

Spatial Structures in the Social Sciences 2018 Summer GIS Institute

Final Presentation Program

June 1, 2018 Population Studies and Training Center
Seminar Room

9:30 – 9:45 am	Welcome
9:45 – 10:30 am	Session I: GIS and Health
10:30 – 11:15 am	Session II: GIS Applications in the Social Sciences
11:15 am– 12:15 pm	Session III: Historical Geography I
12:15– 1:30 pm	Lunch
1:30 – 2:30 pm	Session IV: Historical Geography II
2:30 – 3:30	Session V: Spatial Humanities
3:30 – 3:45 pm	Certificate Presentation
3:45 pm	Close of Conference

PARTICIPANTS

Amanda J. Arceneaux (History)

MaryKatherine Chester (History)

Sherri Cummings (History)

Kimberley Duru (School of Public Health)

Miriam Eisen (History)

Wanda Henry (History)

Ji Soo Hong (History)

Kristen Iemma (American Studies)

Tate Kihara (Sociology)

Jessie Kitts (School of Public Health)

Janet Carolina Lopez (Economics)

Corinna Noel (Epidemiology)

Nic John Ramos (Africana Studies)

Jack Ryan (Classical High School)

Sertac Sen (Anthropology)

Sarah Pearlman Shapiro (History)

Bill Skinner (History of Art and Architecture)

Haoming Song (Sociology)

Suvaid Yaseen (History)

PROGRAM

SESSION I: GIS AND HEALTH

Kimberley Duru, *Path to Elimination: Examining Patterns of Opioid Overdose Deaths in Cook County, Illinois Towards Prevention and Reduction*

Jessie Kitts, *Spatial Analysis of Malaria Outbreaks and Proximity to Water Bodies in India*

Corinna Noel, *Spatial Trends in Cigarette Smoking and Coronary Heart Disease in Pawtucket, RI*

SESSION II: GIS APPLICATIONS IN THE SOCIAL SCIENCES

Haoming Song, *Changing Divorce in the U.S. - A Spatial Analysis of State-Level Differences*

Tate Kihara, *Examining Naturalization of Immigrants from a Geographical Perspective*

Janet Carolina Lopez, *Determinants of the Allocation of Early Childhood Centers in Rural Areas*

SESSION III: HISTORICAL GEOGRAPHY I

Sarah Pearlman Shapiro, *Mapping Law and Order: A Story of Mid-Eighteenth Century New York's Violent Vices*

MaryKatherine Chester, *Death in a Paris Arrondissement: A Look at Mortality and a Changing City (1938–1940)*

Wanda Henry, *Tracking Death in the Parishes of Eighteenth- and Nineteenth-Century London*

Mimi Eisen, *Hidden in Plain Sight: Cemeteries and Civil Rights*

LUNCH BREAK, 12:15–1:30 PM

**SESSION IV:
HISTORICAL GEOGRAPHY II**

Sherri Cummings, *In Search of Equiano's Sister: Girlhood, Slavery and Freedom in the British Atlantic*

Amanda J. Arceneaux, *Changes in Latitudes, Changes in Attitudes: Perceptions of Chymistry through Early Learned Journal Publication Locations, 1665–1743*

Bill Skinner, *Patterns of Mass Housing in Barbados, 1956–1966*

Nic Ramos, *Policing “the Dragons”: Deindustrialization, Deinstitutionalization, and the Creation of a Modern Skid Row*

**SESSION V:
SPATIAL HUMANITIES**

Sertac Sen, *Demographic Shifts in the Turkish Thrace*

Suvaid Yaseen, *Mapping Islamic Shrines in Kashmir*

Ji Soo Hong, *From Hinterland to Powerhouse: The Rise of the Siberian Oil Industry*

Kristen Iemma, *Library Publics: Visualizing the Ocean State Libraries Consortium*

PRESENTATION ABSTRACTS

Amanda J. Arceneaux – Changes in Latitudes, Changes in Attitudes: Perceptions of *Chymistry* through Early Learned Journal Publication Locations, 1665–1743

Scholars have made the argument that during the eighteenth century “alchemy” came increasingly to be seen as a fraudulent science or a science for charlatans, while chemistry retained its intellectual prestige. Around the same time "alchemy" and "chemistry" began their divergence, the legitimacy of science came increasingly to depend on public demonstrations. The term *chymistry* has become accepted amongst scholars of the field when discussing this etymologically complicated period when the terms alchemy and chemistry were both used by contemporaries to describe the field of knowledge without the distinctions that are placed on the terms today.

