

USING NASA REMOTELY SENSED DATA TO HELP CHARACTERIZE ENVIRONMENTAL RISK FACTORS FOR NATIONAL PUBLIC HEALTH APPLICATIONS

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Keywords: environment, atmosphere, land, pollution, weather

Conference: The 2011 Urban and Regional Information Systems (URISA) GIS in Public Health Conference, June 27-30, 2011, Atlanta, GA, USA.

Abstract:

NASA Marshall Space Flight Center is collaborating with the University of Alabama at Birmingham (UAB) School of Public Health and the Centers for Disease Control and Prevention (CDC) National Center for Public Health Informatics to address issues of environmental health and enhance public health decision making by utilizing NASA remotely sensed data and products. The objectives of this study are to develop high-quality spatial data sets of environmental variables, link these with public health data from a national cohort study, and deliver the linked data sets and associated analyses to local, state and federal end-user groups. Three daily environmental data sets will be developed for the conterminous U.S. on different spatial resolutions for the period 2003-2008: (1) spatial surfaces of estimated fine particulate matter (PM_{2.5}) exposures on a 10-km grid utilizing the US Environmental Protection Agency (EPA) ground observations and NASA's MODerate-resolution Imaging Spectroradiometer (MODIS) data; (2) a 1-km grid of Land Surface Temperature (LST) using MODIS data; and (3) a 12-km grid of daily Solar Insolation (SI) using the North American Land Data Assimilation System (NLDAS) forcing data. These environmental data sets will be linked with public health data from the UAB REasons for Geographic And Racial Differences in Stroke (REGARDS) national cohort study to determine whether exposures to these environmental risk factors are related to cognitive decline and other health outcomes. These environmental datasets and public health linkage analyses will be disseminated to end-users for decision making through the CDC Wide-ranging Online Data for Epidemiologic Research (WONDER) system.