



Place&Health2019

Hosted by the Geography & Geospatial Science Working Group (GeoSWG)

2019 Place & Health Conference: Detailed Agenda

Thursday, November 14, 2019, 8:30 am – 5:00 pm EST
CDC Roybal Campus, Global Communications Center (GCC)
To register, visit placeandhealthconference.com
Questions? Email GeoSWG@cdc.gov

****REMOTE ATTENDANCE is available for these sessions**

Remote attendance limit is 100 attendees and available on a first-come, first-serve basis. In-person attendance is highly recommended!

[Link to Live Adobe Connects Meeting](#)

Toll Free: 1-866-803-2146; Participant Passcode: 72947079

REGISTRATION

8:30 – 9:00 am

GCC, Lobby

OPENING PLENARY**

9:00 – 11:25 am

GCC, Auditorium A

Welcome & Introduction

9:00 – 9:05 am

Stephanie Foster, MPH, Chair GeoSWG

Plenary Address

9:05 – 10:15 am

Vulnerable Populations: Toward an Inclusive Spatiality

Lois Takahashi, PhD, Director, Price School of Public Policy, University of Southern California, Sacramento

Lois M. Takahashi is Houston Flournoy Professor of State Government at the University of Southern California Sol Price School of Public Policy, and Director of the USC Price School of Public Policy in Sacramento. She was President of the Association of Collegiate Schools of Planning (2015-2017). At UCLA, she was Interim Dean of the UCLA Luskin School of Public Affairs (2015-2016), Associate Dean for Research at the Luskin School (2014-2015), Chair of the UCLA Department of Urban Planning (2011-2013), and Director of the University of California Asian American and Pacific Islander Policy Multicampus Research Program (UCAAPI Policy MRP; 2009-2013). She received her PhD in Urban and Regional Planning from the University of Southern California in 1992, a dual MS in Public Policy and Architecture from Carnegie Mellon University in 1987, and an AB in Architecture from UC Berkeley in 1985.

Her research interests include HIV prevention for underserved populations, access to social services for populations in need (homelessness and HIV/AIDS), the NIMBY (Not In My Back Yard) syndrome, and community participation and environmental governance in Southeast Asian cities. She was Principal Investigator (with John Chin, Hunter College) on a National Institutes of Health NICHD funded grant (1R21HD074446-01A1) examining the spatial configuration of the massage parlor industry in Los Angeles and New York City. She is also a member of research teams studying the neighborhood dimensions of access to HIV treatment and care (Chandra Ford/PI, UCLA), and the effects of community violence on adolescent development (Dexter Voisin/PI, University of Toronto).

10-minute break



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Plenary Panel

10:25 – 11:25 am

Utilizing Geospatial Technology in Public Health Programs at CDC/ATSDR and Applications to Address Vulnerable Populations

Join us for a discussion with leaders from across the Centers for Disease Control and Prevention (CDC) and the Agency for Toxic Substances and Disease Registry (ATSDR). Panelists will highlight the current and future directions of geospatial technologies and methods to enhance health promotion, disease prevention, and emergency preparedness activities, especially with respect to vulnerable populations.

Moderator:

Rebecca Bunnell, PhD, Director of the Office of Science, CDC

Panelists:

Patrick Breysse, PhD, Director, ATSDR & National Center for Environmental Health, CDC

Chris Reh, PhD, Associate Director, ATSDR

Ed Rouse, MPA, MS, Senior Advisor, Division of Emergency Operations, CDC

Betsy Thompson, MD, MSPH, DrPH, Director for the Division of Heart Disease and Stroke Prevention, CDC

5-minute break

POSTER SESSION

11:30 am – 12:00 pm

GCC, Lobby

Poster Gallery – *See page 17 for Poster Gallery details.*

LUNCH & POSTER GALLERY

12:00 – 1:00 pm

Participants will be responsible for purchasing lunch; lunch options will be shared during the event.



CONCURRENT SESSIONS A

1:00 2:15 pm

See Individual Session details for room location

Session 1A: Spatial Visualization, Health, and Infectious Diseases

GCC, Rm 245 & 246

Moderator: Linda Schieb

AIDSVu: Accessing, analyzing, and visualizing HIV usage data

Chandni Jaggi, MPH (1); **Elizabeth Pembleton, MPH (1)**; Patrick Sullivan, DVM, PhD (1)

(1) PRISM Health (Programs, Research, & Innovation in Sexual Minority Health), Rollins School of Public Health, Emory University

This year, the President announced a renewed focus on ending the HIV epidemic by focusing resources on 57 priority areas including 48 counties, Washington DC, and San Juan, PR with the highest burden of HIV, and seven states with a rural burden. This plan makes clear the necessity of having data at fine levels of geographic detail to help end the HIV epidemic. AIDSVu, an interactive, online mapping tool, addresses this issue by providing maps of HIV prevalence, new diagnoses, and mortality, along with PrEP across the United States. AIDSVu displays HIV data at the state-, county-, and city-level to show where HIV resources are needed most. AIDSVu also provides demographic stratifications including age, sex, and race at all levels so that users can hone in on populations most disproportionately impacted by HIV in a geographic area.

Elizabeth Pembleton received her Bachelor of Science in Health Promotion and Behavior from the University of Georgia, and her Master of Public Health in Epidemiology from the University of Alabama at Birmingham. She has worked with STI risk perceptions within WSMW/WSW populations in the South, clinical data analytics with a healthcare IT company, and foodborne surveillance at the CDC. She now works for Emory University as the Associate Director, Programs for the AIDSVu and HepVu projects.

The Antibiotic Resistance and Patient Safety Portal: A geospatial platform on patient safety across the United States

Edward A. Sheriff, PhD, MPH (1); Preeta Kuty, MD, MPH (1); Athena P. Kourtis, MD, PhD, MPH (1); Andrew Dané (2); Josh Bullock (2); Kristin J Brinsley-Rainisch, MPH (2); Shane Engels (2); Laxma Kommareddy (2); Richard Hauck (2); Joe Mitchell (2); L. Clifford McDonald, MD (1)

(1) Division of Healthcare Quality Promotion, National Center for Emerging and Zoonotic Infectious Diseases, Centers for Disease Control and Prevention; (2) Deloitte LLP

On any given day, about 1 in 30 hospitalized patients have a healthcare-associated infection (HAI), many additional patients receive inappropriate antibiotics. Much of this burden in the United States befalls the very young or the very old and immunocompromised persons, vulnerable populations who are at a higher risk for HAIs. Open data systems for studying infectious diseases and antibiotic use (AU) data, made available to the public partners, healthcare providers, and researchers, can improve patient safety. This presentation will highlight an interactive Antibiotic Resistance & Patient Safety Portal (AR&PSP) developed to feature HAIs and AU using a variety of data sources within the Division of Health Quality Promotion (DHQP). The AR&PSP will become an effective communication platform to understand the burden of HAIs and distribution of AU across the nation, using geospatial technology. This portal provides enhanced methods to study, providing data throughout spatially driven mediums to drive decision-making.