This study examines 1,029 articles in thirteen early learned journals published in England, France, Italy, and the Germanic provinces in Europe from 1665 to 1743. They included articles detailing experiments, observations, and medical practices performed with *chymistry*. As a whole, these sources grant us the ability to trace the evolution of scientific communication and to measure the newly forming social interest in science. Examining *chymistry* through early learned journals allows us to examine this change through a medium which catered to a community of European readers interested in the topic of *chymistry*. Analyses of these articles reveal not only the books and articles readers expected would best help them to understand *chymistry* but also the language, specific *chymistry* terminology, and experiments done by *chymists* that can help us trace the different fates of "alchemy" and "chemistry" within early modern *chymistry*. This project looks at spatial distribution of different types of *chymistry* published by various journals to see which publishing centers specialized in certain types of *chymistry* articles and reviews and how they changed over a near hundred year period.

MaryKatherine Chester – Death in a Paris Arrondissement: A Look at Mortality and a Changing City (1938–1940)

World War II looms in modern memory, and its impact has been felt for generations. The staggering losses of WWII boast statistics varying from 50-80 million fatalities. Due to the mass scale of impact, the war is often discussed as a totality which levels the unique experience of countries and people. In reality, the pre-war period and the wartime experience vastly differs. France, in particular, had a unique experience in comparison to its allied countries as it started off the war period unoccupied, but later fell to the Germany army and was ultimately divided. What this project attempts to do is to bring back the people to this narrative, rather than focus on broader discussions of governments and political powers. By narrowing the scope to the sixth arrondissement, famous for its affluence and history as the intellectual quarter, this project will break down the enormity of the war by looking at mortality on a smaller scale to witness the changes in Paris. By looking at mortality, and the demographics of the deceased, this project will visualize how this Paris arrondissement can show a different side of war; a side that is more personal. The data that was collected for this project comes from the archives of Paris in the form of digitized death civil records. The documents provide a small paragraph about the deceased that include demographic, marital, and familial information. I will attempt to evaluate the changes in the Paris upper class, the impact of the start of WWII, and assess mortality and the experience in Paris.

Sherri Cummings – Sherri Cummings – In Search of Equiano's Sister: Girlhood, Slavery and Freedom in the British Atlantic

In 1789, Olaudah Equiano published his classic, and often criticized, narrative detailing his capture, Atlantic passage, bondage in the Americas and freedom in England. Abducted along with his younger sister from their family compound in Essaka, twice the siblings are separated by their enslavers, the second time forever. What happened to Equiano's sister? Was she enslaved for a time on the continent or was she immediately transferred to the Americas to labor on a sugar plantation in the Caribbean, or a New England farm? Drawing on data pulled from the Transatlantic Slave Trade Database (www.slavevogaes.org), my GIS project seeks to map the locations of the slave forts operated by the Royal African Company, on the West Coast of Africa during the seventeenth and eighteenth century as well as the percentages of children, specifically girls, transported from each location to the Americas.

Kimberley Duru – Path to Elimination: Examining Patterns of Opioid Overdose Deaths in Cook County, Illinois Towards Prevention and Reduction

Opioid overdose deaths have been rapidly increasing across the country in the past five years. 42,429 opioid-related deaths were recorded in 2016, a number five times higher than opioid-related deaths in 1999. The most-significant increase in overdose deaths from 2015 to 2016 were seen in the NorthEast, Midwest and South census regions of the country. 1946 opioid overdose deaths were recorded in the state of Illinois and 1081 of these deaths occurred in Cook County, the second most-populous county in the United States. Public health efforts to address increasing overdose deaths in Illinois include implementation of a standing order to provide Naloxone through approved pharmacies, train individuals on administering Naloxone in addition to improving access to treatment centers. This project uses spatial analysis tools to map overdose deaths in Cook County from 2015 to present, examining demographic characteristics of geographical areas most affected by overdose deaths and proximity of substance use disorder treatment centers in the community. Data analysis would be useful to provide insight into areas of intervention to prevent and eventually eliminate opioid overdose deaths in Cook county.

