

Spatial Structures in the Social Sciences 2016 Summer GIS Institute

Final Presentation Program

June 3, 2016 Population Studies and Training Center
Seminar Room

9:30 – 9:45 am	Welcome
9:45 – 10:45 am	Session I: GIS Applications in the Social Sciences
10:45 am – 11:30 pm	Session II: Spatial Analysis of Environmental Issues
11:30 am – 12:30 pm	Lunch
12:30 – 1:30 pm	Session III: Using GIS and Spatial Analysis for Historical Applications
1:30 – 1:45 pm	Certificate Presentation
1:45 pm	Close of Conference

PARTICIPANTS

Lorenzo Aldeco (Economics)

Jennifer Bouek (Sociology)

Clare Cannon (Tulane University)

Mahesh Dahal (Economics)

Rachel Denlinger (School of Public Health)

Christina Ergas (IBES)

Luther Karper (Classics)

Gaia Lembi (Judaic Studies Program)

Marley-Vincent Lindsey (History)

Thomas Sojka (John Carter Brown Library)

Jinxu Tang (Political Science)

PROGRAM

SESSION I: GIS APPLICATIONS IN THE SOCIAL SCIENCES

Rachel Denlinger, *Understanding the Impact of Tobacco Retailer Density in Providence, RI, on Adolescent Smoking Rates*

Jennifer Bouek, *Markets of Child Care*

Jinxu Tang, *Resource Richness and Governmental Behavior: An Instrumental Variables Approach*

Mahesh Dahal, *International Migration and Entrepreneurship: Among and Beyond Migrant-Origin Households*

SESSION II: SPATIAL ANALYSIS OF ENVIRONMENTAL ISSUES

Lorenzo Aldeco, *Speed Limits and Pollution in Mexico City*

Clare Cannon, *Exposure to Environmental Hazards: Analyzing the Location and Distribution of Landfills in the Contiguous United States*

Christina Ergas, *Environmental Justice Questions in Providence*

LUNCH BREAK, 11:30 AM–12:30 PM

SESSION III: USING GIS AND SPATIAL ANALYSIS FOR HISTORICAL APPLICATIONS

Luther Karper, *Mapping Cults and Magistrates: The Political Integration of Aetolian Poleis*

Gaia Lembi, *Jews, Pagans and Christians in Israel/Palestine: Mapping their Presence and Interaction through Inscriptions*

Marley-Vincent Lindsey, *Back on the Map: The Encomienda System of New Spain in the Sixteenth Century*

Thomas Sojka, “What a lot of parties”: *The Bright Young People and London's Urban Landscape, c. 1924–1931s*

PRESENTATION ABSTRACTS

Lorenzo Aldeco – Speed Limits and Pollution in Mexico City

This project describes the basic geographical patterns of pollution in Mexico City before and after a large change in speed limits that came into effect in December 2015. Total speed reduction in a city is calculated at the district level; variation comes from the way the new ruling affects certain street types differently. We aim to use this variation and frequently measured pollution to identify the causal effect of the ruling on air contamination.

Jennifer Bouek – Markets of Child Care

As women have increasingly entered the workforce, child care has also transitioned from the private to the public sphere, emerging as a market in itself. To date, sociological inquiry into child care has been isolated to the private sphere, detailing the ramifications of unstable or low quality care on women's employment and child development, but neglecting the organizational environments in which these decisions are made. Yet, economic sociology tells us that markets are heterogeneous and social structured in various ways and studies of organizational inequality have shown that density, quality and form are geographically patterned at multiple levels. We also know that child care markets, relatively nascent and characterized by a variety of emerging and established for-profit and nonprofit actors, operate in geographically segmented environments and that local ecology shapes the structure of the local market. Bringing organizational theory and economic sociology to bear on the study of child care, this project empirically investigates the organizational markets of child care by asking: 1) How do child care markets vary across local geographies? and 2) How is the variation patterned according to community sociodemographic status?