Edward Sheriff is an Epidemiologist (Contractor) with the Division of Health Quality Promotion (DHQP). He provides analysis and research support to the Associate Director of Science in DHQP. His work is mainly focused on analyzing data from healthcare-associated infections, outpatient antibiotic use and antibiotic resistance data from multiple data sources.



A practical application of geospatial analysis to assess access to influenza vaccination among VFC -eligible children

Seth Meador, MPH (1); Yoonjae Kang, MPH (1); Tara Vogt, PhD (1); Kevin Gipson (1); Carla Black, PhD (1)

(1) Immunization Services Division, National Center for Immunization and Respiratory Diseases, Centers for Disease Control and Prevention

The Advisory Committee on Immunization Practices recommends an annual influenza vaccination for all persons aged 6 months and older who do not have contraindications to vaccination. Influenza vaccination coverage among children living in rural areas has consistently been lower compared to those who live in urban areas, including among children eligible to receive vaccine via the federally-funded Vaccines for Children (VFC) program which provides vaccines at no cost to children who otherwise might not be vaccinated because of inability to pay. We prepared county-level maps of the ratio of VFC influenza vaccines ordered by providers relative to estimated populations of VFC-eligible children in order to visualize and investigate differences in vaccine availability within states. Maps were provided to state immunization program managers to potentially inform their vaccine ordering practices. This project serves as an example of CDC providing data for action to protect the lives of vulnerable populations.

Seth Meador is a Health Scientist in the Assessment Branch of the Immunization Services Division where he manages the interactive reports on the 'VaxView' web pages and conducts spatial analyses.

Predicting the distribution of *Burkholderia pseudomallei* in the Americas using ecological niche modeling

Mark A. Deka, PhD (1); Jay E. Gee, PhD (1); Mindy Glass Elrod (1); Lindy Liu, MPH (1); William A. Bower, MD (1); Johanna S. Salzer, DVM, PhD (1); Daniel Romero-Alvarez, MD (2); Abdelkafar Alkische, MS (2); A. Townsend Peterson, PhD (2)

(1) Bacterial Special Pathogens Branch, Division of High-Consequence Pathogens and Pathology, Centers for Disease Control and Prevention; (2) Biodiversity Institute, University of Kansas

Global models have shown that there are areas throughout the Americas that are predicted to be environmentally suitable for *B. pseudomallei*, the causative agent of melioidosis. While there have been sporadic reports of melioidosis cases throughout the Americas, these reports often lack detection of *B. pseudomallei* from the environment. *Burkholderia pseudomallei*, is predominantly a bacterium associated with tropical and sub-tropical environments throughout the world. Geographically, melioidosis is considered endemic but underreported in much of Central and South America, but *B. pseudomallei* is yet to be environmentally isolated from many areas associated with human disease. Ecological Niche Models can be valuable to help understand environmental variables associated with the presence of *B. pseudomallei* in the Americas and predict the ecological range. Here, risk maps were produced using our current knowledge of occurrence of *B. pseudomallei* to estimate the potential for presence of *B. pseudomallei*. Results of this study provide significant evidence of positive environmental heterogeneity. These models may be used to inform national and local health officials of the environments associated with increased risk for the presence of *B. pseudomallei*. Furthermore, this study can be used for geographically targeted surveillance focusing on environmental sampling and educational campaigns for high-risk groups.

Dr. Mark A. Deka is an ORISE Fellow at the Centers for Disease Control and Prevention in the Bacterial Special Pathogens Branch (BSPB). His work centers around applications of geographic information sciences (GIS) for disease mapping, ecological niche modeling, medical geography, and the spatiotemporal epidemiology of underserved and at-risk population groups. He holds a doctorate in Geographic Information Science and Geography from Texas State University (2019).



GIS for chronic disease prevention – State and local health departments are leading the way

Michele Casper, PhD (1); Joshua Tootoo, MS, GISP (2); Amir Mirsajedin, MPH (1); Adam Vaughan, PhD, MPH, MS (1); Linda Schieb, MSPH (1); Hannah Herold, MPH, MA, CHES (3); MaryCatherine Jones, MPH (3); Marie Lynn Miranda, PhD (2)

(1) Division for Heart Disease and Stroke Prevention, Centers for Disease Control and Prevention; (2) Children's Environmental Health Initiative, Rice University; (3) National Association of Chronic Disease Directors

State and local health department staff are keenly aware of the importance of local level data and are leading the way in using GIS to address chronic disease prevention. We will present chronic disease-related maps from health departments that document geographic disparities, inform policy and program decisions, and/or enhance collaboration with internal and external partners. We will also share instances of health departments using GIS to address Public Health Foundation's Core Competencies for Public Health Professionals or CDC/Council of State and Territorial Epidemiologists Applied Epidemiology Competencies. Health departments included in this presentation participated in the GIS and Chronic Disease Capacity Building Project. Additional chronic disease-related maps are posted on the Map Gallery of the Chronic Disease GIS Exchange. This presentation will highlight how geospatial perspectives can expand the focus of public health efforts beyond the individual and promote public health action at the local, state, and regional levels.

Michele Casper is an epidemiologist and serves as the Team Lead for the Small Area Analysis Team within the Division for Heart Disease and Stroke Prevention at CDC. Her research interests include the spatiotemporal trends of heart disease and stroke morbidity and mortality along with the use of local level data for tailoring heart disease and stroke prevention policies and programs to the specific needs of communities.

Mapping the population at risk of developing Type 2 diabetes in the state of Georgia to increase the efficiency of targeted public health programs and resources

Yesser Sebeh, DMD, MPH (1)

(1) Bio-statistics Research Collaborative, Georgia State University

Since the epidemiological transition of non-infectious diseases, funds, and health promotion programs are following this trend and focusing on the prevention of chronic diseases. Type 2 diabetes mellitus (T2DM) has an estimated 8.5% prevalence worldwide (WHO). In the United States, the same percentage goes up to 9.4% of the population. Added to that, CDC estimates that more than 84 million people in the US have pre-diabetes and are at risk of developing T2DM in the next five years. Population-wide diabetes screening implies an inefficient allocation of resources due to the high cost. This presentation will focus on: the importance of an efficient resource allocation, the economic impact of early diabetes prevention, identifying the population at risk of developing diabetes in the state of Georgia, and map (ArcGIS) the most vulnerable population to influence future resource allocation. Statistical analysis and a diabetes risk score are used.

Yesser Sebeh is a Fulbright foreign student and a Doctor of Dental Medicine (DMD) from Tunisia pursuing a master's degree in Public Health at Georgia State University with a concentration in epidemiology. Prior to becoming a Fulbrighter, he worked in Tunisian hospitals delivering dental treatment and oral surgery to patients from poor communities. He also advocated for a better healthcare access in his country while leading a student movement fighting for healthcare reform. He is currently working with Grady — a public hospital in Atlanta— to plan and implement a community benefit program. He is also involved in multiple research projects within the "Bio-statistics Research Collaborative." His research interests are the economic evaluation of health promotion programs and using GIS software to inform future policy decisions and resource allocation.



