

## PUBLIC HEALTH GIS NEWS AND INFORMATION

May 2005 (No. 64)

*Dedicated to CDC GIS Scientific Excellence and Advancement in  
Disease, Injury and Disability Control and Prevention, and Biologic, Chemical and Occupational Safety*

**Selected Contents:** Events Calendar (pp.1-2); (pp.6-7); Public Health and GIS Literature 14); Website(s) of Interest (pp. 14-17); Final



News from GIS Users (pp.2-6); GIS Outreach (pp.7-11); DHHS and Federal Update (pp.11-14); Thoughts (pp.17-19); **MAP** Appendix (20-21)

### I. Public Health GIS (and related) Events: SPECIAL NCHS/CDC GIS LECTURES

Please join us **June 28, 2005, at 2:00PM (EST), RM 1407, at NCHS! “Housing and Urban Development Activities: A Public Health Perspective”** by Jonathan Sperling, Ph.D., U.S. Department of Housing and Urban Development. The NCHS GIS Guest Lecture Series has been presented continuously at NCHS since 1988. Please note our regular time of **2:00PM** for this presentation. As with all live lectures, Envision (live interactive) will be available to offsite CDC locations as well as IPTV. Web access will be available to our national and worldwide public health audience; please request URL for viewing, anytime between now and June 27, 2005, from the Editor. The cosponsors to the NCHS Cartography and GIS Guest Lecture Series include CDC’s Behavioral and Social Science Working Group (BSSWG) and Statistical Advisory Group (SAG). Note: **NCHS Cartography and GIS lectures are open to all.** We look forward to having you join us. [Contact: Editor, *Public Health GIS News and Information* at [cmc2@cdc.gov](mailto:cmc2@cdc.gov)]

[Note: Calendar events are posted as received; for a more complete listing see NCHS GIS website and calendar]

#### 2005

- \* 2005 National Disaster Medical System (NDMS) Conference: “Catastrophic Care for the Nation,” April 30-May 4, 2005, Orlando FL [See 2005 NDMS website at: <http://www.ndms.chepinc.org/index.html>]
- \* “Prevention of Cardiovascular Disease and Diabetes among American Indians and Alaska Natives 2005,” May 16-19, 2005, Denver CO [See conference website at: <http://www.professionaled.joslin.org>]
- \* 2005 Nebraska GIS Symposium, May 24-26, 2005, Lincoln NE [See: <http://www.gislis.org>]
- \* Pacific Global Health Conference, June 15-17, 2005, Honolulu HI [See: <http://www.hawaiiublichealth.org>]

- \* Open Source Geospatial '05, June 16-18, 2005, Minneapolis MN [See conference website for this event at: <http://mapserver.gis.umn.edu/mum/mtg2005.html>]
- \* Academy Health 2005 Annual Research Meeting (ARM), June 26-28, 2005, Boston MA [See website at: <http://www.academyhealth.org/arm/index.htm>]
- \* 3rd. International Conference on Computing, Communication and Control Technologies: CCCT '05, July 24-27, 2005, Austin, Texas [See event website at: <http://www.iiisconfer.org/ccct05/WebSite/default.asp>]
- \* 4th Annual Conference on Scalable Vector Graphics, August 15-18, 2005, Enschede, The Netherlands [See website: <http://www.svgopen.org/2005>]
- \* 13th International Conference on Geoinformatics: "Coping with Disasters across Continents," August 17-19, 2005, Toronto Canada [See conference website at: <http://www.ryerson.ca/geoinformatics2005>]
- \* 4th ISPRS Workshop on Dynamic and Multi-dimensional GIS, September 5-8, 2005, Wales UK [See: <http://www.comp.glam.ac.uk/GIS/DMGIS05>]
- \* 13th Annual Public Health Distance Learning Summit, September 21-23, 2005, Atlanta GA [See summit website at: <http://www.phppo.cdc.gov/phtn/default.asp>]
- \* 4th International Conference on Urban Health: “Achieving Social Justice in Urban Communities,” October 26-28, 2005, Toronto Ontario [See ISUH website at: <http://www.isuh.org>]
- \* 28th Annual Applied Geography Conference, November 2-5, 2005, Washington DC [See conference site: <http://www.appliedgeog.org/html/main.htm>]