Clare Cannon – Exposure to Environmental Hazards: Analyzing the Location and Distribution of Landfills in the Contiguous United States

This doctoral dissertation examines who is impacted in the contiguous United States by environmental hazards in the form of landfills (e.g. construction and demolition (C&D), industrial, and municipal) and in what ways are people exposed to such socio-environmental inequalities. Much research has shown that people, based on their social location, differentially experience exposure to environmental hazards. This research, using an intersectional approach, seeks to add to our understanding of who is affected, to what extent, and why some people may experience greater exposure to environmental harms than others.

To answer these questions, this research will test for and identify the socioeconomic, ethnic/racial, and gender-based relationships to the spatial location and distribution of landfills in the United States. This study employs a mixed-method, sequential research design in which quantitative data analysis was performed first, followed by spatial and qualitative data analysis performed concurrently. For this research, I am creating a novel dataset of the latitude and longitude of all types of landfills at the county level across the contiguous United States in conjunction with data from the Federal Emergency Management Agency and the Census Bureau to answer research questions. Research supported by a National Science Foundation grant (NSF#1602813).

Mahesh Dahal – International Migration and Entrepreneurship: Among and Beyond Migrant-Origin Households

Households in developing countries face significant barriers to starting a business. International migration has the potential to help alleviate some of those constraints, and the impact may not be limited to migrant-origin households. In this project, I estimate the overall impacts of international migration on entrepreneurship among migrant households and in migrant-origin communities in rural Nepal. I use both administrative boundaries and distance based definitions of migrant-origin communities to test robustness of my results to different definitions of migrant-origin communities.

Rachel Denlinger – Understanding the Impact of Tobacco Retailer Density in Providence, RI, on Adolescent Smoking Rates

Tobacco use is the leading cause of preventable death in the United States. Approximately 1 in 6 adults report smoking cigarettes. State and local municipalities are able to enact tobacco control policies to reduce the public health burden of tobacco use. One proposed federal tobacco control strategy is to ban menthol as a characterizing flavor in cigarettes. Menthol cigarettes are disproportionately used adolescent and young adult smokers, racial/ethnic minorities and people with serious mental illnesses. In lieu of a federal ban, local municipalities, such as Chicago, IL, have banned sales of menthol cigarettes near schools as a means of deterring adolescent smoking acquisition. This project aims to understand how tobacco retailer density near middle and high schools in Providence, RI impacts adolescent smoking rates. Additionally, this project will simulate menthol-free buffer zones around Providence middle and high schools to determine how many tobacco retailers would be affected if the city implemented a policy prohibiting sales of menthol cigarettes near schools.

Christina Ergas – Environmental Justice Questions in Providence

I look at Providence, RI spatial demographic data and compare it to spatial crime and grocery store data to assess the extent to which people in the poorest neighborhoods in Providence experience violent crime and have access to quality food. These indicators illuminate the living conditions of poor residents in Providence. In future research, I will continue to compare spatial data to demographic data to assess the degree to which poor residents experience a variety of environmental toxins and hazards as well as environmental resources.

Luther Karper – Mapping Cults and Magistrates: The Political Integration of Aetolian Poleis

We know very little about the early history of the Aetolian confederacy and the process by which it was created. Once the fully-formed Aetolian league appears in the literary record, vague allusions to expansion along the coast suggest that the Aetolians were able to incorporate non-Aetolian polities with ease into a league initially organized along ethnic lines. This study tests the potential ease of this federal unification, first by mapping Aetolian cult networks, and then by mapping the home cities of Aetolian federal magistrates, via density maps which reveal the geographic concentration and distribution of their origins over time. By mapping Aetolia's cult network, we can better understand the degree to which Aetolians were connected before and after federalization, by means of paths of least-cost between cult sites. We can further test the nature of Aetolian federalization by mapping participation in federal magistracies over time and space. Based on this distribution and concentration of federal magistrates, we can more

accurately discuss the potential nature of Aetolian federalization and the degree to which it may have been a coercive or diplomatic process.