Where do cancer survivors experience the greatest burden of heart disease? Predicting state-level heart age among cancer survivors in the United States

Lia Scott, PhD, MPH (1); Quanhe Yang, PhD (2); Nicole F. Dowling, PhD (1); Lisa C. Richardson, MD (1)

(1) Division of Cancer Prevention and Control, Centers for Disease Control and Prevention; (2) Division of Heart Disease and Stroke Prevention, Centers for Disease Control and Prevention

Cancer and cardiovascular disease are leading causes of morbidity and mortality in the United States. Heart age has been previously used as a way to express risk for developing cardiovascular disease. This study estimates geographic disparities in excess heart age among U.S adult cancer survivors aged 30-74. Data were drawn from BRFSS 2013, 2015, and 2017 surveys and applied to the sex-specific non-laboratory-based Framingham risk score model. Mean excess heart age was highest in Alabama for male cancer survivors (12.4 years) and Louisiana for female cancer survivors (10.8 years). The prevalence of excess heart age ≥ 5 years was highest in West Virginia for male cancer survivors (68.1%) and Mississippi for female cancer survivors (59.1%). Excess heart age varied greatly among states, with approximately 7-year difference in the mean between the highest and lowest state.

Dr. Lia Scott is a Prevention Effectiveness (PE) Fellow in the Division of Cancer Prevention and Control's Office of the Associate Director for Science. She works as a geospatial and social epidemiologist supporting scientific efforts division-wide. She earned her MPH and PhD in Epidemiology from Georgia State University School of Public Health.

Measuring and visualizing equity in long-term mortality trends among Blacks and Whites in US counties from 1990-2016

Peter Baltrus, PhD (1,2); Chaohua Li, MPH (1); Megan Douglas, JD (1,2); Anne Gaglioti, MS, MD, FAAFP (1,3)

(1) National Center for Primary Care, Morehouse School of Medicine; (2) Department of Community Health and Preventive Medicine, Morehouse School of Medicine; (3) Department of Family Medicine, Morehouse School of Medicine

Introduction: From 1935-2014, the US mortality rate declined, but disparities by place and racial subgroup persist. We identified long-term race-specific county-level trends and disparities in trends in all-cause mortality. Methods: Age-adjusted, all-cause county mortality rates between 1999-2016 were used to identify similar trends for blacks and whites using group-based trajectory analysis. We categorized counties with equitable, diverging, or dissimilar trajectories. We created maps of race-specific trajectory groupings and racial equity categories using QGIS. Results: Among 3060 counties, blacks had less favorable trajectories than whites. 125 counties achieved equitably low rates for blacks and whites. The southeastern US had the least favorable trajectory patterns overall. Conclusion: We observed geographic differences in racial disparities in long term mortality trends in US counties. A subset of counties achieved equitable mortality rate trajectories. Characterizing such places could inform interventions to reduce racial disparities in all-cause mortality rates.

Chaohua Li is a biostatistician and researcher at National Center for Primary Care, Morehouse School of Medicine (MSM). He was trained in epidemiology at Emory University, where he received his MPH degree. Mr. Li is interested in identifying racial and geographic disparities in health outcomes and health care utilization. He has contributed to studies describing temporal trend in county-level all-cause mortality rate using group-based trajectory analysis. The Louis W. Sullivan National Center for Primary Care (NCPC) serves as a national resource for front-line practitioners, educators, researchers, and policy makers who impact our primary healthcare system; the mission of the NCPC is to strengthen the primary care system through education, research and training to improve health outcomes while advancing and sustaining health equity.

Panel 1: The Intersection of Place & Health: Work of the Geospatial Research, Analysis, and Service Program GCC, Auditorium A**

Moderator: Kelly Fletcher

5-minute break



CONCURRENT SESSIONS B

2:20 3:55 pm

See Individual Session details for room location

Session 1B: Social Determinants of Health, Place, and Accessibility

GCC, Rm 245 & 246

Moderator: Melissa Smith

Comparing sociodemographic characteristics of census tracts with two respective sub-county geographies

D. Aaron Vinson, MPH (1); Heather Strosnider, PhD, MPH (1); Angela K. Werner, PhD, MPH (1)

(1) Environmental Public Health Tracking Section, Emergency Management, Radiation, and Chemical Branch, Division of Environmental Health Science and Practice, National Center for Environmental Health, Centers for Disease Control and Prevention

CDC's National Environmental Public Health Tracking Program developed two standardized sub-county geographies to enhance surveillance. This study explores how sociodemographic characteristics of census tracts compare with sub-county geographies created through aggregation. Population data were obtained for five states (Arizona, Colorado, Florida, Maine, and New York) from the 2010 American Community Survey for three sociodemographic variables: elderly population, non-white including Hispanic population, and poverty status. The proportion of each variable for each geography was calculated. Each variable was also classified into five natural break groups for census tracts and sub-county geographies. The demographics in each state remained similar across the three sub-county geographies. For all sociodemographic variables, less than 9% of census tracts changed by two or more groups when compared to their aggregated geographies except in two states (e.g., the non-white including Hispanic population in Maine). The Tracking Program aggregation methodology generally creates sub-county geographies with similar sociodemographics.

Aaron Vinson is currently an ORISE Fellow with the Environmental Public Health Tracking Section. He received his Master of Public Health degree from Georgia State University in 2018, focusing on using GIS to support public health surveillance. In his free time he enjoys hiking, trying new coffee shops around town, and watching Seinfeld.

Evaluation of a low-cost tool for tracking alcohol marketing density in the urban slums of Kampala, Uganda

Joseph Madden, MPH (1); Dr. Monica Swahn, MPH, PhD (1); Dr. Ellis A. Adams, PhD (2)

(1) School of Public Health, Georgia State University; (2) Global Studies Institute, Georgia State University

Given the lack of insights into alcohol marketing in urban slums and the structural and financial barriers for research in these regions, it is important to create cost-effective tools for tracking who, what, and how much marketing is being done. Doing this can help drive the creation evidence-based policies to reduce alcohol marketing exposure and alcohol consumption by adolescents and other vulnerable populations in these traditionally overlooked regions. We collected photographs (n=181) and the GPS metadata of alcohol-related marketing and products across four 100m blocks in the Makindye District of Kampala in June 2019. Through this pilot exercise, the research found that this tool is a useful and cost-effective tracking and mapping alcohol marketing density, though there are some improvements to the process that will be required for future studies to be effective and to allow for this project to scale beyond these first 100m.

Joseph Madden is a recent graduate from Georgia State University with a Master's degree in Public Health with a concentration in health policy (2017 - 2019). His research interests are global health oriented with a focus in neglected tropical diseases, child and maternal health, and alcohol policy (or lack thereof) in the developing world. He is also interested in leveraging new technology in low- and middle- income countries to improve data collection, empower evidence-based policies, and ultimately better the health outcomes of vulnerable populations.