## PUBLIC HEALTH GIS NEWS AND INFORMATION

May 2005 (No. 64)--11<sup>th</sup> year of continuous reporting

2

\* 11th Annual Maternal and Child Health Epidemiology Conference, December 7-9, 2005, Miami FL [See website: <http://www.cdc.gov/reproductivehealth/index.htm>]

2006

1st International Symposium on Environment, Behaviour and Society: "People in Place in People," February 9-11, 2006, Sydney, Australia [See symposium website at URL: <http://www.arch.usyd.edu.au/web/research/ebs/ebsymposium.html>]

## II. GIS News

[Public Health GIS Users are encouraged to communicate directly with colleagues referenced below on any items; note that the use of trade names and commercial sources that may appear in *Public Health GIS News and Information* is for identification only and does not imply endorsement by CDC]

### A. General News and Training Opportunities

1. **Introduction to CrimeStat III.** The annual ICPSR (Inter-University Consortium of Political and Social Research) Summer Program in Quantitative Methods is a comprehensive, integrated program of studies in research design, statistics, data analysis, and social methodology. This year's program includes a workshop organized by the National Archive of Criminal Justice Data (NACJD) and the Mapping & Analysis for Public Safety (MAPS) Program of the National Institute of Justice, and will take place at the University of Michigan, Ann Arbor on June 20-22, 2005.

This course introduces participants to the basics of CrimeStat 3.0, a full-featured Windows-based spatial statistics program that provides statistical tools to aid law enforcement agencies and criminal justice researchers in their crime mapping efforts. This program produces output for use with geographic information systems (GIS) and can be linked with the crime mapping efforts of police departments. The course will cover computing spatial dimensions, distance measures, and several hot spot methods including fuzzy mode, nearest neighbor, risk-adjusted nearest neighbor, K-means clustering and kernel smoothing interpolation. [See ICPSR website details at <http://www.icpsr.umich.edu/training/summer/index.html>]

2. The first annual Human-Computer Interaction (HCI) Summer Institute, "**Perspectives in Emergency Crisis Management**" will be held July 11-14, 2005, at the Penn State University Park Campus, State College, Pennsylvania. Sponsored by the Penn State Center for Human-Computer Interaction and the School of Information Sciences and Technology, the institute offers an intimate environment wherein participants can:

Discover issues in emergency crisis management; Study real-world contexts of emergency crisis management; Envision designs and technologies to enhance emergency crisis management; and Explore socio-cognitive and psychological models to enhance understanding of emergency crisis management. [See announcement at <http://si.ist.psu.edu/events/hciinstitute>; Contact: Julie Coughlin at [jcoughlin@ist.psu.edu](mailto:jcoughlin@ist.psu.edu)]

3. **An Introduction to Spatial Data Analysis with GeoDa**, Luc Anselin, University of Illinois, Urbana-Champaign, July 25-27, 2005 and repeated August 8-10, 2005. This workshop is an introduction, no background in GIS or spatial statistics is required. It will be held in the College of Liberal Arts and Sciences at the University of Illinois, Urbana-Champaign. Each workshop spans three days. Lectures and demonstrations will be given in the mornings and hands on laboratory work will be carried out in the afternoons. Each participant will receive a CD containing the latest version of GeoDa [see <https://geoda.uiuc.edu/default.php>], a tutorial, sample data sets and other supporting materials.

The agenda includes: Day 1. Overview of GeoDa functionality, Geovisualization, mapping and exploratory data analysis; Day 2. Mapping and smoothing of rates (e.g., disease, crime), spatial autocorrelation basics; and Day 3. Extensions of spatial autocorrelation (local and global, bivariate), spatial regression basics. [See announcement at site <https://geoda.uiuc.edu/workshops.php>; Contact: Julia Koschinsky at [koschins@uiuc.edu](mailto:koschins@uiuc.edu)]

4. CDC and Emory University's Rollins School of Public Health will cosponsor a course, "**International Course in Applied Epidemiology**" during September 26-October 21, 2005, in Atlanta, GA. This course is directed at public health professionals from countries other than the United States and will include presentations and discussions of epidemiologic principles, basic statistical analysis, public health surveillance, field investigations, surveys and sampling, and discussions of the epidemiologic aspects of current major public health problems in global health. Computer training using Epi Info (Windows<sup>®</sup> version), a software program developed at CDC and the World Health Organization for epidemiologists, is included. Early registration deadline is June 1; late registration deadline is September 1. There is a tuition charge. [Additional information and applications are available from Emory University's Rollins School of Public

