located in one of them. This research examines Valley Brook in light of the available research. Drawing on interviews and participation, it takes the position that our foremost allies in the mitigation of food deserts in our communities are the people who live within them. It is imperative that we listen carefully to their voices. The stories that emerge from these crises are an important resource in understanding this phenomenon. Conclusions suggest that those who live in food deserts are in the best position to illuminate the nuances that lie between the lines of statistical data, providing the narrative to complete the picture of the realities of food deserts in our communities.

Keywords: Food desert, Oklahoma

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Session Type: Paper

Title: An Analysis of the Visual Language of National Geographic, 1990-2015

Abstract:

In the more than 130 years that National Geographic has been published, the magazine has been a staple source of images about our world. Sociologists Catherine Lutz and Jane Collins completed the first critical review of National Geographic Society and its leading publication in the early 1990s. Their book, *Reading National Geographic*, called attention to the idealized and often sexualized representation of non-Westerners. We wondered how and to what extent the visual language of National Geographic might have changed in the approximately 25 years since the study by Lutz and Collins. Using content analysis, we coded and analyzed a sample of images published in National Geographic from 1990 to 2015. We also collected data on the geography of places and regions featured in the magazine. As much as possible, our methods attempted to replicate those of Lutz and Collins. Our findings point to both continuity and change in the representation of non-Westerners within the pages of National Geographic.

Keywords: content analysis, visual language, representation, National Geographic

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Session Type: Paper

Title: Changes in urban land use throughout the Edwards Aquifer: A comparative analysis of Austin, San Antonio, and the I-35 Corridor

Abstract:

A lack of access to freshwater is a growing threat to the future sustainability of urban centers. In South Texas, rapid urban population growth along the I-35 corridor has not only enhanced the demand for water withdrawals from the Edwards Aquifer, the region's primary water source, but also rapidly transformed the natural characteristics of the aquifer's overlying area. This paper aims to assess how effective polices have been in protecting the aquifer by analyzing land use change trends. Specifically, National Land Cover Database data for 2001-2016 was used to quantify the rate of urban development within the Edwards Aquifer for five counties, stretching from San Antonio to Austin. The land use change analysis indicated that roughly 4.5 million sq. acres of the Edwards Aquifer remain undeveloped. Additionally, the temporal trends suggested that urbanization has steadily declined in the recharge zone but varied in the contributing area. At the county level, although urbanization of the recharge zone in Bexar County remained the highest at 16 percent in 2016, it has decreased faster than the other study counties. The Barton Springs segment in Travis County underwent less development over the 15 years and retained much of its undeveloped land through protected areas. Comal and Hays county did not exhibit noticeable development throughout the Edwards Aquifer since 2001, as most of the urbanization was low-density, residential sprawl. Overall, the rate of urban development across the Edwards Aquifer has generally decreased, indicating that the polices implemented to protect the aquifer have been largely effective.

Keywords: urbanization, Edwards Aquifer, land use change, urban planning

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Session Type: Paper

Title: Investigating associations between physical and social vulnerability in the Arkansas River basin

Abstract:

Recent trends in analysis of disaster risk have emphasized the importance of social vulnerability to disasters as a previously neglected piece of the puzzle for hazard assessment. Social vulnerability refers generally to social variables which make individuals more likely to suffer setbacks as a result of disasters. The intersection of social vulnerability and physical risk creates a nexus of heightened danger. For this reason, it is important to examine correlation and collocation between physical and social risk factors.

Inspired by recent flooding events in the Arkansas River drainage, my research focuses on investigating the possible existence of these associations in the Tulsa metropolitan area. I look at demographic variables from census data, including the Social Vulnerability Index developed by Flanagan et al. and the CDC, to determine areas of Tulsa that exhibit generally higher or lower social vulnerability. I then compare this with areas determined to be at risk of flooding to determine statistically significant associations. This research should aid in developing an understanding of the ways in which physical and social vulnerability interact.

Keywords: Social Vulnerability, Flooding, Disasters

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Session Type: Poster

Title: Hydropolitics in Central Asia: Has the Rubicon Been Crossed?

Abstract:

Since the independence of the Central Asian states, a comprehensive water management mechanism for the region has proved elusive. A key obstacle to an inter-state plan has been Tajikistan's goal of constructing the world's highest hydroelectric dam at Rogun. Recent political changes may have opened a path to greater cooperation. This presentation assesses the new political environment for water relations in the region and the potential for cooperative management in the context of the Rogun project.

Keywords: Central Asia, water management, hydropolitics, Rogun dam

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Session Type: Paper

Title: Commemorating through Cookbooks: A Recipe for Post-disaster Recovery

Abstract:

As communities recover from disasters, people seek to regain a sense of normalcy in daily lives. One routine that provides structure is cooking daily meals. This act of normalcy can provide comfort during the chaotic upheaval characteristic of the recovery period. Recipe sharing and cookbooks have been used as a cathartic outlet for survivors and even fundraisers to help the recovery process. Importantly, these cookbooks represent a type of commemorative artifact that showcases how people remember the places impacted by disaster and mark their reconstruction. In this research, we utilize content analysis to examine a set of cookbooks written in response to both environmental and technological disaster events to understand geographic themes such as place identity, reconstruction of the built environment, and cultural ties to the landscape. Through these themes, we consider how the cookbooks preserve memories of the past while also aiding in individual and community recovery.

Keywords: Commemoration, Disaster, Foodways, Material Culture, Recovery

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Session Type: Paper

Title: Red-Lighted Roustabouts: Labor Geography of the American Circus

Abstract:

The incredible geographic mobility of the circus was both a blessing and a curse, to managerial staff and manual laborers alike. Laborers could be somewhat easily controlled and replaced, but they could also use to their advantage their power to quit and their experience compared to green laborers. They could use the circus to travel and to be guaranteed food and shelter, but that guarantee was often broken by the practice of “redlighting,” in which laborers were sometimes literally thrown off the train. The social geography of the circus itself is also a topic of interest. The orientation of living spaces on both train and the lot were spatially designed to satisfy and reinforce traditional ideas of class, gender, and race “ although these barriers were sometimes fluid. Due to its unique business model, the circus both did and did not resemble other industrial workplaces of the Gilded Age and Progressive Era.

Utilizing theory and method from both labor history and historical geography, this work of synthesis will explore the geography of the circus as a traveling company town, with special attention paid to struggles to form class consciousness. Previous work done by scholars of the circus will be examined in new ways by applying these methodologies from other fields. Tentatively, I believe this study will reveal that the circus was a unique workplace in which the geographic factors at play stymied the development of class consciousness that was taking place in other major American industries during this period.

Keywords: historical geography, labor, popular culture, gilded age, progressive era

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Session Type: Poster

Title: Culture-Shift Meets Climate Change in the Early Anthropocene

Abstract:

This research explores the dangerous early Anthropocene potential of two intertwined threats, threats which together are likely to define the 21st century as the new “Axial” age. The first threat is anthropogenic planetary warming, focusing on one particularly vulnerable region, the dry subtropics, parts of which could within ~50 years approach or exceed the limits of human habitability owing to extreme heat and desiccation. The second threat is one we label “culture-shift,” an ongoing transformational worldview change from reason, experience and objective testing, leading to a phenomena of evidence denial. Comparisons are made between traditional values and worldviews versus postmodern contemporary world views and values concerning the environment. This study then concludes with a review of climate change science and a focused case study on the potential death of the Fertile Crescent region of the Middle East.

Keywords: Climate Change, Anthropocene, Cultural Values/Worldviews

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Session Type: Paper

Title: Challenges and opportunities for shale oil and gas development in Northern Mexico's Burgos Basin.

Abstract:

Shale hydrocarbon development has radically reshaped the Texas energy sector in terms of economic growth and environmental impacts. Today, Texas is the world's largest producer of shale oil and gas. In northeastern Mexico, just across the Río Grande, the Burgos Basin has high estimated unconventional reserves that could prove equally transformative to Mexico's energy sector. Additionally, recent liberalization reforms to the state-dominated energy sector ostensibly facilitate private investment in the Burgos Basin. Yet, in spite of these monumental energy reforms and the geological promise of the Burgos Basin, numerous challenges, both historical and current, constrain the development of this shale hydrocarbon region. Citing interviews with key energy actors, from academics to company officials to policymakers; this study highlights the challenges and opportunities for shale development in northern Mexico. Many themes discussed by our interviewees in the Burgos Basin reflect broader trends in Mexico's resource economy, such as knotty bureaucratic policies, the current fracking moratorium, security issues in the borderlands, infrastructure limits, shortages in human capital, and volatile global energy markets. Lastly, this paper contextualizes the opportunities and challenges to developing the Burgos Basin through a comparative analysis to their counterparts on the other side of the US-Mexico border in the Eagle Ford shale gas basin in Texas.

Keywords: Energy Geography, Unconventional Hydrocarbons, Mexico, Texas, Burgos Basin

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Session Type: Paper

Title: Assessing Greenland Blocking Index Values for Regional Arctic Sea Ice Influence

Abstract:

Due to global warming, persistent loss of both sea ice extent and area have been observed in the Arctic. These changes have implications not only for the local climate system, but for the larger Northern Hemisphere, as the Arctic acts as a climate regulator. Sea ice has decreased since the 1970s, but more accelerated rates of loss have been recorded since the 1990s; this loss of Arctic sea ice has coincided with increased instances of high pressure systems, called atmospheric blocks, in the Greenland region of 60°N, 20°W. When the Greenland Blocking pattern is strong and persistent, it causes warm air advection from lower latitudes into the Arctic region, thereby disrupting the normal, westerly flow of winds across the Atlantic and causing upper atmospheric ridging. Such disruptions can also lead to more extreme and persistent weather across the United States. This study aims to use descriptive statistics to evaluate sea ice values (of both extent and area) against Greenland Blocking Index values to test for inter-annual and intra-seasonal correlations.

Keywords: cryosphere, arctic climatology, sea ice trends, atmospheric blocking

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Session Type: Poster

Title: Analyzing Pedestrian-Involved Crash Hotspots in Hillsborough County, Florida

Abstract:

Pedestrians involved in vehicle accidents are at high risk of injury because they lack protection in the event of a collision. Hillsborough County, Florida is an especially dangerous area for pedestrians, where 1.5 pedestrians per day on average are involved in a motor-vehicle accident (Torres 2017). To maximize efficiency for planners and increase resulting benefit for pedestrians, this study aims to identify zones or hotspots of high pedestrian-involved accident occurrence based on pedestrian-involved crashes on major roads from 2012 to 2016 in Hillsborough County, Florida, USA. Using the Moran's I index, the Ripley's K-function, and kernel density estimation as exploratory data analysis tools, this study investigates possible spatial dependence for pedestrian-involved crash events in Hillsborough County and identify areas of high pedestrian risk. First, this study will apply the Moran's I Index and Ripley's K-function to demonstrate that pedestrian-involved accident sites are not randomly distributed in the study area. Next, we proceed with application of kernel density estimation to determine zones where high pedestrian risk might be associated with a high density of accidents. Identification of specific locations of high risk allows infrastructure improvement projects to prioritize resources efficiently, ultimately resulting in increased benefit to pedestrians.