Social determinants of health, individual social needs, and refugee health in Clarkston, GA

Iris Feinberg, PhD (1); Mary Helen O'Connor, PhD (1)

(1) Georgia State University

Approximately 17,000 refugees who speak 60 different languages have been resettled in Clarkston, Georgia since 2004 under U.S. Resettlement Program which provides refugees with legal, financial, and social resources to assist them for about 3 months. Even with this support refugees continue to struggle with access to basic health care, high rates of mortality and morbidity, trauma-induced stress, lack of health insurance and challenging social determinants of health (SDOH) which impact both well-being and sick care. Primary care teams are at the forefront of caring for Clarkston's refugee community. Cultural and language dissonance and poor health status exacerbate challenges that refugees face in accessing health care. Need for care is further complicated by SDOH (e.g., education, literacy skills, transportation, built environment, culture). We present findings and a GIS map of SDOH from a recent mixed-methods study in the Clarkston community.

Dr. Iris Feinberg is the Associate Director of the Adult Literacy Research Center at Georgia State University. Her research focuses on health literacy as it relates to vulnerable populations and health professions students. She received her PhD at GSU along with a MA in Applied Linguistics. Dr. Feinberg's prior professional history includes running a health care company for 25 years in the Atlanta area. Her prior education is a MBA from Temple University and BBA from the Wharton School, University of Pennsylvania.

Does distance matter? Applying multilevel mixed-effects modeling and spatial analysis methods to understand healthcare utilization in Java, Indonesia

Fikriyah Winata, MS (1)

(1) Department of Geography and GIS, University of Illinois at Urbana-Champaign

The uneven distribution of health facilities in developing countries is an important issue in health care accessibility and utilization. The sparse and uneven spatial distribution of services means that people often experience long-distance travel and spend significant time and money to access health services. These costs are especially significant for low-income and vulnerable populations. This study employed multilevel mixed-effect modeling and GIS mapping and spatial analysis methods to analyse geographic dimensions of healthcare utilization in Indonesia based on three measures: distance, travel time, and travel cost. Differences were assessed based on the type of facility, purpose of visit, and urban or rural location. Results showed that patients face high travel distances, times, and costs in reaching health services and travel burden varies geographically and across types of health services. This knowledge will contribute to policy-making in improving health care services and increasing access to vulnerable populations in Indonesia.

Fikriyah Winata is a second-year Ph.D student with a concentration in health geography at the Department of Geography and GIS, the University of Illinois at Urbana-Champaign. She has a master's in Geographic Information Science and B.S in Geography. Her interest in healthcare accessibility, migration, and gender brought her to examine how a mixed method in health geography could potentially be employed to understand how Indonesian women domestic workers access healthcare in Hong Kong and Malaysia. Her interest also draws on the theme of therapeutic landscape and network (a key concept in health geography) to understand how this concept could potentially contribute to the domestic workers' efforts in maintaining their health and well-being. Prior to her attendance at the University of Illinois, she was a GIS Specialist working at Esri Indonesia. Professionally, she equipped herself with the CTT+ (Certified Technical Trainer), Esri Certified Instructor, and Esri ArcGIS Desktop Certification.

The influence of rurality on SNAP office accessibility

Lan Mu, PhD (1); Yu Chen, MS (2); Chen Zhen, PhD, (2)

(1) Department of Geography, University of Georgia; (2) Department of Agricultural & Applied Economics, University of Georgia

While several studies have explored geographic relationships within the Supplemental Nutrition Assistance Program (SNAP), results have been mixed. Findings have revealed an imbalanced SNAP participation rate among eligible populations in both suburban and



rural areas. This study thus investigated the surrounding context and degree to which SNAP office accessibility is linked to rurality, participant demographics, socioeconomic characteristics, and the program's overall participation rate. We calculated road travel time and distance to the most conveniently located SNAP offices for each block group in the conterminous U.S. Results showed that very ten percentage points of increase in rurality decreased SNAP office accessibility by one additional minute of travel time. The Rurality-Travel Clock (RTC) visualization tool was also designed to provide a graphic description of the urban-rural setting and SNAP office accessibility.

Dr. Lan Mu is Professor of Geography at the University of Georgia (UGA). Her research interests include GIScience for health and the environment, spatial analysis and modeling, computational geometry, cartography and geovisualization. She also serves as the program coordinator of UGA's undergraduate and graduate GIScience Certificate Programs.

Session 2B: GIS, Vulnerability, and Public Health Emergencies

GCC, Rm 247 & 248

Moderator: Mark Deka

From geek to chic: Storytelling through maps

Sara Holcombe (1); Madison Walter-Garcia, MPH, CHES (1); Jacqueline Woodring, (1); Jasmine Burton, MScPH (1)
(1) Division of Global Health Protection, Center for Global Health, Centers for Disease Control and Prevention

The Division of Global Health Protection's (DGHP) mission is to build other countries' capacity to prevent, detect, and respond to public health threats. Due to its international presence, maps are often a key visualization tool employed by DGHP to communicate scientific information and provide global context to a lay audience. Maps can effectively transform large amounts of raw data into a visualization that is compelling and easy to understand. DGHP uses both static and animated gifs to visually portray data across a variety of mediums, including print publications, electronic newsletters, and social media. Updates From the Field (UFTF) is a biannual communication product shared with partners and policymakers to illustrate and garner support for global health security through stories. It also serves as a vital connection point between DGHP's headquarters, field staff, and various branches and programs across the division.

No presenter biography provided.

Health vulnerability to climate change

Arie Manangan, MA (1); Shubhayu Saha, PhD (1); Emma Hines, MA (1); Claudia Brown, MDP (1); Paul Schramm, MPH (1)
(1) Climate and Health Program, Division of Environmental Health Science and Practice, National Center for Environmental Health, Centers for Disease Control and Prevention

Health vulnerability to the effects of climate change will vary geographically based on the intersection between climate-related exposures, sensitivity (i.e. susceptibility to harm), and adaptive capacity (i.e. the ability to cope with potential hazards). The CDC's climate and health program developed technical reports for best practices for state health and local health departments to develop climate and health vulnerability assessments (CHV), which helps define those communities that demonstrate relatively greater vulnerability to the health impacts of climate change. We developed a CHV case study for Georgia, focusing on several climate-related exposures (e.g. extreme flooding, extreme heat). Additionally, we showcased several climate and health vulnerability assessments developed by CDC's Climate Ready States and Cities Initiative (CRSCI) grantees who are implementing the Building Resilience Against Climate Effects (BRACE) framework. We also provide examples of how CRSCI grantees use their vulnerability assessments in the implementation of the BRACE framework.

Arie Manangan is a health scientist for the CDC's Climate and Health Program. Arie has background in health geography and Geographic Information Systems (GIS) and his work focuses on mapping the human health risks associated with a changing climate. He was the lead scientist on the development of a CDC best practices document for state and local health departments to



quantitatively assess and identify at-risk communities to the health effects of climate change. His research also focuses on climate-related health exposures such as pollen and flooding, and how these risks are changing over time.