Mimi Eisen – Hidden in Plain Sight: Cemeteries and Civil Rights

This GIS project employs an atlas produced in the twilight of the nineteenth century in order to explore an area of segregation in public spaces relatively untouched by civil rights discourse: cemeteries. Once a popular destination for fugitive slaves and a long-thriving black community, the closest major city to the bloodiest battle ever fought on American soil and a site of storied commemoration, Philadelphia provides a useful entry point into questions of race, memorialization, civil rights, and empathy in modern America. This GIS mapping of the city's cemeteries is undergirded by a survey of newspapers, legal records, and other demographic data and illuminates a larger pattern of racial stratification carved into contested landscapes. Of the given cemeteries, some are still active, others have been abandoned, and others still are only traceable through old documents and maps – having long since faded from popular awareness. Digitally marking the cemeteries by various foundational characteristics as well as current statuses both encourages and reflects analysis of broader trends related to the qualities of democracy and distributive empathy in America. In the weeks to come, I hope to incorporate this into a larger, currently prose-heavy website that I developed this spring as part of a departmental independent study.

Wanda Henry – Tracking Death in the Parishes of Eighteenth- and Nineteenth-Century London

My research explores the relationship between the social history of death, evolution of public health, and gender dynamics at the parish level by investigating the women who examined and counted London's dead from the mid-sixteenth to the mid-nineteenth century. London's Company of Parish Clerks published the women's work in weekly and annual bills of mortality, which presented the numbers of burials and baptisms for individual parishes as well as aggregate data for causes of death. Known as searchers of the dead, the women served as official eyewitnesses to life and death in the parish. Through a prosopographic approach, my study demonstrates that parish vestrymen appointed the female relatives of parish servants to the office of searcher. Using GIS, this presentation will consider both a micro- and macro-perspective on the parochial network traversed by women searchers and the diseases they tracked. First, a focus on the movement of one early nineteenth-century searcher in St Michael Queenhithe parish reveals the close proximity of searchers to their parishioners, while mapping the causes of death listed in the burial register shows the spread of disease across the community. A wider lens on the full metropolis displays the numbers of burials by parish and helps explain the different employment practices by vestrymen who appointed women as sextons as well as searchers in the less populated parishes within the city walls.

Ji Soo Hong – From Hinterland to Powerhouse: The Rise of the Siberian Oil Industry

Using historical urban plans and quantitative data containing information about changing population and industrial trends, this project maps the rise of oil industry in the Soviet Union and its transformation into petro-state in the second half of the twentieth century. Since the 1960s, oil expeditions have taken place throughout the Soviet Union, especially in the underdeveloped peripheries, especially in Western Siberia and the Far East, and fueled the Soviet economy by producing one of the most profitable global commodities in the decade, petroleum. In addition to oil's impact on Soviet political economy, the materiality of oil also transformed social interaction between people and their environment, setting the course of development in the eastern half of the Soviet Union. In order to navigate through the intersection of global economy, regional development, and human encounter with natural resources, this project will visualize the socio-economic transformation experienced by the Soviet state and its people.

Kristen Iemma – Library Publics: Visualizing the Ocean State Libraries Consortium

Drawing on data from the Institute of Museum and Library Services (IMLS)'s Public Libraries Survey for Fiscal Year 2015, this project will attempt to elucidate user trends across the Ocean State Libraries network, a consortium of 49 free public libraries in the state of Rhode Island. Library usage statistics, facilities staffing, and funding information are some of the data that will be explored through these visualizations. Special attention will be paid to the city of Providence through the employment of the American Community Survey and Census data. This project will attempt to create a detailed portrait of the communities served by the Providence Public Library and the nine branches of the Providence Community Library.