Keywords: ~~Keywords:~~ Pedestrian Safety, Spatial Autocorrelation, Geovisualization

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Session Type: Poster

Title: Hurricane Storm Surge Sedimentation on East Texas Gulf Coast Marshes: Spatial Variations in Sediment Distribution in the Right-Front Quadrant of Hurricane Ike

Abstract:

This study investigates spatial variations in sediment distribution in the right-front quadrant of Hurricane Ike, on McFaddin National Wildlife Refuge on the East Texas Gulf Coast. The purpose of this study was to discover how hurricane storm surge sedimentation spatially varies in relation to the landfall location of Hurricane Ike. Fieldwork conducted in 2017-2018 involved digging shallow pits on four coastal marsh transects between Sabine Pass, Texas and High Island, Texas. Elevations were measured at each pit site along all four transects using a telescopic lens and stadia rod. The transects extend 880-1630 meters, with pit sites beginning near the coastline and extending landward. Results obtained in the field indicate that the Hurricane Ike sediment deposit has been found on all four transects, and that the deposit decreases in thickness moving landward along each transect. On Transect 1, at Pit Site 1, the sediment thickness was 61 centimeters; this same deposit gradually tapers down to a thickness of 4 centimeters at Pit Site 8. On Transect 4, at Pit Site 1, the sediment thickness was 53 centimeters, while at Pit Site 6 the deposit was 5 centimeters thick. The findings of this study provide improved understanding of the spatial relationship between storm surge sedimentation and storm surge heights, valuable knowledge about the sedimentary response of coastal marshes subject to storm surge deposition, and useful guidance to public policy aimed at combating the effects of sea-level rise on coastal marshes along the northern Gulf of Mexico coastline.

Keywords: Hurricane Ike, McFaddin National Wildlife Refuge, storm surge sedimentation, coastal marshes, sea-level rise

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Session Type: Paper

Title: A multilevel eigenvector spatial filtering model of house prices: an application to house sales in Fairfax County, Virginia, 2016-2017

Abstract:

House prices tend to be spatially correlated due to similar physical features shared by neighboring houses and commonalities attributable to their neighborhood environment. A multilevel model is one of the methodologies that has been frequently adopted to address spatial effects in modeling house prices. Empirical studies show its capability in accounting for neighborhood specific spatial autocorrelation (SA) and analyzing potential factors related to house prices at both individual and neighborhood levels. However, a standard multilevel model specification only considers within-neighborhood SA (i.e., similar houses prices within a given neighborhood), but neglects between-neighborhood SA (i.e., similar houses prices for adjacent neighborhoods) that can commonly exist in house prices. This oversight may lead to unreliable inference results for covariates, and subsequently less accurate house price predictions. This study proposes to extend a multilevel model using Moran eigenvector spatial filtering (MESF) methodology. This proposed model can take into account simultaneously between-neighborhood SA with a set of Moran eigenvectors as well as potential within-neighborhood SA with a random effects term. An empirical analysis of house prices in Fairfax County, Virginia, illustrates the capability of a multilevel MESF model specification in accounting for between-neighborhood SA present in data. A comparison of its model performance and house price prediction outcomes with conventional methodologies also indicates that the multilevel MESF model outperforms standard multilevel and hedonic models. With its simple and flexible feature, a multilevel MESF model can furnish an appealing and useful approach for understanding the underlying spatial distribution of house prices.

Keywords: spatial autocorrelation, multilevel model, Moran eigenvector spatial filtering, house prices

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Session Type: Paper

Title: Impacts of Technology-mediated Project-based Module on Secondary School Students' Deep Learning

Abstract:

Deep learning is defined as personal commitment to applying various strategies to complete given tasks in learning. The purpose of this study is to illuminate how collaborative teamwork contributes to deep learning, in the technology-mediated project-based module using mobile devices. 157 students from 5 Korean middle and high schools participated in 2 learning modules. In the "Heat Busters!", students identify heat loss in and outside of school using a thermal camera which can be attached on smartphones and find ways to reduce energy-wasting. In the "Where does the fine dust come from?" students investigate spatial relationship between the fine dust concentration and other variables in the neighborhood, utilizing a portable fine dust meter. The effect of collaborative team work on students' deep learning was examined by comparing problem-solving patterns between students working in a small group and those working individually. The data consist of video recordings of the students' work, transcripts from think-aloud, and pre- and post-survey responses of the students. The findings of this study include: (1) Students got more easily engaged in deep learning when they work in a small group rather than working individually. (2) Students' deep learning is activated in ambiguous and unexpected situations which require them to make their own decisions. (3) Collaborative teamwork helped students develop positive attitudes toward project-based learning.

Keywords: collaborative learning, deep learning, project-based learning, teamwork

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Session Type: Paper

Title: Community Geography as a Model for Engaged Research and Teaching

Abstract:

This paper examines the application of community geography as a pedagogical tool for teaching research design and techniques, while utilizing that experience to produce a research document for academic and non-academic institutions engaged in a community development partnership. Community geography is utilized as a means of evaluating a community geography project. As a research document, it addresses the viability of a proposed university research and community engagement center in DeKalb, IL. This center is proposed to function as a research center focusing on climate change, sustainable food production, and water resources, where innovations drive regional economic development. Secondly, it is designed to further function as a community facility, where the research outputs serve the community through services including a community food pantry, community food education, and sustainability education programs.

The research center proposal is examined through the lens of community geography in two ways. First, the proposal is at the core of community geography, as it partners academic and non-academic institutions for the pursuit of community and economic development. It takes aspects of known academic geography (place-making, accessibility, and interconnectedness of space) and places them at the core of a community development project. Second, the ability of the center to meet those goals is explored as the findings of a service learning course. Here, the pedagogical technique was community geography, where students learned the theoretical constructs described above, while developing skills in mixed-methods participatory research, public engagement, and the application of geographic theory and technique in pursuit of social equity.

Keywords: Community Geography, Pedagogy, Engagement

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Session Type: Paper

Title: The Impact of DACA on Mexican Dreamers, 2012-2016: A Time-Space Analysis

Abstract:

DACA (Deferred Action for Child Arrivals) was an executive order of President Obama in 2012. Within Giddens' Time-Space model of social structure, and building upon a handful of studies that have recently emerged, this study investigates the educational and occupational attainment of DACA-eligible Mexican youth over the period 2012-2016. Results indicate that DACA had a major influence; these youth both went to work and attended college at a much higher rate in 2016 than in 2012, and higher than for a comparable control group of Mexican-Americans. Overall, DACA incentivized going to work over attending college. This was particularly true in restrictive states (those not offering in-state tuition and other benefits) as opposed to supportive states. Women preferred furthering their college whereas men strongly preferred working, over the DACA period. For women, educational attainment was strongly preferred over work---just the reverse of men. For the younger cohort (18-24), DACA encouraged both working and attending college to a much higher degree than for the older cohort (25-34). These results suggest that between 2012 and 2016, DACA promoted a new class of young Mexican educated females, modernizing traditional roles within the Mexican undocumented population.

Keywords: DACA, Mexican DACA-eligible, educational attainment, occupational attainment

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Session Type: Paper

Title: The Legacy and Shadowed Ground of Jarrell, Texas

Abstract:

On May 27, 1997 Jarrell, Texas was struck by an F5 tornado. The Double Creek Estates subdivision was completely wiped-out resulting in 27 fatalities. The destruction and devastation was total. Homes in Double Creek Estates were reduced to concrete slabs. Many meteorologists consider the damage produced by this tornado to be the worst that they have ever observed. Based on the damage assessment, the 1997 Jarrell tornado is considered to be one of if not the most powerful tornado on record. How has the town of Jarrell, Texas responded to this immense tragedy? The shadowed ground produced by this tornado has resulted in a memorial park which includes a small monument and the reconstruction of a smaller yet reconstituted subdivision. According to Geographer Kenneth E. Foote such shadowed ground on the landscape represents designation and rectification.

Keywords: Tornadoes, Shadowed Ground, Natural Hazards, Texas

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Session Type: Paper

Title: Demand for Parks and Protected Places: A Social-Ecological Systems Perspective

Abstract:

Humans depend on healthy ecosystems for overall wellbeing, and healthy ecosystems depend on protection from or proper management by humans. An important resource that is fundamental to both human and ecosystem health is area set aside for parks and protected places (PPP). Because the demand for PPP is influenced by human values, environmental characteristics, and interactions between the two, I feel it is appropriate to provide a social-ecological systems perspective on this important topic. After providing a theoretical framework, I will present a couple case studies that illustrate how we can quantify multivariate demand of PPP.

Keywords: parks and protected places, ecosystem services

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Session Type: Paper

Title: VEGETATION AND LAND USE EFFECTS ON THE SPATIAL DISTRIBUTION AND ACCUMULATION OF SOIL BLACK CARBON IN AN URBAN ECOSYSTEM

Abstract:

Black carbon (BC) is a byproduct of the incomplete combustion of biomass, biofuels, and fossil fuel. Atmospheric BC is second only to CO₂ in terms of solar radiation absorption, enhancing global atmospheric temperatures. It is also a particulate pollutant that, when inhaled, increases the risk of cardiovascular and respiratory disease in humans. Fossil fuel combustion is the dominant source of atmospheric BC within urban ecosystems. While soil is likely the largest pool for BC within the urban BC cycle, there is evidence that vegetation is a significant intermediate pool, capturing BC particles and delivering them to the soil via throughfall (water that falls through canopy) and litterfall. This suggests that soils below urban tree canopies may be hotspots for BC accumulation. The main objectives of this research are to examine the spatial distribution of BC in urban soil and determine the influence of tree canopy cover and landscape maintenance on soil BC accumulation. Soil sampling was conducted at 29 sites throughout the City of Denton, Texas, in May 2019. Samples were collected from underneath post oak canopies and in adjacent open areas and are being analyzed for total carbon, total organic carbon, BC, and carbon isotopic composition ($\delta^{13}C$). Relationships between soil BC concentrations and accumulation, canopy cover, and maintenance levels will be examined. Identifying patterns and potential drivers of soil BC accumulation is important because soil BC sequestration not only reduces detrimental atmospheric effects, but also may provide additional pollution mitigation benefits, thereby contributing to a more sustainable urban environment.

Keywords: Soot, Urbanization, Carbon Cycle

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Session Type: Paper

Title: Impact of land-use/land-cover on PM2.5 in Dallas-Fort Worth

Abstract:

Fine particulate matter, abbreviated as PM2.5 is one of the major pollutants that cause many cardiovascular and respiratory health problems. Meteorological parameters and geographic factors are major contributors to PM2.5. Previous studies have used land-use/land-cover data to determine PM2.5; however, the spatial arrangement of various land uses and its interplay with meteorological factors is seldom considered. Many studies have investigated the impact of meteorological parameters on PM2.5, but the contribution of land-use/land-cover and hence that of the human activities to PM2.5 remains unclear. Segregating the effect of weather parameters on PM2.5 from the effect of land-use/land-cover can help to derive inferences about the impact of human-induced changes on PM2.5. This study analyzes and compares PM2.5 data from 8 monitoring stations in the Dallas-Fort Worth metroplex, which consists of various land-use/land-cover classes. Since all the stations are in the same climatic region, meteorology will have a relatively similar impact on PM2.5 at all stations in the Dallas-Fort Worth. PM2.5 differences between these stations will help reveal the effect of the land cover types on PM2.5. Depending on the season and surface conditions (open or vegetated), certain land cover may increase or decrease PM2.5. This study analyzes PM2.5 data at several temporal scales in conjunction with the land cover and meteorological conditions (wind direction and wind speed) at these stations for 2008-2017. Wind rose and pollution rose along with the box charts and line plots will be used to understand the effect of wind with respect to different land-use/land-cover classes.