Social vulnerability and local access of medical care during Hurricane Harvey

David Rickless, MS (1); Grete Wilt, MPH (1); Danielle Sharpe, MSc (1); Noelle Molinari, PhD (2); Melissa Pagaoa, MPH (2); Tanya Telfair LeBlanc, PhD (2); William Stephens, MS (3)

(1) Geospatial Research, Analysis, and Services Program, Division of Toxicology and Human Health Sciences, Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry; (2) Division of State and Local Readiness, Center for Preparedness and Response, Centers for Disease Control and Prevention; (3) Texas Informatics

Drawing on the social vulnerability paradigm of natural hazards research, this study explored demographic indicators of vulnerability for patients from the Hurricane Harvey impact area who sought medical care at emergency departments and Disaster Medical Assistance Team units, in both the Dallas-Fort Worth and Houston areas during the storm. The objectives were to characterize the relative vulnerability of affected populations who presented for emergency medical care locally, as well as those who presented for care away from home in DFW, and to determine whether more vulnerable communities in the disaster area were more likely to seek medical care locally or elsewhere. Communities with high percentages of patients presenting for medical care locally were significantly clustered. Controlling for population density and flood extent, spatial lag regression models found that communities with more patients presenting locally tended to have greater socioeconomic vulnerability and lower vulnerability based on household composition and disability.

David Rickless is a geographer and GIS analyst in the Geospatial Research Analysis and Services Program in ATSDR. He has a master's degree in geography from the University of Georgia, and his research interests include geographic information science, social vulnerability, natural hazard resilience, and environmental health.

The findings and conclusions in this presentation have not been formally disseminated by the Centers for Disease Control and Prevention or the Agency for Toxic Substances and Disease Registry and should not be construed to represent any agency determination or policy.

Small area estimates of populations with chronic conditions for community preparedness for public health emergencies

Kevin A. Matthews, PhD (1); James B. Holt, PhD (1); Hua Lu, MS (1); Yan Wang, PhD (1); Jennifer M. LeClercq, MPH (1); Kurt J. Greenlund, PhD (1); Craig W. Thomas, PhD (1)

(1) Division of Population Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention

The objective of this presentation is to demonstrate a flexible and practical method to obtain near real-time estimates of the number of at-risk community-dwelling adults with a chronic condition in areas potentially affected by a public health emergency. We used small area estimation with survey responses from the 2016 Behavioral Risk Factor Surveillance System together with a geographic information system to predict the number of adults with chronic obstructive pulmonary disease (COPD) who lived in the forecasted path of Hurricane Florence in North and South Carolina in 2018. We estimated that a range of 32,002 to 35,552 adults with COPD resided within 50 miles of 3 consecutive daily forecasted landfalls. We demonstrated the feasibility of quickly producing detailed estimates of the number of residents with chronic conditions who may face life-threatening situations because of a natural disaster. These methods are applicable to a range of planning and response scenarios.

Dr. Kevin Matthews is a Health Geographer at Centers for Disease Control. His work centers around applications of geographic information sciences (GIS) for analyzing the health of populations, which includes disease mapping, medical geography, spatiotemporal epidemiology of chronic disease, and spatial accessibility for health services research. He holds a Master of Science in the Geographic and Cartographic Sciences from George Mason University and a doctorate in Geography from the University of Iowa. He has 22 years of professional GIS experience; over 12 of those years have been in an scientific research setting related to public health related projects. He is active in American Association of Geographer's Health and Medical Geography Specialty Group



and hopes to recruit many of his colleagues from that group as peer reviewers for PCD. Overall, his work is motivated by a desire to promote the health of populations and to lessen the burden of chronic disease. That desire has led to collaborations with physicians, public health professionals, statisticians, and epidemiologists who need an expert to analyze geographic patterns of health and chronic disease.

Using high resolution satellite imagery & GIS technology to strengthen microplans

Brian Kaplan (1); Guy Maurice (2); Adam McKay (2); Daniel Obare (2); Carolyn Sein (2); Ravi Shankar (2)

(1) Geospatial Research, Analysis, and Services Program, Division of Toxicology and Human Health Sciences, Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry; (2) World Health Organization

In response to a 2018 Polio outbreak in Papua New Guinea (PNG), WHO with support from CDC, conducted a pilot project in the Fall of 2019 to evaluate the use of high resolution satellite imagery and GIS technologies to strengthen immunization microplans. Using existing public data of health facilities, villages, boundaries and roads, maps were made of 46 Local Level Governments (Admin level 3) in Central and Morobe Provinces in PNG. The health facility data was a limited coverage. These maps were presented to 71 health officials at two workshops in August and September of 2019. The maps were marked up by the officials and digitized into ArcGIS Online. From the workshop, 1,365 health facilities were mapped along with 106 catchment areas. The data are currently being cleaned and will be added to a revised set of maps for distribution and use by PNG health officials.

Mr. Brian Kaplan began work with ATSDR in 1996 as an Environmental Health Scientist evaluating exposure pathways at Department of Defense and private industrial facilities. He specialized in using air dispersion modeling to recreate past exposures. Brian has been working with the GRASP team since 2004, first as a liaison to ATSDR focusing on the use of GIS and environmental data to analyze chemical exposures, air dispersion, and the linking of environmental data with health outcome data. From 2010 to 2019, Mr. Kaplan was the coordinator of GRASP's Rapid Response Emergency and Preparedness Support (RREPS) group applying GIS and GIS technologies to emergency response and preparedness activities. Since 2011, a large percentage of his time has been dedicated to using GIS in support of CDC's Polio eradication program. Mr. Kaplan currently focuses on GRASP support to the CDC's Polio response and GRASP's Gather Shared Services.

Panel 2: The GIS Team for CDC's Ebola Outbreak Response, 2018-2019**

GCC, Auditorium A

Moderator: Erica Lehnert

James Fuller, PhD, MSPH (1); Amber Dismar, MPH (1); Bob Neurath, MS (2); Michael Wellman, MS (2); Becky Maholland, MS (2); Tess Palmer, MPH (3); Becky Merrill, PhD, MHS (4); Elvira McIntyre, MS (4); Amy Lang, MPH (3)

(1) Emergency Response and Recovery Branch, Division of Global Health Protection, Centers for Disease Control and Prevention; (2) Situation Awareness Branch, Division of Emergency Operations, Centers for Disease Control and Prevention; (3) Geospatial Research, Analysis, and Services Program, Division of Toxicology and Human Health Sciences, Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry; (4) Division of Global Migration and Quarantine, National Center for Emerging and Zoonotic Infectious Diseases, Centers for Disease Control and Prevention

During 2018, the Democratic Republic of the Congo faced two unrelated outbreaks of Ebola virus disease. In May of 2018, cases of Ebola virus disease were reported in Equateur Province, and the outbreak culminated in 55 cases and 28 deaths. After this outbreak was declared over, North Kivu Province began reporting unrelated cases. This outbreak is ongoing and has seen over 3000 cases and more than 2000 deaths. GIS specialists from across the CDC have worked with partners at the DRC MOH, WHO, and others to address both outbreaks, and each presents unique challenges. From mapping population movement, getting response deployers the best available basemaps, and addressing concerns over data accuracy, the GIS group of the Ebola Coordination Team has been crucial to response efforts. This session will highlight these geospatial efforts in a series of brief lightning talks followed by a moderated panel discussion with Q & A.