Tate Kihara – Examining Naturalization of Immigrants from a Geographical Perspective

In this project, I study geographical distribution of naturalization of immigrants across the United States at the county level, and the association between naturalization and socio-demographic factors. The data is taken from the American Community Survey (ACS) 2012-2016 merged file

from IPUMS-NHGIS, and my variable of interest is the count of naturalization within the most recent five year periods. Firstly, I describe the geographical distribution of naturalization rate (operationalized as the count of naturalization divided by the number of non-naturalized foreigners) at the county level. Second, I analyze the association between naturalization and county level characteristics taking spatial autocorrelation into account. I also examine how my results differ in approaches that utilize alternative spatial boundaries (e.g., State) or methods that do not take into account spatial autocorrelation.

Jessie Kitts – Spatial Analysis of Malaria Outbreaks and Proximity to Water Bodies in India

Spanning nearly the entire country geographically, 93% of India's 1.3 billion population was at risk for malaria transmission in 2016. That year, India shared the third highest burden of malaria cases and fourth highest burden of malaria deaths at the country-level worldwide. The WHO estimates between 9 and 18 million cases of malaria and 24,000 attributable deaths in India during 2016. It has been shown previously that the significant majority (74%) of malaria cases in China during the 2006-2008 outbreak occurred within 60m of water bodies. Here, 34 outbreaks of malaria with geographic information reported in India from 1984-2012 were examined to determine if proximity to water bodies is a significant predictor of malaria outbreak risk in India.

Janet Carolina Lopez – Determinants of the Allocation of Early Childhood Centers in Rural Areas

Given the precarious conditions faced by an indigenous community in Salta, Argentina the government launched several programs to alleviate such situation. The flagship program is the opening of early childhood development centers in some villages, but the allocation was not random. Before the evaluation of the impacts of these centers on indigenous health, I would like to determine how comparable are villages with centers vs. villages without centers. The purpose of this project is to evaluate potential determinants of the allocation by analyzing differences in distance to roads/water sources, average temperature, and night lights.

Corinna Noel – Spatial Trends in Cigarette Smoking and Coronary Heart Disease in Pawtucket, RI

Cardiovascular diseases, including coronary heart disease (CHD), are the leading cause of deaths in the United States. While lifestyle risk factors, such as cigarette smoking, have been shown to be prospectively associated with CHD, there is limited research examining risk factors for heart disease from a spatial perspective. We will use data from the Pawtucket Healthy Heart Study to investigate spatial trends in both cigarette smoking and CHD prevalence in Pawtucket, RI in the 1980s. We will explore the best ways to capture and portray trends, using both raster and vector data. Ultimately, we aim to determine whether CHD risk differs in areas where cigarette smoking is more common compared to areas of where smoking is less common. This will give us insight into whether secondhand smoke influences CHD on a neighborhood level, and allow us to develop targeted more targeted prevention strategies for areas of higher risk.

Nic Ramos – Policing “the Dragons”: Deindustrialization, Deinstitutionalization, and the Creation of a Modern Skid Row

It is well known that the City of Los Angeles standardized large scale arrest and detain envoys targeting black and brown neighborhoods called Operation Hammer throughout the late 1980s

and 1990s by piloting such sweeps in the lead up to the city's hosting of the 1984 Olympic Games. It is less known, however, how the city used similar organized police activities to *push* other citizens considered "undesirable," such as mentally disturbed "street people," prostitutes, and black and brown trans people into skid row who could not be immediately detained in prisons and state hospitals and were not welcomed back in their "home" communities. This project accounts for another lasting feature of policing piloted during the 1984 Olympic Games - a new mid-1980s city ordinance implemented by Mayor Tom Bradley and his black and gay community mental health allies and activists to govern skid row called the *containment and mitigation policy*. The policy re-made skid row essentially into an "asylum without walls" in order to solve a new mental health crisis of homelessness and street crime. While homelessness was an issue for every region of Los Angeles, black and gay elites were particularly hopeful in using new anti-poverty funds to free their neighborhoods from stigma. I show that as the 1980s progressed, black and gay elites believed their efforts could not advance without a new "spatial fix" that unburdened them of responsibility of community members who failed to meet new standards of citizenship being defined in discourse and in space as "multicultural."