Keywords: PM2.5, spatial arrangement, land-use/land-cover, meteorology

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Session Type: Poster

Title: Tornadoes Counts by Storm Mode in the Southeast United States Between 1996-2017

Abstract:

Scientific advancements have been proven beneficial to the study of tornadoes, as we have started to understand the intricacies of tornado climatology in the past century. However, there is still a struggle to understand these storms fully due to the inability to observe the storms up close. What makes this even more challenging is that there are no two tornadoes that are completely alike. Studies in the past have been able to classify tornadoes into three categories: super cellular, quasi-linear convective systems, and other (consisting of miscellaneous sub categories). In this study, I begin to create climatology of tornadoes in the southeast United States, specifically Texas, Arkansas, Oklahoma, Louisiana, Mississippi, Alabama, Georgia, Tennessee, and Florida. The magnitude of the tornadoes range from an EF1 to an EF5, and the years studied are between 1996 and 2017. The data will be categorized into three storm modes: super cellular and multicellular as type one, quasi-linear convective systems as type two, and hurricane-induced tornadoes as type three. The poster aims to analyze if tornadoes overall and by storm mode are increasing with frequency and magnitude over time.

Keywords: meteorology, climatology, mesoscale, severe weather

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Session Type: Poster

Title: Regimes of dispossession: Pakistan's water contamination crisis

Abstract:

This paper examines the broader implications of the water contamination crisis that emerged in the two villages of Chah Kulalawala and Kot Assadullah in the Kasur district of Punjab during the late 1990s. Industrial dumping and lack of implementation of environmental laws led to the contamination of groundwater in this area. Heavy metals and other contaminants found in the groundwater were reported to have caused bone deformities in upwards of 100 children. In an effort to encourage small industry, the government rolled back environmental policies and endangered their most vulnerable citizens: children. Despite international and local media, and community protests which led to the closure of the contaminating factories, the crises facilitated large-scale transformation of the area from a predominantly agricultural economy to a peri-urban industrial town. This transformation has significantly changed Pakistani communities' relationships with water which, once accessible to all, is now becoming a commodity regulated by the market. The privatization of water has impacted accessibility, altered peoples' livelihoods and life expectancy, and resulted in a loss of rights. Despite the promises of successive regimes, backed by international financial institutions such as the World Bank and aid organizations such as USAID, intervention has been unable to provide the right to clean drinking water. Governmental initiatives to provide potable water-filtration systems to all villages and cities in the country were stalled after facing accusations of corruption, capacity issues, and indulging institutional territory wars between local and international contractors over who would manage and profit from these projects. I argue that, despite promises, the government's role was never to ensure access to safe drinking water, but to facilitate the commodification and privatization of water in Pakistan. The crisis of water contamination and the resulting scarcity created the specific conditions for the privatization and commodification of water to occur.

Keywords: Water, water contamination, water scarcity, accumulation by dispossession, commodification of water, environment governance

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Session Type: Paper

Title: Backyard Wildlife Refuges in Albuquerque, NM: the land ethic and urban wildlife gardening for our biotic community

Abstract:

This paper presents the preliminary findings of research conducted in Albuquerque, New Mexico about community interest in participating in a citizen science program centered on creating backyard wildlife refuges. The findings discuss the analysis of a survey asking participants to engage with the ideas of actively considering the needs of the more-than-human world and intentionally creating spaces that humans and wildlife can share.

Participants were assessed in the following areas: the Connectedness to Nature scale, willingness to manage their yards in wildlife-friendly ways, choosing a quotation that best exemplifies their relationship to nature (appreciation of beauty, intense curiosity, sense of community), and self-assessment of their knowledge and awareness of the natural world.

Similar wildlife gardening programs have been extensively studied in Australia. While these programs have attracted populations already engaged in conservation behaviors, studies indicate that a strong connection to nature is not a prerequisite for participation. This research is a first step in gauging the success of attracting previously unengaged individuals to the practice of wildlife gardening.

Intentionally creating spaces that humans and wildlife can successfully share requires asking questions which must be approached from multiple geographic disciplines. The research is informed by the tenets of Human, Critical Physical, and More-than-Human Geographies in an exploration of the entanglements of humans and the more-than-human community in urban areas. The practice of wildlife gardening can be considered putting a land ethic into practice by actively enlarging our sense of community to include our wild neighbors in the landscape we call home.

Keywords: Urban Wildlife Nature Community Entanglement

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Session Type: Paper

Title: Protecting the urban forest: Variations in standards and sustainability dimensions of municipal tree preservation ordinances

Abstract:

Trees help create sustainable urban systems by providing important functions aligned with the three dimensions of sustainability, i.e., environment, economy, and society. Yet urban forest loss remains a problem in expanding metropolitan regions. To accrue urban forest services, municipalities have enacted tree preservation ordinances (TPO) to regulate tree removal. These ordinances describe not only how cities manage their urban forests but also what urban forest services they value. The goals of this research are to locate cities with TPOs in Texas, compare the scope and intent of these ordinances, and assess the extent to which they reference the sustainability dimensions of urban forest services. We documented the parameters, extent, and conditions of tree protection found in TPOs via descriptive statistics and examined their statements of purpose for references to urban forest services through a quantitative content analysis (QCA). We found 60 municipalities possess TPOs, and most are in rapidly growing metropolitan areas. Our results indicate variations occur in their scope and intent. The majority of TPOs protect trees on private property but many also contain exemptions that potentially limit their effectiveness. Over half of TPOs contained a statement of purpose with references to one or more of the sustainability dimensions of urban forest services. Communities across metropolitan areas place more emphasis on the environment and society dimensions of sustainability. Overall, our results suggest that more communities should enact TPOs with less exemptions, and the sustainability dimensions of urban forests should be explored with equal vigor and stated more clearly so that all stakeholders are equipped with a better argument of not only why to write TPOs but why to enforce them.

Keywords: Environmental policy; Quantitative content analysis; Sustainability; Tree ordinances; Urban forestry

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Session Type: Paper

Title: Subjectivity, Persecution, and Urban Space: The case of Parisian Jews, 1940-1944

Abstract:

The field of Holocaust studies has recently taken a spatial turn, borrowing concepts and tools from geography. Spatial studies of the Holocaust focus mostly on killing sites and places of persecution specifically created by perpetrators and typically rely on data produced by them. Conversely, places of everyday life and public spaces, such as homes and streets, have been generally overlooked. In this paper, we rely on six diaries written by Jews who lived in Paris during the German Occupation to explore the ways antisemitic persecution affected Jewish subjectivity in urban space. We adopt a 'multiple subjectivities' perspective to show that, first, subject formation in German-occupied Paris relied on techniques involving both bodily 'inscription' and differentiation and the resignification of urban space; and second, such efforts were resisted and taken up only partially by both Jewish and non-Jewish Parisians, resulting in incomplete and contested attempts at subjection.

Keywords: Holocaust, Urban Space, Persecution, Subjectivity, Exclusion, Othering

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Session Type: Paper

Title: How racial capitalism shapes the city: teaching with The Wire

Abstract:

Recent protest and political action against state-led violence including militarized police brutality and a growing carceral state has brought public attention to the marginalization of communities of color in cities like Baltimore. Decades of deindustrialization, disinvestment, institutionalized racism, and police brutality are part of a broader system of violence that has subjugated and oppressed people of color. In this paper, I discuss a course I co-developed to investigate these complex and difficult issues through the award-winning television show *The Wire*. I will discuss our pedagogical approach that aimed to help students critically 'read' *The Wire* to understand how conceptions of race, class, gender, criminality, homelessness, ghettoization, and other issues that "plague" the city are historically and socially produced. Our goal was to challenge students to critically explore these issues using key concepts in urban geography and political economy. I also will discuss the outcomes of this approach of teaching with film, and describe what seemed to resonate and enhance learning, and what didn't, relating to learning objectives tied to concepts such as urban decline, institutional failure and racism, illegality and policing, poverty, and other urban issues.

Keywords: urban geography, film, pedagogy, racial capitalism

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Session Type: Paper

Title: Spatial variability of glacier surface temperature based on field and aerial surveys at the Continental Glacier, Wind River Range, Wyoming

Abstract:

As the largest concentration of glaciers in the Rocky Mountains of the US, the Wind River Mountains provide critically important water input from ice and snow melt to the hydrological cycle, ecosystem, and socio-economic development of the region. While temperature is key in snow and ice melt calculations, in-situ measurements rarely exist given the logistically difficult mountain terrains. In this preliminary study, we combined the in-situ measurements of day-long surface temperature and high-resolution aerial image collection at the Continental Glacier, both conducted in the 2019 late summer, aiming to examine the dependence of temperature on the complex topography. Sub-meter resolution DEM was created using structure from motion technique based on the 643 images collected in the aerial survey. The surface temperature was recorded using data loggers set at 10 locations at different elevations and surface types. An exploratory statistical model was applied to analyze the relationship between semi-hourly surface temperature and topographic factors including elevation, slope, aspect, shielding effect and surface types. With the tentative model, the spatial variation and daily evolution of temperature were estimated across the whole glacier. Adiabatic lapse rate was also calculated for daytime and nighttime. Our results suggest the distribution of temperature is strongly affected by the cloud cover, the physiographical features, and time of the day.

Keywords: surface temperature, glacier, topographic effect, Rocky Mountains

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Session Type: Poster

Title: Who volunteers and why? Understanding environmental stewardship through community geography partnerships with two environmental nonprofits in San Marcos, Texas

Abstract:

Environmental stewardship is a growing phenomenon in the United States and a crucial asset and component to many environmental nonprofit organizations that function at various scales. Community geography is a research approach that aims to affect positive community change through emphasizing participatory research techniques and building partnerships between universities and nonacademic organizations. The purpose of this study is to understand environmental stewardship through a community geography lens by partnering with Texas Stream Team and San Marcos Greenbelt Alliance” both based in San Marcos, Texas” to (1) understand stewards’ demographics and motivations in general and (2) explore what differences, if any, exist in demographics and motivations across organizational scales. The knowledge obtained will be used by both community partners to improve organizational capacity through recruitment and retainment of a diverse volunteer pool. Two online surveys were administered via Qualtrics over summer 2019. Preliminary, descriptive results (n=487) indicate stewards are largely white, female, well-educated, and over the age of 55. Top motivations are “want to help or enhance the environment”; “want to help the community”; and “want to get outside and connect with nature.” Most stewards disagree or strongly disagree that they are motivated by career advancement or engagement(s) with other people. Major differences in motivations that may be attributable to organizational scale are social interactions with like-minded people (San Marcos Greenbelt Alliance) and learning/sharing knowledge (Texas Stream Team). Implications of the research results and approach are discussed.