## PUBLIC HEALTH GIS NEWS AND INFORMATION

May 2005 (No. 64)--11<sup>th</sup> year of continuous reporting

3

Health, International Health Dept. (Attn: Pia), 1518 Clifton Road, N.E., Room 746, Atlanta, GA 30322; fax, or by phone at 404-727-4590; or at <http://www.sph.emory.edu/epicourses>; or by email at [pvaleri@sph.emory.edu](mailto:pvaleri@sph.emory.edu)

### **B. Department of Health and Human Services**

<http://www.hhs.gov>

5. HHS Secretary Mike Leavitt announced plans to award 105 new health center grants totaling more than \$63 million. These grants will help an estimated 632,000 Americans, including many without health insurance, obtain comprehensive primary health care services. Launched in 2002, the initiative will add 1,200 new and expanded health center sites and increase the number of people served annually from about 10 million to 16 million by 2006. HHS' Health Resources and Services Administration (HRSA) manages the **Consolidated Health Center Program** (see HRSA, this edition).

6. HHS Launches **African American Anti-Obesity Initiative**. HHS Secretary Mike Leavitt recently announced the award of \$1.2 million to improve efforts to reduce obesity among African Americans through a new partnership with national African American organizations. "The obesity epidemic is one of the major health challenges facing our nation, and African American communities are highly affected by this disease and its health consequences.

The initiative we are announcing will mobilize three of the nation's premier academic and civic organizations to join us in a new partnership to mount critical prevention efforts in the African American community: The **National Association for Equal Opportunity in Higher Education** (NAFEO), Silver Spring, Md., the **National Urban League**, New York, N.Y., and the **National Council of Negro Women**, Washington, D.C." Initiatives are planned by these organizations and include prevention, education, public awareness, and outreach activities intended to bring about a greater understanding of the impacts of obesity. [See site: <http://www.hhs.gov/news/press/2005pres/20050411.html>]

### **Administration for Children and Families**

<http://www.acf.dhhs.gov>

7. An estimated 906,000 children across the country were victims of abuse or neglect in 2003 according to national data released April, 2005, by HHS. The statistics indicate that about 12.4 out of every 1,000 children were victims of abuse or neglect, a rate comparable to the previous

year's victimization rate of 12.3 out of 1,000 children. [See the full report, "**Child Maltreatment 2003**," at website <http://www.acf.hhs.gov/programs/cb/publications/cmreports.htm>]

### **Administration on Aging**

<http://www.aoa.gov>

8. **AoA Provides \$3 Million in Additional Hurricane Relief to Alabama and Florida**. Assistant Secretary Josefina Carbonell announced today that two states will receive an additional \$3 million in supplemental hurricane relief funds. The state of Alabama will receive \$500,000 and the state of Florida will receive \$2.5 million which will be used for ongoing assistance to frail elders affected by hurricanes last year. Given the widespread devastation, extensive long-term recovery efforts are needed to help restore safe and livable environments for older persons.

### **Agency for Healthcare Research and Quality**

<http://www.ahrq.gov>

9. A new Web site announced today by HHS' Agency for Healthcare Research and Quality (AHRQ) is a national "one-stop" portal of resources for improving patient safety and preventing medical errors. The site, **AHRQ's Patient Safety Network**, or PSNet, can be found at the following URL: <http://psnet.ahrq.gov>.