Sertac Sen – Demographic Shifts in the Turkish Thrace

For this project, I want to produce a regional population density map of the three adjacent provinces in the Eastern Thrace region of Turkey: Tekirdag, Edirne, and Kırklareli. Population statistics at the neighborhood or block level is not available. Therefore this project will focus on population change in the region over the last three decades at both province and town levels. The region has been increasingly industrializing since the 1980s, attracting migrant labor from across the country. During this period, my fieldsite, Corlu has emerged as an industrial boomtown, with its population size surpassing that of the city center of the province Tekirdag to which it administratively belongs. As I spatially trace the demographic features of the region, I aim to arrive at 1) a better contextual and spatial understanding of the town's recent boom; and 2) a better grasp of the challenges involved in the use of GIS in a non-US context - and how to grapple with them.

Sarah Pearlman Shapiro – Mapping Law and Order: A Story of Mid-Eighteenth Century New York's Violent Vices

Coroner John Burnet was not a medical professional but a trained lawyer, yet he was responsible for convening juries to determine causes of accidental and violent death that warranted further legal action. Burnet's jury records include cases ranging from suicide to defenestration that shed light on the role of the coroner's court and death in mid-eighteenth century New York. While the court was comprised of white Christian men, many cases from Burnet's tenure—from 1748 to 1758 with multiple resignations due to lack of pay—detailed the deaths of enslaved and freed men and women. My research, based on an exploration of these records, in conjunction with newspapers, diaries, and legislature, has shown that adjudication of slave suicides helped placate societal fears of uprisings all while ensuring that their names are incorporated into the historical record. Burnet's eighty-one cases unwittingly provides a demographic survey of mid-eighteenth century New York, demonstrating that violent and accidental death—especially suicide—transcended neighborhood, class, and gender. This GIS survey—or physical representation of this demographic data set beyond suicide—demonstrates how these eighty-one cases intersected with the rapidly developing urban space of colonial Gotham in order to assess larger patterns of violence, while mapping the movement of death within the confines of these proceedings.

Bill Skinner – Patterns of Mass Housing in Barbados, 1956–1966

My research examines the development of mass housing estates in Barbados during the mid-20th century. It was in Barbados that some of the principle policies that characterized twentieth-century British Caribbean housing and town planning were first developed by the Colonial Development and Welfare Organization and the Barbados Housing Authority. New mass housing policies based on empirical research conducted in the 1940s by the colonial government, were materialized a decade later by the Barbados Housing Authority with the development of lower density tract housing estates throughout the island. These housing areas combined the old with the new; the re-siting of extant wooden ‘chattel’ houses from Bridgetown with the construction of low-rise single, duplex and multi-family tract units.

Utilizing annual reports published by the Barbados Housing Authority, I will trace the development of these housing estates island-wide over a ten-year period beginning in 1956. I will map the construction of new housing units (studio, one, two and three-bedroom) and chattel housing that occurred in various housing estates in the island. The aim of this project is to understand the spatial pattern of housing development—extant and new—that occurred in the decade leading up to independence in 1966.

Haoming Song – Changing Divorce in the U.S. - A Spatial Analysis of State-Level Differences

Studying divorce is important in understanding the changing family structures in the U.S.. However, limited research has paid attention to the spatial level of divorce across states. Using mainly NVSS data from CDC, this paper studies the state-level crude divorce rate differences and its temporal changes from 2000 to 2016 in the U.S. Both trend and pattern of divorce rate across states will be identified and several maps will be generated from ArcGIS and Geoda. This project will also delve into the spatial autocorrelation among divorce of each state. Does the spatial correlation holds significantly for divorce in the U.S.? This paper will provide with a hint to answer the preliminary question that whether divorce is “contagious”.

Suvaid Yaseen – Mapping Islamic Shrines in Kashmir

My presentation will map important Islamic Sufi shrines in the disputed borderland region of Kashmir in South Asia. I intend to conceptualize Kashmir's space in terms of its spiritual landscape, and in doing so, think beyond the borders enforced by the nation-states of India and Pakistan which control the region since the partition of the subcontinent in 1947. I am particularly interested in the historical flow of ideas through numerous Sufi orders. These came to occupy points in space as shrines and continue to retain their significance, and act as significant spatial markers, for people in the region. While I will map these shrines chronologically, in order of their coming into existence, I am also interested in tracing and mapping the flows of associated ideas through Sufi lineage networks.