Keywords: Community geography, environmental stewardship, volunteerism, nonprofits

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Session Type: Poster

Title: A Time-Geographic Approach to Identifying Daily Habitat Use Patterns for Amazonian Black Skimmers

Abstract:

Analysis of movement patterns at fine temporal scales may suggest how animals interact with their surrounding habitat. This is particularly useful in determining not only where animals may spend their time, but when and how likely they may be to interact with or utilize specific habitat resources. For practical conservation concerns, information on animal-habitat interactions should be considered at the population level. This paper applies and extends two approaches from movement analysis literature, the probabilistic voxel-based space-time prism and the comprehensive probability surface, towards quantifying diel habitat interaction probabilities for multiple individuals over time. We evaluate this approach using tracking data for a Black skimmer (*Rynchops niger cinerascens*) population traversing Manu National Park, Peru and surrounding areas. Habitat interaction graphs were constructed summarizing animal interaction by habitat type and time of day for all individuals tracked. Utility of this method for conservationists and related researchers is discussed.

Keywords: animal interactions, movement, habitat utilization, habitat selection

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Session Type: Paper

Title: Both push and pull: Why geology made England the most likely place in Europe to turn to coke

Abstract:

The question of why the transition from charcoal to coke in iron-making occurred where it did is investigated. In particular, the geographic endowment of both coal (frequently analyzed) and iron ore deposits (generally not investigated in prior literature) 221 European iron fields are examined. An estimate of the quality of pig each ore can produce is generated. Iron fields that are both: 1) fuel hungry (low % Fe), and 2) able to produce a decent quality of pig (to survive the quality decrease coking will introduce) should feel the strongest “push” away from charcoal. Next, iron ore fields are screened for proximity to cokable coal. This is the “pull” toward coal. The results points to 7 European iron fields (or 12 using a less rigorous criteria) that are the best candidates for the transition to coke. 5 of these 7 are English. These include Coalbrookdale and South Staffordshire where England first turned to coke in iron-making. By less rigorous criteria, 8 of 12 candidate fields are in England or Wales.

Keywords: Coal, Iron, Industrial Revolution, England

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Session Type: Paper

Title: The relation between wildfires, prescribed fires, and drought in Oklahoma

Abstract:

Wildfires are known to cause damages to society and the environment, costing millions of dollars for suppression and property damages. With the ongoing climatic changes, we expect to see an increase in wildfires due to the increasing temperature and precipitation extremes. The purpose of this research is to determine if there is relation between the occurrence of wildfires and the annual average precipitation and temperature in the state of Oklahoma. Data was obtained through the Oklahoma Climatological Center and the National Interagency Fire Center. We used Excel to plot the number of wildfires and prescribed fires and total area burnt statewide with precipitation and temperature year to year. Our results suggest that there is a timing relation between the annual number of prescribed and wildfires with annual precipitation. The data revealed that the decrease of prescribed fires during dry years was followed by an increase of wildfires due to the accumulation of biofuel in times when our annual average temperature increased. However, precipitation showed to be the most important factor in the number of wildfires and acres burnt due to its mayor role in determining the growth of vegetation biomass for fuel. The purpose of this research is to help us better understand the management of the environment for protection against wildfires within the frame of ongoing climatic changes.

Keywords: Drought, Wildfires, Prescribed Fires, Precipitation, Oklahoma

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Session Type: Poster

Title: Quantifying Aesthetics: Using Curb Appeal to Evaluate Neighborhoods

Abstract:

Gentrification and urban revival movements can be largely classified into three types, Economic, Demographic, and Aesthetic. In reality, gentrification or urban revival is often presented as a combination of the three types. Understanding how aesthetics differ between neighborhoods, and how it changes over time can offer a more complete picture of how gentrification changes an urban landscape. This project utilizes an objective aesthetics classification scheme to compare multiple neighborhoods for their curb appeal and attempt to understand how neighborhoods naturally differ before gentrification comes into play.

Keywords: Gentrification, Aesthetic Gentrification, Urban Landscape, Neighborhood Aesthetics

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Session Type: Poster

Title: An Analysis on Food Security in Waller County

Abstract:

Food security is defined as the state of having reliable access to enough affordable and nutritious food. Access to nutritious food commodities has been a problem within the state of Texas. Waller County experiences problems of accessibility despite being one of the smallest counties in terms of area. Residents who live in rural parts of the county and do not have access to transportation could have to walk about two, three, or even ten miles to get their food and travel back home. This research used a case study approach in order to obtain an in-depth appreciation for issues surrounding access to nutritious food in the county. Used census tract level data from the U.S. 2010 Census in the project. ArcGIS 10.5 was used to conduct analysis at the 1, 2.5, and, 5 miles walking distance from food locations. Factors of focus in the study are population density, location of grocery stores, produce store only, meat only, convenience stores, and restaurants. The results revealed that few people in rural areas have stores within 1, 2.5, and, 5 miles away. The research demonstrates that food problems of accessibility persist in Waller County in fall 2019. Recently, efforts such as a farmers market, community garden, and food pantry at Prairie View A&M University have been launched in order to address food insecurity across the county. Future studies will include a survey of residence and analysis of U.S. Census American Community Survey data to assess the effectiveness of these efforts.

Keywords: Food Security, Urban and Rural Food security, Food desert

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Session Type: Poster

Title: Schools, Property, & Race: Examining the Political Economy of the Education Funding Crisis in Texas

Abstract:

The 2019 Texas Legislature delivered a multi-billion dollar budget boost to school districts and tax relief to property owners. Decades of school funding inequities are far from reversed however. The ethos of neoliberalism promotes inequality and sustains the elements of racism and class. Rather than promoting social mobility or political egalitarianism, many of the core policies in the Texas school funding package serve to undercut the successes of the public school system. Critically, as the state holds the second largest school system in the nation, policies of uneven development are more greatly magnified in Texas than in similar cases. This paper examines the historic and contemporary political economy of school funding in Texas, centering analysis from a lens of materialism and anti-racism. Archival information and geographic information technology expands on human geography perspectives and confirm the inadequacy of the property tax funding mechanism relied upon in Texas.

Keywords: Neoliberalism, Education, Government, Inequality, Race

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Session Type: Paper

Title: Schools, Property & Race: the Political Economy of the Education Funding Crisis in Texas

Abstract:

The 2019 Texas Legislature delivered a multi-billion dollar budget package to boost school funding and relieve property tax rates across the state. However the legislation does not reverse decades of inequities and rather than promoting social mobility or overhauling funding sources, the core policies serve to undercut the public school system. Texas is a critical case study as the second largest school system in the nation. This examination of public data and archival information from the Texas education system shows that entrenched neoliberal policies magnify a history of uneven development.

Keywords: Neoliberalism, Education, Government, Inequality, Race

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Session Type: Paper

Title: Reconstruction of Hurricanes Florence and Harvey with NOAA's Reanalysis Model

Abstract:

In 2018, Hurricane Florence made landfall in the Carolinas. She dropped 40 inches of rain and the resultant flooding was perhaps the worst in modern history. In 2017, Hurricane Harvey devastated the Texas Coast with up to 50 inches of rain and caused catastrophic flooding in the Houston. The atmospheric environment of these hurricanes can be reconstructed with data from the reanalysis model. "Reanalysis" is a comprehensive, global atmospheric data set produced by the National Centers for Environmental Prediction. Thus, reanalysis is a tool by which the meteorological process operating in these hurricanes may be examined both before and after landfall. In addition, the surrounding pressure gradients and winds that guide the hurricane along its track can also be explored. The results indicated that Florence had a conventional guidance structure moving westward along the southern edge of a high-pressure cell before making a northern turn toward Kentucky. In contrast Hurricane Harvey displayed a noticeable lack of atmospheric guidance showing little movement as the precipitation totals went off the chart. In both cases high pressure cells controlled the storm's movement and track.

Keywords: Hurricane Florence, Hurricane Harvey, reanalysis model, hurricane track.

Keywords: Hurricane Florence, Hurricane Harvey, reanalysis model, hurricane track.

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Session Type: Poster

Title: Women and Detention at the U.S. Southern Border, 1903-1917

Abstract:

Scholarship that explores U.S.-Mexico border enforcement prior to 1917 largely centers on the regulation of Chinese immigration, the movement of illicit commerce, and the Mexican Revolution. Such important work reveals much about the surveillance of bodies and goods during an early period of regulation at the southern line, but the spatial configuration of immigration control, its built landscape and detention conditions is less known. Facilities for the exclusive use of the immigration service appeared along the southern boundary line as early as 1904, with detention rooms quickly following two years later. Contributing to this growth were the Chinese Exclusion Acts which redirected male migrant streams to the southern line by 1900. Likewise, by 1905 surveillance and rejections of non-Asian male migrants due to disease, contract labor, and destitution ebbed and flowed parallel to labor needs. However, at a time when non-Asian, able-bodied men crossed the southern line relatively unencumbered, the presumed sexual immorality of non-white women also provoked federal action. As a result, Mexican female border crossers who were single, pregnant, prostitutes, women in sexual relationships outside of marriage, and/or women involved in an interracial union became caught in the web of surveillance and were denied entry, faced detention, and/or were deported. When the Bureau of Immigration began to imprint itself onto the landscape through privately owned and federally managed immigration stations and detention facilities, gender was a principle element in their early construction.

Keywords: Immigration, Detention, Gender, Borderlands

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Session Type: Paper

Title: Changing Geographies of Flood Mitigation Policies: A Case Study of Central, Louisiana

Abstract:

While residents of coastal regions are often aware of the risk they undertake by settling in these areas, issues of flooding are also a monumental problem for inland communities. The city of Central, Louisiana is one that will quickly see the effects of an inwardly moving coastline. Previously a part of Baton Rouge, Central is a relatively new development that expanded into the 100-year floodplain in 2005. This poster will present the changing geographies of flood mitigation policies since a major flood in 1983 to the present, with particular focus on the lead up to and immediate aftermath of catastrophic flooding events that occurred in 2016. Drawing upon interviews and review of public policies the poster will show the paradoxes in government planning when it comes to safe versus economic development, summarize expressions of community opinion and input in flood planning, and compare them with policy change in recent decades. A changing coastline can put major stress on both the communities that are being lost and on those that are morphing into their new role, and they must be given the proper resources to be able to succeed in leading the way into a more fluid policy arena. The results of this comparative analysis indicate a lack in evolution of government policy to match the speed of development into flood-prone areas, the recent growth in public expressions about flood safety and the lack of prior adaptations taking coastal encroachment into consideration when planning adaptation and mitigation strategies.

Keywords: flood mitigation, adaptation, resilience

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Session Type: Poster

Title: “Heads I win, tails you lose”: Negotiating Who Benefits from Extraction on Split Estates in West Texas Relinquishment Act Lands **Abstract:** The United States is the largest producer of hydrocarbons in the world and will become a net exporter of petroleum within the next six months. A group of stakeholders who are most likely to benefit from this production are subsurface property owners. Yet, mineral ownership is complex in that the surface owner and the mineral owner are not required to be the same person: a common situation referred to as a “split estate.” This research seeks to answer: “Who benefits from extraction in split estate properties and how are those benefits negotiated?” Across 6.3 million acres, the state of Texas owns the mineral estate while the surface is privately held. These split estates are referred to as Relinquishment Act Lands. Based on archival research and semi-structured interviews conducted from 2016 to 2018, I detail the extraordinary history of the 1919 Relinquishment Act and how powerful west Texas landowners still host government oil wells on their ranches. Second, I explore how Spanish colonial laws are embedded in Texas property laws. Third, I illustrate how the Relinquishment Act was as much a conflict over resources as a struggle over Texan identity. I offer that the Relinquishment Act illuminates one possible solution to the economic injustices associated with split estates by allowing the surface owner access to the production revenues and a stake in the lease negotiations.