### **Centers for Disease Control and Prevention**

[Includes the Agency for Toxic Substances and Disease Registry (ATSDR), in CDC's National Center for Environmental Health]

<http://www.cdc.gov>

10. **Protecting Health For Life: The State Of The CDC, Fiscal Year 2004** (issued February, 2005): America's population is now nearly 300,000,000 and grows by 1 person every 10 seconds (1 Birth every 8 seconds - 1 Death every 13 seconds + 1 International migrant (net) every 24 seconds= Net gain of 1 person every 10 seconds) 6/minute, 360/hour, 8,640/day and 3,153,600/year. America is more diverse, growing older, and on the move: By 2010, nearly one-third of Americans will be people of color: Hispanics, African Americans, Asian Americans and Pacific Islanders, and Native Americans. Hispanic and Asian populations are growing faster than other groups. More than 13% of the population will be older than 65 by 2010, and more than 18% by 2025. Between 2002 and 2003, 40 million people moved. Young adults ages 20-29 relocated the most: 33% moved within that time period. [See full report at:

## PUBLIC HEALTH GIS NEWS AND INFORMATION

May 2005 (No. 64)--11<sup>th</sup> year of continuous reporting

4

[http://www.cdc.gov/od/oc/media/pressrel/ProtectingHealth\\_ForLife\\_04.pdf](http://www.cdc.gov/od/oc/media/pressrel/ProtectingHealth_ForLife_04.pdf)]

**11. 2003 SMART BRFSS Data and Prevalence Tables Now Available.** CDC's Behavioral Surveillance Branch in the Division of Adult and Community Health, National Center for Chronic Disease Prevention and Health Promotion, Coordinating Center for Health Promotion, is pleased to announce the release of the 2003 SMART BRFSS data and prevalence tables. SMART BRFSS (Selected Metropolitan/Micropolitan Area Risk Trends from the Behavioral Risk Factor Surveillance System) began with the analysis of data from the 2002 BRFSS. It now includes data from 2002 and 2003, with prevalence estimates for over 120 metropolitan and micropolitan statistical areas (MMSAs), as well as many counties within those areas. As with the 2002 data, the Web site includes both the data sets and the prevalence tables for MMSAs and counties, as well as pre-set Quick View charts with seven select risk factors in easy to print out PDF format, which compare county, MMSA, and state data. [The SMART BRFSS data and prevalence tables are located at <http://apps.nccd.cdc.gov/brfss-smart/index.asp>]

### Centers for Medicare and Medicaid Services

<http://www.cms.hhs.gov>

12. Although Medicaid has made great strides in enrolling low-income children, significant numbers of children remain uninsured. From 1988 to 1998, the proportion of children insured through Medicaid increased from 15.6% to 19.8%. At the same time, however, **the percentage of children without health insurance increased from 13.1% to 15.4%**. The increase in uninsured children is mostly the result of fewer children being covered by employer-sponsored health insurance.

### Food and Drug Administration

<http://www.fda.gov>

13. FDA regulates **products**, not technology. In addition, FDA regulates only to the "**claims**" made by the product sponsor. Its mission to protect the public health by assuring safe and effective medical products and safe foods for humans and animals includes: Foods- includes interstate domestic and imported, including produce, fish, shellfish, shell eggs, milk (not meat or poultry), bottled water, wine <7% alcohol, and infant formula; Food additives-Colors and food containers; Cosmetics; Dietary supplements; Animal feeds; Pharmaceuticals- Human,

animal and tamper resistant packaging; Medical Devices; Radiation emitting electronic products; Vaccines; Blood products; Tissues; and Sterilants.

### Health Resources and Services Administration

<http://www.hrsa.gov>

14. HRSA manages the Consolidated Health Center Program, which funds a national network of more than 3,600 clinics comprised of community health centers, migrant health centers, health care for the homeless centers and public housing primary care centers. [The list of grant recipients can be found at the following website <http://www.hhs.gov/news/press/2005pres/20050411.html>]

### Indian Health Service

<http://www.ihs.gov>

15. Members of federally recognized Indian tribes and their descendants are eligible for services provided by the Indian Health Service (IHS). The IHS is an agency within the Department of Health and Human Services that operates a comprehensive health service delivery system for approximately **1.6 million of the nation's estimated 2.6 million American Indians and Alaska Natives**. Its annual appropriation is approximately \$3.5 billion. The IHS strives for maximum tribal involvement in meeting the needs of its service population. There are more than **560 federally recognized tribes** in the United States. Their members live mainly on reservations and in rural communities in 35 states, mostly in the western U.S. and Alaska.