Gaia Lembi – Jews, Pagans and Christians in Israel/Palestine: Mapping their Presence and Interaction through Inscriptions

The Inscriptions of Israel/Palestine project (IIP) aims to build an internet accessible corpus of the inscriptions found in Israel/Palestine that date roughly between ca. 500 BCE and 614 CE. These inscriptions are an invaluable resource for historical investigation, since they provide information that is frequently not available in the extant literary texts: for instance, they reflect a broader social spectrum and at times convey religious views that have not been censored by a later normative tradition.

One of the goals of the project is to allow for the inscriptions to be integrated with other contextual information, and specifically with geographical data. I do hope to use the tools offered by ArcMap to try and map the various ways in which Jews, Pagans and Christians interacted in the area: one interesting case study is represented by the ancient Roman road system throughout Israel/Palestine, since these texts contributed to reconstruct it and to revise our understanding of trade routes and the economy. I also aim to incorporate an interactive map within the Search page of the project's website: ideally, it should visualize the results according to inscription type, language and religion.

Marley-Vincent Lindsey – Back on the Map: The *Encomienda* System of New Spain in the Sixteenth Century

There has been a significant elevation of “discursive” concerns in the historical discipline over the past thirty years. Where materialist—or empirical—forms of data once spoke for themselves, just as important now are the ways that data are produced, located, and contextualized in the systems of analyses they take part.

While productive, this discursive turn has also unhinged many analyses of social functions, instead focusing on the symbols that represent them in speech. This emphasis on the symbolic had the converse effect of having empirical structures drop out of the conversation on a whole.

My brief presentation uses the *encomienda* system in New Spain as a limit to strictly symbolic analyses of religion and identity in the sixteenth century. The *encomienda*—an arrangement in which a regional official would use the labor of varying Native Americans on a space of land in exchange for Christianizing them—has been analyzed as an economic function, a colonial institution, and a harbinger of exploitation. Yet, the actual data on the institution have only been evaluated a couple of times over the past century. By mapping the information we do have about the system, I will suggest a pivotal part of understanding the Spanish experience in America requires learning about the spatial and demographic dimensions of the *encomienda*.

Thomas Sojka – “*What a lot of parties*”: The Bright Young People and London's Urban Landscape, c. 1924–1931

The Bright Young People are as synonymous with the ‘Roaring Twenties’ in Britain as flappers, Art Deco, jazz and the Charleston. While the group was never really organised in a traditional sense – with a set roster of members or a mission statement – ‘they were, nevertheless, a definite

group of people, linked by a community of impulses.’ The stage on which they operated was London from roughly 1924 to 1931, where they ‘secured a great deal of publicity by throwing wild parties and indulging in kindergarten orgies of gin, sex and drugs. ...’ While the press painted the Bright Young People as the pinnacles of excess, they in fact represented the changing nature of ‘Society’ in how they interacted with the urban landscape of early twentieth century London. If space did not exist to suit their needs, the Bright Young People either created new or appropriated existing spaces for their escapades. In order to get a clear understanding of any group, we must move beyond their traditional spatial associations to see the complexities of the fuller picture. Previous work on the Bright Young People has set them within a Mayfair context, which has oversimplified where and how the group used social space in the city. However, in mapping where the Bright Young People socialized, we see that Mayfair was not the playground of the group – the whole of London was.

Jinxu Tang – Resource Richness and Governmental Behavior: An Instrumental Variables Approach

Countries endowed with rich natural resources are supposed to perform worse than resource-poor countries, either in terms of public good provision, economic development, or even the form of government. A number of scholars have been studying the effects of resource richness on comparative development for decades with numerous papers being produced since the late twentieth century. The “resource curse” theory was developed and widely accepted to account for the detrimental effects of resource abundance. However, the development of “natural resource” theory is empirically flawed as scholars have not yet successfully solved the endogeneity problem between diverse development outcomes and resource wealth, no matter how they measure resource abundance: resource output, resource export, or even resource discoveries. In this study, I bring into the geographic determinants of natural wealth to solve the endogeneity problem by integrating the use of GIS. Focusing on the distribution of coal-mine areas among counties in Shanxi province, China, I show how governmental behavior and citizen well-being are influenced by natural resources.