Keywords: Governance, Split Estate Doctrine, Mineral Rights, Property Pluralism, Trust Lands

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Session Type: Paper

Title: Enacting interdisciplinarity: Lessons from crafting a multi-dimensional, experiential field study

Abstract:

Q: How do you build a comprehensive field study that fulfills the requirements for several distinct courses, with differing credit values, that serves both undergraduate and graduate students?

A: With a lot of planning and forethought!

This paper details the development and implementation of a 3- to 6-credit hour field study, open to undergraduate and graduate students, in central Italy that explores the topics of geography of food and agriculture and environmental philosophy and ethics. The course has run twice, in 2016 and 2018, and will run again in 2020. The field study, in its current formulation, involves eight distinct courses; we outline how these courses map onto the program and each other, describing the ways in which the study is scalable for credit differences as well as student level. As more than half of the **Contact** hours are comprised of out-of-class experiences, versus traditional in-class instruction, we describe how to leverage experiential learning toward the goal of content retention and synthesis while effectively bridging disciplinary differences. Although the process of building this field study has been challenging, it has also been incredibly satisfying and worthwhile. As such, we describe how this multi-dimensional, interdisciplinary field study was fashioned into a coherent whole with the goal of sparking creative thinking for others' teaching approaches, whether their courses are offered as stand-alone units or as part of an interconnected sequence and whether those courses are offered on instructors' home campuses or abroad.

Keywords: field study; experiential education; pedagogy; geography; philosophy

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Session Type: Poster

Title: GIS Modeling for Assessing Landslide Vulnerability in Kenya

Abstract:

Landslide vulnerability modeling can be helpful for sustainable development and hazard mitigation. Kenya has numerous hazard-prone areas due to landslide vulnerability that never been addressed in previous research. In this study, we developed a weighted-overlay Geographic Information System (GIS) model and a fuzzy logic model to assess landslide vulnerability in Kenya. Both models considered the major causative factors and their impact on the documented landslides in Kenya, including lithology, slope, elevation, soil, land-cover, distance to fault lines, distance to major streams, distance to roads, precipitation, and distance to earthquake-occurrence locations. The relationship between these factors and the documented landslide events has been evaluated and weighted according to their relative importance using the Analytical Hierarchy Process (AHP). Approximately 30% of the total area of Kenya is susceptible to landslides, and our models were able to identify four distinctive landslide-vulnerability zones in Kenya; namely low, medium, high, and very high. A dataset of 130 historical landslides was used for validating the two models. About 98% and 85% of the past landslide events coincide within the highest zones of landslide vulnerability identified by our GIS weighted-overlay and fuzzy logic models, respectively. This indicates that the created models are reliable and can benefit future planning, as well as can help mitigate landslide hazards in Kenya.

Keywords: Landslide vulnerability, GIS, Weighted overlay, Fuzzy logic, Kenya

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Session Type: Poster

Title: Diurnal processes of photosynthesis and their effects on the calibration of evapotranspiration models based on vegetation indices in the American Southwest

Abstract:

Land management decisions should incorporate reliable estimates of energy and water available within the managed ecosystem or watershed. Studies in Central Texas savannas and in Southern New Mexico's open-shrublands have demonstrated that evapotranspiration accounts for 60% to 90% of incoming precipitation within the same watershed. These measurements of evapotranspiration from various models have been incorporated into different water conservation plans and policies in multiple southwestern states which in turn supported land and wildlife management decisions.

Using the International Geosphere-Biosphere Programme vegetation classification system, photosynthesis was analyzed at a diurnal scale to assess the impact of timing (of space as well as ground derived measurements) on the calibration of evapotranspiration models based on vegetation indices that incorporate photosynthetic active radiation ($0.38 \text{ " } 0.70 \hat{\text{m}}$). Beer-Lambert's Law was used to model the non-linear and linear relationships that exists between crop coefficients derived from eddy covariance systems and MODIS based measurements of various vegetation indices at different temporal scales in woody savannas, open-shrublands, and grasslands of the American southwest. Using high temporal resolution ground-based measurements of the normalized vegetation index along a southern California climate gradient, we determined the range and peak values and compared them to values derived from MODIS' Terra and Aqua satellites at their respective times of overpass in the study area. Results indicate that temporal differences [on a 24 hour basis] need to be considered during the calibration of estimates involving vegetation indices and evapotranspiration modeling.

Keywords: Latent Heat, Diurnal, Ameriflux, Remote Sensing, Spectral Index

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Session Type: Paper

Title: Pedestrian Practices for Applied Geographical Research/Field-work

Abstract:

In this paper I explore mobile research/field-work in terms of methodology and methods employed. I am calling this work pedestrian practices, using as a point of departure what geographer Cynthia Katz said about doing field-work (See "Playing the field: Questions of fieldwork in geography"): it is a discursive and spatial practice that is not necessarily in a space marked off in space and time. Furthermore, she says: "we always already in the field," everyday life is the field.

In geography, mobile research methods have gained attention, particularly in a world in which sitting in front of a computer, texting with friends, and virtually traveling the world has become the norm. Hayden Lorimer's work (also see: Tim Ingold and Katrina Lund) on pedestrian geographies is, as he says, "grounded in participatory outdoor practice and ethnographic method. walking as a series of embodied and mnemonic acts "moving, navigating, collecting, framing, and recording." This bi-pedal kind of mobility is a particularly intimate way of experiencing and getting to know the world. My intention, in presenting at the conference, is to dig a little deeper into this interdisciplinary and dialogic work, emphasizing the embodied nature of applied geographical field-work. I hope to be able to start a conversation with other applied geographers about pedestrian practices and the various methods and techniques people use when studying the field/everyday landscapes.

Keywords: applied geography, critical geography, ethnography, (the) everyday, fieldwork, methodology, methods

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Session Type: Paper

Title: Using music and film to enhance pedagogy in the World Regions Classroom

Abstract:

In this paper I will discuss how I use music and film in a 100-level geography class, Introduction to World Regions. As stated in the CFP, films can “serve as powerful pedagogical tools;” a far cry from my 1970’s junior and senior high school experience in social studies classes when there were many days of the school year when we spent entire class periods watching films. The teacher would have the 16mm film projector set-up as we filed into the classroom, he’d turn on the projector and walk out of the room, sound on high (I guess this was meant to blast us into submission). The teacher would return 47 minutes later just as the film reel ended. This is not at all what I do! Last year I started scheduling Fridays as “Film Fridays.” I show clips from popular movies, art films, and documentaries; as well as TED Talks and videos from a variety of sources (e.g., Yale E360). Based on mid-term and end-of-semester evaluations I decided to continue this practice this academic year. All of the students said they enjoyed the music (as they walked into the lecture hall) and the films, some even had constructive feedback for improving Film Fridays. Based on their feedback I believe that I have improved Film Fridays as a pedagogical practice and as a way for students to viscerally connect with course material. I am eager to participate in a conversation about how others use film (and music) in the classroom.

Keywords: film, music, pedagogy, teaching, world regions

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Session Type: Paper

Title: A MATLAB-based digital elevation model (DEM) data processing toolbox (MDEM)

Abstract:

A MATLAB-based digital elevation model (DEM) data processing toolbox called MDEM is built upon an improved DEM data processing algorithm, known as the PDEM, for rectifying flat areas and depressions in DEM data and producing realistic patterns of flow accumulation and extracted channel networks. Compared to the original PDEM, the computation efficiency of the MDEM has been improved significantly through adding one “fill sink” step (i.e., replace all sink pixels’ elevations in a depression by the lowest elevation along the boundary of the depression) prior to applying the linear interpolation to treat each depression. The MDEM has a graphical user interface (GUI), and six functions including rectify flat areas and depressions in DEM data using the improved PDEM algorithm, calculation of flow direction, calculation of flow accumulation area, watershed delineation, extraction of channel networks, and calculation of the topographic index. All these functions are essential for computing useful topographic variables for hydrological modeling and applications.

Keywords: MATLAB, digital elevation model (DEM), flat and sink pixels, flow direction, flow accumulation area, channel networks, topographic index

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Session Type: Paper

Title: The Settler Colonial Narrative in Oklahoma: A Bank's Concept of Progress

Abstract:

BancFirst, a prominent financial institution in Oklahoma, has created a series of semi-animated 60-second television spots to tell of its role in fostering progress in the state. Each spot focuses on a community, an institution, or the state itself to tell the role the bank has had in shaping them. Most spots promote a particular settler colonial narrative, the Land Run, in transforming what was deemed empty space into civilized, thriving Western society, and in doing so erasing pre-Land Run and ongoing Native American societal and institutional presences. Using phrasing such as "it was an empty prairie in the vast unassigned lands of the Oklahoma Territory until a railway paved the way for change" and "for centuries it was a wind-swept prairie until the Run of '89 saw settlers scramble for land and life in a newborn town," BancFirst recreates and reinforces the settler colonial narrative in depicting how Oklahoma came to be and what in its mind constitutes progress. Landscape changes often flow from right to left, recalling the east-to-west progress of Manifest Destiny as socially and materially constructed over 150 years ago in art and narrative such as American Progress, bringing civilized light to the darkness of wilderness. The discourse (re)constructed by these spots helps reinforce a story about Oklahoma that appears to be accepted as true and unquestioned by the populace, and one that was adopted by Central Oklahoma Habitat for Humanity to bring new "settlers" into a "Land Run for Legacy Estates" housing campaign.

Keywords: settler colonialism, progress, land, narrative, Oklahoma

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Session Type: Paper

Title: Integrative modeling for addressing water scarcity issues in the Rio Grande/Rio Bravo Basin

Abstract:

There has been growing interest in modeling cross-scale interactions between human activities and ecological dynamics under environmental and socioeconomic changes. Building such models requires a broad range of knowledge and skills, but also tools and methods to integrate the varying inputs. Here, we present how we approached this challenge to develop an integrated model for the Rio Grande/Rio Bravo Basin (RGB) for exploring future scenarios of water availability under a set of climate projections, water management, and land-use strategies. Our research builds on an interdisciplinary collaboration between environmental modelers and anthropologists, and uses empirical data collected from interviews and participant observation with local stakeholders. The model development included: a collaborative conceptual mapping exercise that captured and documented key relationships between the social and the ecological components in the RGB; the co-design of a typology of actors with decision-making authority over land and water resources; and the creation of a socio-environmental geodatabase that synthesized datasets, mapped the spatial heterogeneity across the basin, and enabled spatial analyses. Those outcomes were then integrated into a simulation model based on the ENVISION framework. The simulation model includes three intertwined sub-models: a semi-distributed hydrological model, a land change model, and an agent-based model. The framework enables us to simulate water and land management strategies of actors, changes in crop patterns, and to estimate resulting streamflows and evapotranspiration. This modeling approach, novel in its spatial and interdisciplinary scope for the RGB, brings innovative perspectives for the study and simulation of cross-scales interactions in socio-environmental systems.