5-minute break



CONCURRENT LIGHTNING TALK SESSIONS

4:00 - 4:30 pm

See Individual Session details for room location

Lightning Talk Session 1: GIS for Emergency Preparedness and Response

GCC, Rm 245 & 246

Moderator: Laura Wright

Use of geographic information system language mapper to identify translation needs during emergency response

Lisa Briseño, MS (1)

(1) Division of Emergency Operations, Center for Preparedness and Response, Centers for Disease Control and Prevention

Approximately 25 million individuals in the United States have limited English proficiency (LEP). Limited research into the outcomes of natural disasters has shown that people with LEP face significant barriers in accessing health and safety information. Without access to potentially life-saving information such as tornado warnings, evacuation orders, and information on how to clean up safely after a disaster, people with LEP are likely to face worse outcomes during public health emergencies. An interactive language map (available at <https://www.lep.gov/maps/>) based on the U.S. Census Bureau American Community Survey displays where, and to what degree, languages are spoken in a given area. Health departments, emergency planners and responders, and others can use this map to learn how many LEP speakers of different languages are in their areas. Learn about how CDC's Joint Information Center uses this tool to help identify translation needs during an emergency response.

Lisa Briseño, MS, is a Health Communication Specialist with the U.S. Centers for Disease Control and Prevention (CDC), working in the Division of Emergency Operations. An emergency risk communication professional, teacher, and environmental scientist by training, she is also a passionate advocate on behalf of those who face disproportionate barriers in accessing health, safety, and advancement beyond the barriers. Lisa has supported CDC in multiple global and domestic emergency responses including, the Zika response, the 2014 Ebola response, and the water crisis in Flint, Michigan. Her training and experiences have helped her become especially well-suited for communicating with people with literacy and language challenges, considering and incorporating cultural aspects within health communication efforts, and distilling critical health information into a relevant, plain language format.

Comprehensive Disaster Assessment Tools (CDART) project for health care and senior living facilities

Kelsey Benson, MPH (1); Elizabeth Irvin, PhD (1); Chris Poulet (2)

(1) Environmental Epidemiology Branch, Division of Toxicology and Human Health Sciences, National Center for Environmental Health, Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry; (2) Division of Community and Health Investigations, Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry

During Hurricane Maria Response Activities in Puerto Rico, the CDC/ATSDR staff developed and piloted the use of app-based environmental assessments for health care facilities. The pilot work indicated the app-based assessments reduced staff burden, reduced the occurrence of data entry errors, and provided invaluable key geospatial information. As part of recovery activities, the Comprehensive Disaster Assessment and Readiness Tools (CDART) Team collaborated with the Puerto Rico Department of Health and Department of Family to develop a suite of tools to determine preparedness status and conduct assessments post-disaster for public health facilities, including health care and elder care and senior living facilities. Additionally, CDART captures information related to environmental contamination to prevent and mitigate exposure. These projects aim to enhance the capacity for public health protection in Puerto Rico, as well as provide data integration across agencies for enhanced public health protection pre- and post-disaster.

Ms. Kelsey Benson is an Epidemiologist in the Environmental Epidemiology Branch at the Division of Toxicology and Human Health Sciences, National Center for Environmental Health, Agency for Toxic Substances and Disease Registry (DTHHS/NCEH/ATSDR) at the Centers for Disease Control and Prevention. She has worked on and helped manage several aspects of health studies including the Federal Research Action Plan on Tire Crumb Rubber (FRAP), Polycythemia Vera Cancer Cluster Investigation, Anniston Community Health Survey, and a neonatal cohort study. She is also the project lead for the Comprehensive Disaster Assessment and Readiness Tools Project (CDART).



A GIS driven method of household survey sampling: Polio serologic surveys in the Lake Chad basin

Tess Palmer, MPH (1); Bacteriology Virology Unit CERMEs, Niamey, Niger; Laboratory HGRN, N'Djamena, Chad; Integrated Epidemiological Surveillance Service, Ministry of Health, Chad; Expanded Program on Immunization, Chad; Polio Eradication Branch, CDC Atlanta, GA USA; WHO AFRO; Polio laboratory, CDC Atlanta, GA USA; Clinical Trial and Research Team, WHO HQ, Geneva; UNICEF WCARO; WHO Chad; WHO Niger

(1) Geospatial Research, Analysis, and Services Program, Division of Toxicology and Human Health Sciences, Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry

Serologic surveys are conducted in order to measure the level of immunity against polio in a community. This evidence of vaccine coverage can be used to measure a country's progress towards elimination of the virus. In Niger and Chad, where human resources to conduct such a survey are spread thin, a method of cluster and household selection using satellite imagery before arriving in the field allowed data collectors to cut their time spent in the field in half. This method saved time and money and lowered the probability of security incidents. An open source mapping application was then used to assist data collectors in navigating to selected household structures to conduct the survey. This lightning talk will describe the pros and cons of using this method and how it can be reused in future public health household surveys.

Tess is a returned a Peace Corps Volunteer (Guinea '12-'14), where she served as the President of Peace Corps Guinea's national malaria program and a secondary school chemistry teacher. Following Peace Corps, she received an MPH in global epidemiology with a graduate certificate in complex humanitarian emergencies from Emory University. During graduate school, Tess was a fellow with CDC's Emergency Response and Recovery Branch, working on various global water sanitation and hygiene (WASH) projects in Haiti, including the implementation of an ODK household survey to assess WASH risks. Tess is currently the deputy team lead of the Rapid Response and Emergency Preparedness Unit in the Geospatial Research Analysis and Services Program (GRASP) at CDC. With GRASP, Tess focuses on GIS applications to public health emergency response activities and strives to find clever solutions to the challenges faced during emergency situations.

Mapping geographic disparities in natural disaster mortality by race and ethnicity

Danielle Sharpe, MSc (1, 2); Amy Wolkin, DrPH, MSPH (3)

(1) Geospatial Research, Analysis, and Services Program, Division of Toxicology and Human Health Sciences, Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry; (2) Department of Epidemiology, Rollins School of Public Health, Emory University; (3) Center for Preparedness and Response, Centers for Disease Control and Prevention

Disasters affect certain populations more adversely than others based on factors, such as race and ethnicity. However, research has rarely studied disparities in disaster mortality dually by space and race/ethnicity. We examined disparities in disaster mortality and spatial patterns by race and ethnicity for all U.S. states during 1999-2017. We obtained age-adjusted mortality rates from the CDC Wide-ranging Online Data for Epidemiologic Research (WONDER) database for deaths attributed to forces of nature. All analyses and spatial mapping were conducted using RStudio 1.1.456. During 1999-2017, Black and Native Americans were 1.78 and 7.08 times more likely to suffer disaster mortality compared to White Americans, respectively. Spatially, disaster mortality was highest among minorities in southern, southwestern, and intermountain western states. This research highlights the need for state-level policies supporting minority-targeted disaster preparedness and mitigation interventions, particularly in the South and West regions of the U.S.

Danielle Sharpe is a Geospatial Epidemiologist within the Geospatial Research, Analysis, and Services Program (GRASP) at CDC and serves as the Team Lead for the CDC's Social Vulnerability Index (CDC SVI). Danielle is also a PhD student in the Department of Epidemiology at Emory University. She received her MSc in Epidemiology from the University of Florida in 2016 and her BS in History, Technology, and Society (Concentration: History of Medicine) from the Georgia Institute of Technology in 2014. Her current research interests include spatial epidemiology, social vulnerability, public health preparedness and response, and healthcare accessibility for populations with access and functional needs.



Utilizing web GIS to address lung cancer

Lisa Douangchai Wills, MSc, GISP (1); Liora Sahar, PhD, GISP (1); Ka Kit (Antonio) Liu, BSc (1); Robert Smith, PhD (1, 2)
(1) American Cancer Society; (2) National Lung Cancer Roundtable

The American Cancer Society (ACS) is the founding organization of the National Lung Cancer Roundtable (NLCRT), a national coalition of organizations that advances a range of initiatives to reduce the burden of lung cancer. The ACS GIS team supports the mission of the NLCRT through effective visualization of related data, analysis, and research. Web applications are used to disseminate data and research outcomes, and provide useful tools to inform decision making and assist in identifying areas of focus for implementation of programs. The National Lung Cancer Atlas provides data and appropriate tools at different geographic levels, and a series of story maps provide unique state-based narratives for addressing challenges, concerns, and successes specific to the community. Each application and story map poses its own design and configuration challenges. We will share the process, design, and tips to translate a vision of an application into a successful story.

Lisa Douangchai Wills, MS, is a senior geospatial scientist on the GIS team in the Statistics & Evaluation Center at the American Cancer Society. She supports geospatial activities across the society, consults about GIS technology and tools as well as contributes, collaborates, and engages in research activities and publications. She is a member of the Urban and Regional Information Systems Association and the secretary of the Georgia Geospatial Technical Advisory Committee, professional organizations focused on advancing geospatial technologies, improving geospatial legislation, increasing geospatial awareness, and educating students in K-12 and higher education. Lisa earned her undergraduate degree in Geography with an emphasis in GIS from Georgia State University and her graduate degree in City and Regional Planning from Georgia Institute of Technology. Lisa's professional experience includes projects related to infrastructure, planning, and emergency management and preparedness.

Displaying sub-county data on the National Environmental Public Health Tracking Network

Angela Werner, PhD, MPH (1)

(1) Environmental Public Health Tracking Section, Emergency Management, Radiation, and Chemical Branch, Division of Environmental Health Science and Practice, National Center for Environmental Health, Centers for Disease Control and Prevention

The Centers for Disease Control and Prevention's (CDC) Environmental Public Health Tracking Program (Tracking Program) is building a system of sub-county data to enhance the spatial resolution of data currently available on the National Environmental Public Health Tracking Network (Tracking Network). The Tracking Program will display three sub-county geographies on the Tracking Network: state by census tract, state by 5k resolution (for a more common outcome aggregation scheme of census tracts aggregated to a minimum of 5,000 persons), and state by 20k resolution (for a rarer outcome aggregation scheme census tracts aggregated to a minimum of 20,000 persons). At present, the Tracking Program displays numerous sub-county measures under the populations & vulnerabilities content area. The Tracking Program plans to add sub-county nationally consistent data and measures over time to increase the availability and accessibility of sub-county data.

Angela Werner received her MPH from the George Washington University and her PhD in Environmental Health and Epidemiology from the University of Queensland. She is currently working with CDC's Environmental Public Health Tracking Program with a focus on integrating sub-county data into the Tracking Network



Simplifying the assessment of alcohol marketing density in urban slums: A pilot test of 4 slums in Kampala, Uganda

Dr. Monica Swahn, MPH, PhD (1)

(1) School of Public Health, Georgia State University;

Objective: Traditional methods of assessing alcohol marketing density have been quite complex and not designed or applicable for implementation in urban slums in low resource settings. We developed a new and simplified approach focusing on road frontage. **Methods:** We conducted 4 scans of alcohol marketing in the business area serving residential slum areas in Kampala centered around the local motorcycle taxi (boda boda) station. Three teams assessed 400M of road frontage, the number of alcohol ads, capturing a photograph of the ads and the GPS coordinates which were merged for analyses. **Results:** Across all locations, 51 alcohol ads were noted. Within each location, the numbers of ads ranged from 1 to 38 per 400M. In one location the density of alcohol ads were 21/100M. **Conclusions:** Establishing feasible assessment strategies may assist local communities in addressing and potentially reducing the alcohol ads density, in particular in areas with many children.

Dr. Monica Swahn is a distinguished university professor in the School of Public Health at Georgia State University. Her research interests pertain mostly to the precursors and consequences of health risk behaviors such as alcohol and substance use, violence and HIV/AIDS among vulnerable youth in urban slums focusing on both individual and structural factors. For the last several years, she has been particularly interested in alcohol marketing and alcohol policy both in the U.S. and internationally.

Using geospatial analysis to evaluate access to high-quality lung cancer screening in the US

Liora Sahar, PhD, GISP (1); Vanhvilai L. Douangchai Wills, MSc (1); Ka Kit (Antonio) Liu, BSc (1); Robert Smith, PhD (1, 2)

(1) American Cancer Society; (2) National Lung Cancer Roundtable

Screening for lung cancer has been recommended as a measure to reduce mortality among current and former heavy smokers, but annual screening in high-risk adults remains low. To better understand low uptake of lung cancer screening, we evaluated access to screening nationwide. The analysis was performed at different geographic levels using the road network to calculate travel distances and times for the recommended age groups. Differences in results between geographic levels and rural and urban settings can help inform future geographic evaluations of access to screening. We integrated the accessibility results with smoking prevalence and lung cancer mortality rates to better identify geographic disparities in access to screening facilities and focus areas for interventions. We identify areas with high lung cancer mortality but adequate screening accessibility, while others have inadequate accessibility. The suggested focus areas can inform state and local officials when considering programs to increase access to screening.

Liora Sahar, PhD, is a Scientific Director for Geospatial Research within the Statistics & Evaluation Research Center at the American Cancer. The focus of her work within society programs is to engage in geospatial research with application to ACS mission and income decision making. As a geodetic engineer and a GIS Professional (GISP) she leads a team that also supports daily activities of ACS programs, units and divisions. A graduate of Georgia Institute of Technology, Dr. Sahar is affiliated with the Center for GIS and serves as adjunct faculty in GA-Tech, teaching a graduate Remote Sensing class.

10-minute break



Place&Health2019

Hosted by the Geography & Geospatial Science Working Group (GeoSWG)

AWARDS CEREMONY**

4:40 - 5:00 pm

GCC, Auditorium A

Moderator: Becky Maholland, MS, Vice Chair, GeoSWG

GeoSWG Excellence in Science Award

This award is given for the outstanding use of geospatial tools, techniques, and applications of spatial analytic methods in public health research at CDC. The award is for a peer-reviewed manuscript published between October 1, 2017 and September 30, 2019.