Keywords: Integrated Modeling, Interdisciplinarity, Socio-Environmental System, Water management, Rio Grande/Rio Bravo Basin

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Session Type: Paper

Title: Rainfall erosivity patterns in three Brazilian tropical Atlantic Forest watersheds

Abstract:

Water erosion is a major driver of landscape degradation and sediment accumulation in humid tropical watersheds. Along with soil characteristics, topography, and land use-practices, rainfall erosivity “the power of rainfall to cause erosion” is a key factor controlling soil loss. Here, we examine spatial and temporal patterns of rainfall erosivity in three tropical Atlantic Forest watersheds, where Payments for Watershed Services programs seek to reduce sediment loads through land-use interventions including forest protection and restoration. Rainfall data were collected every 15 minutes to hourly by local water producer projects in the Camborião, Extrema, and Guandu watersheds. These data will be used to calculate hourly erosivity using the EI60 index. Annual erosivity will then be estimated per watershed by summing the individual EI60 values of erosive events (i.e., events with cumulative rainfall amounts ≥ 10 mm and separated from other events by a 6-hour dry period). Annual and seasonal rainfall erosivity values will be compared among watersheds. Understanding spatiotemporal patterns of rainfall erosivity is important for assessing water erosion potential in these watersheds currently and under future climate change.

Keywords: soil erosion, humid tropical forest, seasonality, Payments for Watershed Services

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Session Type: Poster

Title: Commemoration on Foot: Identities and Motivations of Joplin Memorial Runners

Abstract:

An EF-5 tornado struck Joplin, Missouri on May 22, 2011, leaving 25 percent of the structures in Joplin destroyed and an additional 50 percent damaged. On the ground for 38 minutes, the tornado claimed 161 lives and injured over 1,150. Both spontaneous and formal memorials appeared in the days and weeks following the disaster. The Joplin Memorial Run (JMR), rebranded in 2012 as a memorial to the tornado victims, draws participants from across the country to run in the events and perform commemorative activities. The JMR offers a half marathon, 5k, team relays, and a children's fun run in addition to the Walk of Silence, a remembrance honoring those who perished in the tornado. Given that the JMR seeks to draw runners and memorializers, this study examines the role of the memorial race in the long-term community recovery and specifically asks, what are the runners' motivations for participating in the race events? To answer these questions, we attended the 2018 JMR and conducted over 400 semi-structured interviews with race participants in addition to participant observations from the race day and the Walk of Silence. The research identified that while some people attended the JMR solely as a runner or memorializer, most participants cited multiple motivations for their involvement: a love of running, paying tribute to lost loved ones, supporting Joplin's ongoing recovery, and strengthening community and familial bonds. Finally, we consider the ongoing role of the JMR in the recovery of Joplin.

Keywords: Commemoration, Memorials, Joplin, Marathon, Tornado

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Session Type: Poster

Title: Simulacra in the Post-Modern American City

Abstract:

Simulacra are images without the substance or qualities of the original. Jean Baudrillard pioneered the concept of simulacra and its application in the fields of philosophy and post-modern society. Urban geographers, such as Michael Dear and Steven Flusty, have used the term to describe post-modern American cities. Urban simulacra can be described as intentionally distorted copies that cultivate their own particular reality as commercial attractions designed to sell goods and services. The Fort Worth example of Sundance Square as a simulacrum of Hell's Half Acre is analyzed in this context.

Keywords: urban geography, post-modern, simulacra, Fort Worth

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Session Type: Paper

Title: Black Geographies and Model Pedagogies in a Multigenerational Classroom

Abstract:

Even after living in Nacogdoches for decades, one easily overlooks preserved cultural elements associated with slavery. In reaction, a unique learning community formed and created “Black Geographies (GEO 375).” The enrollees in this experimental class include a cohort of students born after 1998 joined by seven retired black students born between 1935 and 1954. The retirees include published authors, a doctor, a minister, a scientist, and retired educators. This paper conceptualizes a process for creating a model Black Geographies program. We build on Katherine McKittrick’s work seeking deeper understanding of the “fantastic nowhere” of black life and unexpected “modes of being human.” In our special class, we challenge ethnocentric notions of race and urban history in a way that one white geographer could never do alone. This paper details privileged notions of place, provides alternative interpretations for landscapes perpetuating thoughtways of slavery, and offers a new historiography for geographers.

Keywords: Black geographies, Critical methods, Community geography, Historical geography

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Session Type: Paper

Title: Racial Demographics and Abolitionism in Nineteenth-Century Puerto Rico

Abstract:

Although it is now part of the United States, Puerto Rico existed under Spanish rule for over 400 years and experienced slavery for approximately 360 of them. Puerto Rico's journey toward abolition in the nineteenth century, ending with emancipation in 1873, was unique because a combination of internal and external factors helped to shape it: geography and topography, the island's racial and ethnic demographics, and Spain's dynamic liberal economic policy toward the colony. This work uses data from the Trans-Atlantic Slave Trade Database to depict the geographic origin and volume of enslaved Africans who landed at Puerto Rico in the duration of a 339-year period. The work also heavily utilizes demographic data compiled by historian Luis A. Figueroa to create maps that provide both historical context and visual explanations for how geography and topography shaped Puerto Rico's racial demographics and thus its slave labor force. Map analyses show that planters concentrated slaveholdings in the coastal plains, leaving the difficult livelihoods of enslaved blacks and libertos (freed slaves) open for observation by the more privileged classes of Puerto Rican society. This work examines nineteenth century abolitionists' writings to identify a unique quality of abolitionism in Puerto Rico: that the movement began primarily among the island's class of educated elites and included a wide variety of arguments in favor of the abolition of slavery. Few academic historians in the United States publish on abolitionism and slavery in Puerto Rico, leaving ample room for future historical works, maps, and digital humanities projects.

Keywords: abolitionism, Puerto Rico, slavery, race

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Session Type: Poster

Title: Post-Disaster Communalism

Abstract:

Disasters disrupt routine operations and permanently alter the physical organization of cities, including how land is used and managed. Accompanying the rise of neoliberal politics, we observe the emergence of quasi-public spaces following a disaster event. Through mixed-methods case study analysis, we examine how two disaster events, riverine flooding in Lexington, Kentucky, and Hurricane Katrina in coastal Mississippi, altered private land use. Terming this shift from private to greater public use post-disaster communalism, we explore themes of access and belonging in these urban spaces and examine the mechanisms that produce communalism. Further, we consider implications of post-disaster communalism for community recovery and resilience.

Keywords: land management, open space, buyouts, insurance, place attachment

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Session Type: Paper

Title: Patterns of Disaster Commemoration in Long-Term Recovery

Abstract:

The post-disaster landscape is replete with memorials that help communities collectively remember destructive events and recover psychologically. Although commemoration is intrinsic to all stages of recovery, little comparative research from the disaster science field has engaged memorial texts across disasters. Meanwhile, a rich body of work on memorials and their functions exists in the cultural geographic tradition. Drawing from this literature, the current study examines a sample of U.S.-based memorials to discern patterns within the post-disaster commemorative landscape. This research leverages discourse analysis to interrogate the meanings and mechanics of post-disaster memory work. Findings revealing that 1) disasters catalyze remembrances that remake places, 2) post-disaster memorial texts construct wide-ranging degrees of intimacy, and 3) memorials distilling survivor memories impel community recovery differently than memorials that reconstruct imagined pasts. These identified patterns in post-disaster commemoration enable further systematic exploration of memory work in the long-term recovery process.

Keywords: community recovery, sense of place, social memory, memorials, performance

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Session Type: Poster

Title: Texas Centennial as an Empire Exposition and a Landscape of White Supremacy

Abstract:

The 1936 Texas Centennial at Fair Park was self-defined empire exposition like other empire exhibitions and colonial expositions in the 1930s in a world wide system of white supremacy and is a triumphalist presentation of white supremacy.

Comparisons of the Texas Centennial to other empire exhibitions show how Art Deco and modernist architecture is used these events to advance white supremacist ideas.

Understanding it as an empire exhibition and comparing it to other like events elsewhere make it very clear why the Hall of Negro Life was torn down and two Aaron Douglas murals destroyed.

Additionally, the six-nations six-flags conceptualization of Texas history was used to structure the physical layout of the Centennials buildings, to shape understanding of Texas history as that of the agency of white people in a historical progression, promote the Confederacy as an equal to the United States, and erase non-white people from Texas history.

Keywords: Texas Centennial, empire exhibitions, colonial expositions, Fair Park, Dallas, Art Deco, architecture, Six-Flag, Texas, modernity, Hall of Negro Life, Aaron Douglas, white supremacy, racial hierarchy, Confederate, Confederacy

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Session Type: Poster

Title: I Felt So Lost: Returning Home after Hurricane Sandy

Abstract:

The days and weeks following a disaster can be a challenging time for displaced residents. The desire to return to one's home coupled with the risks and uncertainty associated with making the return trip often make decisions of when and how to return difficult. This study explores the return-entry experiences of New Jersey residents following Superstorm Sandy (2012). A series of 6 semi-structured focus group interviews were conducted in three communities along the Jersey shore in order to identify common patterns and themes in the experiences of returnees in the days and weeks following the storm. Qualitative analyses revealed a common temporal pattern in how returnees navigated the return-entry process: (1) Planning and Initiating the Return Trip, (2) Getting Back Home, and (3) Experiences upon Arriving Home. Within these three phases, key themes related to challenges and experiences during each of these periods were identified. This presentation will discuss these emerging themes and offer insights into how the return-entry experience may influence the longer-term recovery trajectories of households and communities following disasters.

Keywords: Return-Entry, Sandy, Displacement, Disasters

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Session Type: Paper

Title: The Paradox of Community Tourism in the Maya World: An Analysis of Ecotourism in Uaxactun, Guatemala

Abstract:

A paradox defines tourism destination in Uaxactun, Guatemala. The forest community and surrounding Maya archeology site by the same name are located mere miles from the UNESCO World Heritage site of Tikal, yet Uaxactun remains largely off the tourist trail. The village is surrounded by tropical rainforest flora and fauna that offers eco-tourism opportunities. Uaxactun is home to the most precise Classic-Era observatory in the Mayan World, an onsite museum with over 500 artifacts, and residents offer tours of the sites and community that detail the viability of community-led resource management. Community-led tourism holds the potential to alleviate poverty for village residents, as well as provide resources to solidify the community's land claims against outside interests in the region's cultural and natural resources. Our research evaluates the successes and challenges of past development strategies, and identifies tourism products and marketing strategies to further develop Uaxactun tourism sector. Twenty-five interviews and six weeks of participant observation research reveal that there is little to no promotion of the site. Larger regional concerns regarding security also hinder tourism growth, in addition scarce accommodations in the village, and inadequate transportation. These issues could be resolved by Guatemalan state investment in Uaxactun tourism infrastructure, transportation, and promotion. The lack of state investment in Uaxactun, we argue, is related to broader struggles over territory and future tourism development in the Maya Biosphere as a whole. The practical and conceptual insights resulting from this work could inform future grassroots, community-led tourism development strategies in Uaxactun and rural and forest communities across the Global South.