Poster Session Awards

Posters displayed in the Poster Gallery will be judged in the following categories – (1) Best Analysis, (2) Best Cartographic Design, (3) Most Original, and (4) People's Choice. *See the next page for poster session details.*



2019 Place & Health Conference: Poster Gallery

Poster Gallery Contest: Posters displayed in the Poster Gallery will be judged in the following categories – (1) Best Analysis, (2) Best Cartographic Design, (3) Most Original, and (4) People's Choice

Using geospatial analysis to evaluate access to high-quality lung cancer screening in the US

V. Lisa Douangchai Wills, Liora Sahar, Ka Kit (Antonio) Liu, Robert Smith
American Cancer Society

Exploration of Social Vulnerability and Disaster Proneness

Erica Adams Lehnert
ATSDR/DTHHS/GRASP

Million Hearts® Barbershop Intervention Maps: Philadelphia, Albany, Rochester

Hilary Wall (1), Michele Casper (1), Sharon Murphy (2) Lauren Owens (1), Haley Stolp (1), Amir Mirsajedin (1)
(1) CDC
(2) Georgia Tech

Bayesian Spatial Analysis of County-Level Opioid Mortality Rates in Virginia

Jong Hyung Lee, Derek Chapman
Division of Epidemiology, Department of Family Medicine and Population Health, Virginia Commonwealth University

The geographic disparity of disabilities by county, United States, 2017

Hua Lu (1), Yong Liu (1), Yan Wang (1), Xingyou Zhang (2), Qing Zhang (3), Kurt Greenlund (1)
(1) Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health, Epidemiology and Surveillance Branch
(2) U.S. Department of Agriculture, Economic Research Service
(3) Centers for Disease Control and Prevention, National Center on Birth Defects & Developmental Disabilities, Division of Human Development and Disability, Disability and Health Branch

Delineating Rural Areas in the United States

Randy K. Randolph, Sharita R. Thomas, Kristie W. Thompson, G. Mark Holmes
NC Rural Health Research Program, Cecil G. Sheps Center for Health Services Research, The University of North Carolina at Chapel Hill

Failure of patients to recognize importance adds to oral health gap

Ruppige Rupasinghe (1), Catherine S. Barnes, PhD (2), Smriti Khare (1), David C. Ziemer (2)
(1) Georgia State University
(2) Emory University

Using High Resolution Satellite Imagery & GIS Technology to Strengthen Microplans

Brian Kaplan (1), Guy Maurice (2), Adam McKay (2), Daniel Obare (2), Carolyn Sein (2), Ravi Shankar (2)
(1) ATSDR/DTHHS/GRASP
(2) World Health Organization

Hispanic Settlement Patterns and Breast and Colorectal Cancer Mortality

Elaine Hallisey (1), Marissa Grossman (1), Barry Flanagan (1), Kevin Matthews (2), Lucy A. Peipins (3), Zahava Berkowitz (3), Juan L. Rodriguez (3)
(1) Geospatial Research, Analysis, and Services Program, Agency for Toxic Substances and Disease Registry
(2) Division of Population Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention
(3) Division of Cancer Prevention and Control, Centers for Disease Control and Prevention

Geospatial analysis on the effects on the population and public health resources during a simulated improvised nuclear detonation in New York City - The Gotham Shield Exercise

Luis Lowe (1), Bob Neurath (2), Stephanie Dopson (1)
(1) Center for Preparedness and Response, Division of State and Local Readiness
(2) Center for Preparedness and Response, Division of Emergency Operations

Widespread Recent Increases in County-Level Coronary Heart Disease and Heart Failure Death Rates

Adam S. Vaughan, Mary G. George, Sandra L. Jackson, Linda Schieb, Michele Casper
Division for Heart Disease and Stroke Prevention, Centers for Disease Control and Prevention, Atlanta, GA

Continued on next page>>



Geocoding: Standards for the Environmental Public Health Tracking Program

Craig Kassinger

Environmental Public Health Tracking Program/Division of Environmental Health Science & Practice/Centers for Disease Control & Prevention

Energy Security and Older Americans; the Impact of Environmental Water Stress

Sharon Murphy

Georgia Institute of Technology, Strategic Energy Institute

Dairy Cattle Inventory and PFAS at Industrial Sites, Military Facilities, and Community Water Systems

William M. Hartnett

Geospatial Research, Analysis, and Services Program, ATSDR

Understanding environmental burden where you are: An interactive poster of ATSDR's Environmental Burden Index (EBI) on ArcGIS Online

Kelly Fletcher, Brian Lewis, Erica Adams Lehnert

Geospatial Research, Analysis, and Services Program (GRASP), Agency for Toxic Substances Disease Registry (ATSDR)

The Rate Stabilizing Tool: A practical means of generating and mapping stable small area estimates

Joshua Tootoo (1), Harrison Quick (2), Ruiyang Li (1), Adam Vaughan

(3), Linda Schieb (3), Michele Casper (3), Marie Lynn Miranda (1)

(1) Children's Environmental Health Initiative, Rice University

(2) Department of Epidemiology and Biostatistics, Drexel University

(3) Division for Heart Disease and Stroke Prevention, CDC

Multidimensional visualization of the spread of hepatitis A virus in the current multi-state outbreak, 2016-2019

Zoya Dimitrova, Vincent Caruso, Guo-liang Xia, Yuri Khudyakov

CDC/NCHHSTP/DVH

Modeling Riverine Inundation by Day in Harris County, Texas Before, During, and After Hurricane Harvey

Andrew S. Berens (1), Tess Palmer (1), Nina D. Dutton, (1), Amy

Lavery (1), Mark Moore (2)

(1) Geospatial Research, Analysis, and Services Program (GRASP),

Agency for Toxic Substances and Disease Registry, Centers for

Disease Control and Prevention

(2) Harris County Flood Control District, Houston, TX

Geospatial analysis of pharmacy functionality during the 2018 Hurricane Florence disaster

Danielle Sharpe (1), Julie A. Clennon (2)

(1) National Center for Environmental Health/Agency for Toxic Substances and Disease Registry, Division of Toxicology and Human Health Studies, Geospatial Research, Analysis, and Services Program

(2) Department of Biostatistics and Bioinformatics, Rollins School of Public Health, Emory University

Demystifying Cancer Data: The U.S. Cancer Statistics Data Visualizations Tool

Simple Singh (1), Virginia Senkomago (1), Mary Elizabeth O'Neil (1), Anil Kolli (1), Reda Wilson (1), Trevor D. Thompson (1), S. Jane Henley (1), Melissa A. Jim (1), Jessica B. King (1), Loria Pollack (1), Manxia Wu (1), Vicki Benard (1), Lisa Richardson (1), USCS Data Visualization GRASP Team (2)

(1) Division of Cancer Prevention and Control, Centers for Disease Control and Prevention

(2) Geospatial Research, Analysis, and Services Program (GRASP), Agency for Toxic Substances and Disease Registry (ATSDR)