Keywords: tourism, community, Maya, archaeology, development

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Session Type: Paper

Title: Putting Kitchen Stories to work: How to Teach about the Geopolitics of Knowledge Production

Abstract:

Situating one's own knowledge production has become standard procedure for many research scholars, especially critical geographers who are keen to collaborate with historically marginalized community partners and challenge the status quo. But how to teach students about this important intellectual and political exercise? With a shout out to University of Kentucky biogeographer, film connoisseur, and long-ago (when email was new) pen pal Tony Stallins, this paper suggests how the 2003 Norwegian movie *Kitchen Stories* can assist with this pedagogical task, particularly in classes concerned with research methods. Bent Hamer, master of Scandinavian comedy (or, if you like, Nordic humor), directed this feature-length fiction film. It narrates the arrival of Swedish scientists in a rural Norwegian community sometime during the early 1950s. Keen to collect empirical data about the ways single men utilize their kitchens, these researchers strive for a positivist protocol of pure observation, unsullied by human interaction. I argue that introducing, screening and discussing this film offers rich and engaging illustration of how researchers inevitably navigate not only the institutional hierarchies of the academy, but also geopolitical tensions. It provides an excellent entry point to a semester long study that prepares students to more successfully articulate their social locations, aesthetic predilections, and personal commitments with the research strategies they chose to mobilize.

Keywords: geography education, research methods, geopolitics

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Session Type: Paper

Title: Threatening Weather Events and Oklahoma Mesonet Web Hits

Abstract:

The Oklahoma Mesonet has over 120 sites reporting environmental data every 5 minutes. Data are quality-controlled and available to the public in near real time on the Web. Research on the public use of weather data systems is not common. The combination of the spatiotemporal scale of Mesonet data and the number of Web hits make it possible to statistically contrast the use of the Mesonet between threatening events and non-threatening times. Using the NOAA's Storm Events database, we sorted for Oklahoma events and the Google Analytics data tracking Mesonet Web hits, we compared the timing of events to Web hits. We studied (April 2011 - August 2019), starting with the first Google Analytics data available to us. Our study encompassed millions of hits and covered the storm seasons of nine years. May 2019 witnessed plentiful high-end tornado/thunderstorms/flooding events and, as expected, the Mesonet Web site recorded its two highest days of hits in its period of record. In general, high end weather event days generated the more Web hits than benign days. However, there were also significant hour-of-the-day, seasonal, and day-of-the-week trends. Did our Web hits increase with a user's proximity to threatening weather? Unfortunately, Google Analytics data do not resolve IP addresses to the point where exact user locations are identified. Our results are useful to us to strategize how to improve our performance in our primary mission of serving the public good with timely information

Keywords: Oklahoma Mesonet, weather events, Web

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Session Type: Paper

Title: Institutionalized Revictimization: The Failures of Post-Secondary Title IX

Abstract:

Designed to protect the student body from acts of sexual discrimination and assault on campus, Title IX offices are a staple feature in collegiate landscapes. Spaces and tactics of intimidation dominate offices that should be inviting and safe for traumatized students. This, along with political support and campus climate, lead many Title IX offices to betray their intended purpose and leave students without aid, potentially endangering their lives. This paper will argue that Title IX offices in Post-Secondary institutions create hostile reporting spaces for sexual assault survivors and form landscapes of revictimization. University administrators create hostile and burdensome reporting processes, overlook the responsibility to keep faculty and students informed on Title IX procedures, and allow university personnel to neglect their duties to protect victimized students.

Keywords: Title IX, Human Geography

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Session Type: Poster

Title: CitySexuals-SexualCities

Abstract:

This paper argues that sexuality is socially constituted in its intersection with class, race, and gender. Sexual identities are also disciplined by institutions of power that exclude or privilege some over others based on hegemonic norms of “acceptability.” Lacking an intersectional perspective where sexuality is imbricated with class, gender, and race identities in urban studies produces a one-dimensional essentialist view that does not acknowledge the dialogical process that constitutes identities. Such one-dimensional studies turn a blind eye to the varying tropes of exploitation that neoliberal capital enacts to subjugate the sexual ‘other’. Through an examination of the gayborhoods in Dallas, Texas this paper illuminates the overwhelming importance of cities as potential sites of contestation or subjugation for identities of sexualities towards institutions of power at the federal and state level. Firstly, this paper suggests a particular interaction born between sexual minorities and city governments from lacking protections and/or regulation at the federal and state level. This interaction is at once shaped by an imposition of discourse shaped by a certain neoliberal sexual politics, and reproduced willingly by certain sexual agents. Secondly, by this interaction within the neoliberal city, this paper examines how particular urban spaces of sexual localities, i.e. gayborhoods, are created and subsequently maintained by city regulation. Lastly, this paper teases out in what ways spaces of sexual localities influence development, capital accumulation, and sustain the neoliberal city agenda.

Keywords: intersectionality; gayborhoods; hegemony; homonormativity

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Session Type: Paper

Title: Estimating nearshore bathymetry from Landsat 8 images - compared with Landsat 7

Abstract:

Bathymetric information is crucial to the study and management of coastal zones. Passive remote sensing provides a cost-effective alternative to acoustic surveys and bathymetric LiDAR techniques. Most existing studies estimated water depth from multispectral imagery in shallow coastal and inland waters by establishing the relationship between image pixel spectral values and known water depth measurements, in which the loglinear inversion model is most widely used. The application of this model on high spatial resolution imagery such as IKONOS, QuickBird and the family of WorldView satellites can offer an accurate and detailed monitoring. However, these observations are limited by their areal coverage and relatively high cost. In contrast, freely available Landsat imagery can be utilized to yield reliable and updated bathymetric information, especially since the launch of Landsat-8 in 2013. Compared to Landsat 5 and 7, Landsat 8 introduces the new coastal/aerosol band. In this study, we compared the accuracy of water depth estimates from Landsat 7 and Landsat 8 imagery with different combinations of spectral bands to see if the coastal/aerosol band can help improve the accuracy of water depth estimates. A case study of southeastern shore of Kauai Island, Hawaii has been conducted. The results demonstrate that Landsat 8 imagery provides much improved accuracy compared to Landsat 7 due to its improved radiometric resolution. However, the water depth estimate accuracy from Landsat 8 was barely improved when coastal/aerosol band is utilized along with blue and green bands, probably due to the high correlation between coastal/aerosol and blue band.

Keywords: Bathymetry, water depth, landsat 8, landsat 7

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Session Type: Paper

Title: Hot Boiled P-Nuts: North Central Florida locational trends of an African-derived southern folk food.

Abstract:

Amerindians domesticated the peanut near the Andes foothills in what is now southern Bolivia. Portuguese slave ships brought the peanut from Brazil to West Africa where it was being cultivated by the 1560s. Able to remain edible during the long journey because of its protective shell, the nut eventually became such a common provision on slave ships sailing to the Caribbean and North America that British colonists thought it was of African origin. Slaves cultivated peanuts in their own garden plots and the crop became commercially popular in North America by the late eighteenth century. Now, boiled peanuts are a commonly consumed heritage food in many southern states and are particularly prominent in the coastal and lowland regions of North and South Carolina, Georgia, and northern Florida. Boiled peanuts are now canned and sold nationally in grocery stores and online.

This study examines where roadside stands offering boiled peanuts for sale are typically located in North Central Florida. Field work was conducted along roads in North Central Florida, mainly Alachua County, during annual week long trips during the summer months between the years 2000-2019. Boiled peanuts are usually sold at roadside fruit stands located within suburban to exurban transition zones and at the intersection of rural crossroads.

Keywords: cultural geography, peanut, Colombian exchange

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Session Type: Poster

Title: Inventing the Grand Banks: A Deep Chart

Abstract: As a feature of the early modern Fish Revolution (1400-1700), the literary and cartographical 'invention' of the Grand Banks, accompanied and facilitated the massive and unprecedented extraction of *Gadus morhua* (cod) from the waters of the north-west Atlantic. This led to the creation of the Cod / Sack Trade Triangle which intersecting with the southern Atlantic Slave, Sugar and Tobacco Triangle, contributed to the capitalization of the modern West. In 1719, Pierre de Charlevoix claimed that the Grand Banks in contrast to the Spanish and Portuguese plunder of gold in Mesoamerica, were the "true mines" and "properly a mountain, hid under water." De Charlevoix noted the bank's cod population "seems to equal that of the grains of sand" covering the coastlines of the New World. However, in 1992, a moratorium was placed on five centuries of Grand Banks cod fishing due to the collapse of its fishery. As a bellwether for global environmental change, the massive geographies of resource extraction and consumption signified by the 'rise' and 'fall' of the Grand Banks fishery, serve as a lesson on the historical agencies driving the 'wicked-problem' of global warming. This study examines 83 Grand Banks charts drafted between 1504 to 1833, by contextualizing the morphology of their symbolism with historical English and French cod-catch records (1675-1831), epistolary accounts of John Cabot's iconic 1497 voyage to a "newfoundland", William Shakespeare's *The Tempest* (1611) and scientific essays on the 'Atlantic Turbine' of the Gulf Stream by William Gerard De Brahm (1772) and Benjamin Franklin (1786).

Keywords: Grand Banks, Humanities GIS, historical cartography, English-French Cod Catch Records 1675-1831, Cabot's voyage, *The Tempest*, the Gulf Stream, The Fish Revolution.

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Title: The Influence of the NFL in Mexico

Abstract:

Throughout its 100 years of existence, the National Football League has grown to international fame. Since the first international game played in Wembley Stadium in the United Kingdom, American Football expanded into Mexico because of sports media and its close proximity to the United States. As seen through the NFL's International series, the broadcasting of football games on Mexican TV and radio stations, and the growth of the Mexican football fanbase, the NFL and American football has already made a great impact on Mexican culture. With the advancement of communication through social media, the diffusion of the NFL's influence in Mexico will continue to grow in upcoming years.

Keywords: Mexico, NFL, National Football League

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Session Type: Poster

Title: Self Governance and Corporate Social Responsibility: a case study of Denton County's gas extraction industry

Abstract:

Despite the negative environmental and health effects associated with burning fossil fuels, the United States, other nations, and corporations still invest heavily into oil and natural gas production. Today, Texas leads the U.S. in oil and natural gas production, largely through unconventional techniques such as hydraulic fracturing. One outcome of the growing industry is a sharp increase in extraction sites located in densely populated areas. Under the current neoliberal setting of environmental deregulation and rollbacks of oversight policies, operators are increasingly given self-regulating powers. By focusing on Corporate Social Responsibility statements (CSR), this research will examine how operators conceive of self-governance and evaluate the rules, guidelines and responsibilities they may apply. To do this, I will use geospatial data from the Texas Railroad Commission and compare CSR statements among operators in Denton County.

Keywords: Corporate Social Responsibility, Neo-liberalism, Governance

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Session Type: Poster

Title: Former Lake Texcoco, Mexico City: Urban Park or Ecological Reserve?

Abstract:

Lake Texcoco was one of five lakes in the Valley of Mexico and the seat of the Aztec Capital (Tenochtitlan), a large urban island. After the arrival of the Spanish, Lake Texcoco was drained leaving an exposed barren lakebed and some wetlands. Today its area is primarily occupied by Mexico City. What used to be a thriving destination or stop for migratory waterfowl is now nearing disrepair. After failed attempts to build an airport, an urban park was proposed for a portion of the lakebed, but this could lead to more environmental degradation. Urban parks often connote recreational activities such as picnics, sports and playgrounds. While these activities are acceptable in the appropriate location, this area is not an optimal scene. An ecological preserve would provide greater protection and bring better benefits to the region. When planning a preserve in this area is the juxtaposition between the urban and rural populations must be considered, because they have different needs and desires. Buffer zones that cater to these populations should be implemented around the ecological reserve to ensure its protection and to provide a multitude of activities to the surrounding communities. An ecological reserve with appropriate buffer zones is just what the area occupied by former Lake Texcoco needs to recover and thrive once again, thus increasing aquifer recharge and decreasing dust pollution to the city. This research proposes the buffering of a wetland preserve where spaces for different uses (i.e., conservational, recreational, and educational) can coexist.

Keywords: Mexico City, Lake Texcoco, Urban Park, Ecological Reserve, Sustainability

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Session Type: Poster

Title: Public Perceptions of Water Reuse in Norman, Oklahoma

Abstract:

The success or failure of municipal wastewater reuse programs is often dependent on public willingness to use this water. Psychological reactions that contribute to behavioral intention have varying levels of influence, with the reaction of disgust creating the primary behavioral barrier. Because of this, factors influencing disgust reactions to recycled wastewater are of interest to psychologists and water managers alike. A study was carried out with 83 participants in Norman, Oklahoma, where the local government is interested in implementing wastewater reuse to supplement potable water supply during drought. Participants were asked about their willingness to use this water and their feelings of disgust as well as sociodemographic information. Results found that willingness and disgust are inversely related. Political **Affiliation**, education, and previous knowledge of the program all had significant effects on willingness to use the water. These results suggest certain educational information can overcome initial reactions of disgust that contribute to behavioral intention.

Keywords: wastewater, psychology, disgust, reuse

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Session Type: Poster

Title: My Version of Online World Regional Geography

Abstract:

I propose to discuss the structure, content, and challenges of an introductory course in World Regional that I've taught online for about a decade. It's been a lot of fun, with a tincture of grief.

Keywords: Online World Regional Geography

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Session Type: Paper

Title: The regional water-conserving and yield-increasing characteristics and suitability of soil tillage practices in Northern China

Abstract:

Water-deficiency seriously restricts the agricultural production in Northern China. Soil tillage practices can conserve water and increase yield effectively, but the regional applicability of soil tillage practices has not been systematically studied so far. It is significant to study the regional characteristics of tillage practices on water-conserving and yield-increasing so as to identify the optimal practices. Here, 156 peer-reviewed published papers from 62 study sites were used to evaluate the effects of main tillage practices, i.e., No-tillage (NT), Subsoiling (SS), Mulching (M), Ridge and Furrow Planting without Mulching (F), and Ridge and Furrow Planting with Mulching (F-M) on crop yield, water consumption and water use efficiency of wheat and maize in Northern China through a meta-analysis. The results showed that NT only increased yield of winter wheat in North-central China and spring maize in Northeast China. SS increased wheat and maize yield by $16.3\pm 3.2\%$ and $9.2\pm 3.0\%$, and increased water consumption by $8.4\pm 3.4\%$ and $1.8\pm 1.8\%$, respectively. M increased the yield of wheat and maize by $14.9\pm 2.9\%$ and $17.7\pm 6.2\%$, respectively, while did not increase the water consumption. F increased the yield of wheat by $5.0\pm 1.1\%$. F-M increased wheat and maize yield by $18.9\pm 6.3\%$ and $36.6\pm 11.8\%$, respectively. This study suggests that, SS is suitable for winter wheat in North-central China and summer maize in relatively wet areas of North-central China. M is suitable for summer maize in relatively dry areas of North-central China. M and F-M are suitable for spring maize in North-central China as well as crops in Northwest and Northeast China.

Keywords: Crop Yield, Water Consumption, WUE, Soil Tillage Practice, Crop water production function

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Session Type: Paper

Title: Public protests in Washington, DC: A case for over landscaping.

Abstract:

Protests in Washington, DC, have been a form of public assembly and political discourse since Coxey's Army in 1894. Although public protests are mobile and ephemeral events, I argue that their recurring practice are as much a part of Washington's landscape as its iconic monuments. I also question if, collectively, public protests are too deeply embedded in Washington's landscape so that most events are merely typical. I use qualitative-based fieldwork in Washington, DC, from 2005 to 2006 as a foundation for broader inquiry about landscapes and public spaces. I am interested in whether monuments and other institutions have created over landscaped public spaces in Washington, DC, and what effect this might have on protests, especially smaller events with fewer participants.

Keywords: Landscape, Public Space, Public Protests, Mobility, Washington, DC

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Session Type: Paper

Title: Coastal marsh sedimentation in Southeastern Texas from Hurricane Harvey floods

Abstract:

Hurricane Harvey's slow forward progress and meandering track resulted in historic amounts of rainfall of more than 1.5 m over Southeastern Texas. A massive pulse of floodwater flowed down local canals and rivers, inundating coastal marshes on the McFaddin National Wildlife Refuge. The floodwaters left a muddy flood deposit over much of the marsh, averaging 2.8 cm in thickness along a north-south transect across the refuge. This study documents the magnitude, character and significance of the flood deposit. The results suggest that Hurricane Harvey's flood sedimentation was the equivalent of seven years of "normal" sedimentation in the marsh. This is a significant contribution to marsh accretion, which counters elevation loss due to rising sea level. The pattern of flood sedimentation was weakly controlled by elevation, whereby lower elevations received more sediment, and more strongly controlled by proximity to flood sediment sources, which included overbank flows from the Gulf Intracoastal Water Way and the delivery of sediment into the marsh via flows through interconnected lakes and ponds. The study provides valuable new information on controls on the magnitude and distribution of flood sedimentation in coastal marshes and the role of terrestrial sediment sources – a crucial and timely area of inquiry given the threat of submergence posed to coastal marshes by rising sea-levels.

Keywords: Marsh accretion; Rising sea-level; McFaddin NWR; Sediment sources; flood sedimentation

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Session Type: Paper

Title: Inclusionary Zoning and Housing Cooperatives in Austin, Texas

Abstract:

Housing cooperatives are a niche in the affordable housing market that fit into the shared-equity or group equity model. Through democratic ownership and de-commodified pricing, housing cooperatives provide important avenues for expanding just and attainable housing options. In Austin, Texas, housing cooperatives are fundamental to community living and affordable housing for more than 500 young people. A 2004 city ordinance known as the University Neighborhood Overlay (UNO) created a trust fund that gave developers an option to pay an “n lieu” fee as opposed to including a city-mandated proportion of affordable housing units within their developments. The money that goes into UNO trust fund is then accessible by the only non-profit, affordable housing corporations in the West Campus Neighborhood. These two non-profits are College Houses, Inc. and Inter Cooperative Council Austin; they are also the parent organizations of the democratically managed West Campus cooperatives. Through a public records request from the City of Austin, I gathered data on all the developments that have paid into or developed the proper amount of affordable housing in the West Campus neighborhood. In this presentation, I offer preliminary findings on the UNO trust fund, contextualized within a brief history of housing cooperatives and an overview of inclusionary zoning research.

Keywords: Cooperatives, Inclusionary Zoning, Affordable Housing, West Campus, Policy

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Session Type: Paper

Title: Spatial and temporal patterns of fallow/idle cropland in the United States Rio Grande Basin

Abstract:

The Rio Grande River is the fifth longest river in North America, flowing from southern Colorado, through New Mexico, and along the Texas-Mexico border to the Gulf of Mexico, supplying water to more than 10 million people and roughly 19,000 square kilometers of cropland. Partially due to increasing scarcity of water and population growth, there has been increased strain on agriculture in the region in recent years. This strain is likely to have caused a conversion of crops to fallow/idle land, though it has not been studied in depth. In this study, we analyzed the spatial and temporal patterns of fallow/idle land and crops in the Rio Grande Basin using the United States Department of Agriculture's Cropland Data Layer (CDL), an annual land cover map derived from satellite imagery that has been available for the coterminous United States since 2008 at 30-m resolution. Using a geographic information system, we conducted a multi-scale analysis comparing the time-series, the spatial extent, and the frequency of cropland and fallow/idle land between the basin, states, ecoregions, and irrigation districts. The area of fallow/idle cropland decreased in the basin as a whole, and increased in New Mexico, Colorado, and three of the nine ecoregions. Although fallowing land is effective for reducing water consumption from irrigation, additional research is needed to determine if farmers are employing other methods of reducing water consumption, such as a detailed study of crop rotations to explore whether farmers in the region are growing drought resistant crops.

Keywords: Rio Grande, fallow/idle cropland, land-use change

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Session Type: Poster

Title: Urban Expansion and Allometric Growth Analysis of Addis Ababa, Ethiopia

Abstract:

Addis Ababa, Ethiopia, represents one of the fastest growing urban economies in the world. Rapid urban expansion, haphazard settlement patterns and a general lack of comprehensive planning in the city contributes to various social problems including food scarcity and displaced population, particularly poor “Oromo” farmers. Compounding these challenges, the national census, vital to estimating population, has been frequently delayed with parliament citing security and social concerns. Few studies, however, have empirically investigated urban growth dynamics for African cities. Today, methodological and technological advances in remote sensing provide reliable and readily available methods to monitor and extract quantitative data describing urban extent change as indicators for population. This study examines the growth of urban built-up areas for Addis Ababa from 1984 to 2018 using remotely sensed Landsat 5 and Landsat 8 imagery. The objective of the study is to visualize built-up areas and quantify the city’s urban expansion through several built-up area indices, using growth statistics to project future expansion. The population estimation approach applied in this study draws support from over 40 years of empirical research suggesting a power law relationship exists between urban area and population size. The scaling factor capturing the urban area-population correlation is used to estimate recent and future population amounts for Addis Ababa. Results indicate that the urban area is growing much faster than the population estimates. Additionally, the scaling exponent for Addis Ababa is much high than what has been found in previous research on West African cities.

Keywords: Urban Growth, Remote Sensing, Population

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Session Type: Poster

Title: Developing an hourly risk model for street networks in Dallas

Abstract:

The research aims to develop an hourly risk model for street networks in Dallas. Based on 68,764 traffic accidents 2015-2016 reported to Texas Department of Transportation and quantified 12 characteristics of sites and situations on streets, we applied the random forest algorithm to estimate traffic risk for every hour of a day and every day of the week. Site variables include road type, intersection, lane width, and two measures of space syntax: choice and integration. Situational variables include time, near-repeat, precipitation, fog, thunder, freezing precipitation, and below freezing. Near-repeat accounts for the cascading effect that accidents ahead may trigger a higher risk to the subsequent traffic on the road. While weather variables are regional due to the data limitation, we consider 100-m road segments across Dallas to account for micro variability among other variables on traffic accidents. The presentation will share preliminary findings of the on-going project sponsored by the National Institute of Standards and Technology (NIST) Public Safety Innovation Accelerator Program (PSIAP).

Keywords: hourly risk; accidents; traffic; network; spatiotemporal modeling

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Session Type: Paper