### National Institutes of Health

<http://www.nih.gov>

16. **Methodology and Measurement in the Behavioral and Social Sciences.** The behavioral and social sciences offer significant fundamental insights into the comprehensive understanding of human health, including disease etiology and treatment, and the promotion of health and well-being. To encourage the investigation of the impact of social and behavioral factors on health and disease, the participating Institutes and Centers invite qualified researchers to submit research grant applications on methodology and measurement in the behavioral and social sciences. Methodology and measurement encompass research design, data collection techniques, measurement, and data analysis techniques.

The goal of this program announcement is to encourage research that will improve the quality and

scientific power of data collected in the behavioral and social sciences, relevant to the missions of the NIH Institutes and Centers (ICs). Research that addresses methodology and measurement issues in diverse populations, issues in studying sensitive behaviors, issues of ethics in research, issues related to confidential data and the protection of research subjects, and issues in developing interdisciplinary, multimethod, and multilevel approaches to behavioral and social science research is particularly encouraged, as are approaches that integrate behavioral and social science research with biomedical, physical, or computational science research. [See website: <http://grants1.nih.gov/grants/guide/pa-files/PA-05-090.html>]

### **Substance Abuse and Mental Health Services Administration**

<http://www.samhsa.gov>

17. Almost 8.6 million youths ages 12 to 17, over one third of this age group, used alcohol in the past year, data from the Substance Abuse and Mental Health Administration (SAMHSA) show. The data, released today as part of Alcohol Awareness Month, show more than 650,000 youth (2.6 percent) reported heavy alcohol use, and nine million engaged in at least one delinquent behavior in the past year.

The data, highlighted in a new report, “**Alcohol Use and Delinquent Behaviors among Youths,**” extracted from the National Survey on Drug Use and Health, 2003, show that youths who reported heavy alcohol use in the past month were the most likely to have participated in delinquent behavior. Heavy alcohol use is defined as five or more drinks in a single setting at least five times in the past 30 days.

**C. Historically Black Colleges and Universities (HBCUs), Hispanic Association of Colleges and Universities (HACUs), and Other Minority Health News** [A listing of HBCUs and HACUs may be found at the following websites <http://www.smart.net/~pope/hbcu/hbculist.htm> and <https://www.hnlp.net>]

18. **National Black HIV/AIDS Awareness and Information Day** is observed each year on February 7 to call attention to the disproportionate impact of human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) on the black population in the United States. The event is sponsored by a coalition of nongovernmental organizations, with support from CDC (See CDC’s MMWR website for report:

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5404a1.htm>).

During 2000-2003, more than half of new HIV/AIDS diagnoses in 32 states were among blacks, although blacks represented only 13% of the population of those states. In 2003, black men had the highest rate of HIV/AIDS diagnoses of any racial/ethnic population, approximately seven times the rate among white men and twice the rate among black women. Black women are also severely impacted by HIV. During 2000-2003, approximately 69% of women who had HIV/AIDS diagnosed were black. In 2003, the rate of HIV/AIDS was 18 times greater among black women than among non-Hispanic white women.

CDC is working to reduce new HIV infections among blacks by developing interventions tailored to the cultural needs of this population. This combination of behavioral and biomedical approaches includes expanded access to voluntary HIV counseling and testing, behavioral interventions for at-risk and HIV-positive persons, and screening and treatment for sexually transmitted diseases, which can facilitate HIV transmission and acquisition. [More information is available at <http://www.cdc.gov/hiv>]

19. HHS Launches **African American Anti-Obesity Initiative** (see announcement, Section B, this edition). An estimated 129.6 million Americans, or 64 percent, are overweight or obese. Obesity and overweight have been shown to increase the risk of developing serious and often disabling medical conditions. Adult African American women had age-adjusted obesity rates of 48.8 percent, compared to 30.7 percent for adult white women, according to data from the Centers for Disease Control and Prevention (CDC) for the period 1999-2002. African American girls and boys also had higher rates of overweight than white children in the same age groups. In implementing the new projects targeting African Americans, the National Association for Equal Opportunity in Higher Education will work with five of its member institutions to improve health habits among college-age youth: Talladega University (AL); Alcorn State University (MS); Lincoln University (PA); South Carolina State University, Orangeburg; and Wiley College (TX). The National Council of Negro Women will conduct a research-based public education campaign to educate young and mid-life women (ages 35-59) about healthy aging and ways to improve their overall health. The Council will conduct focus groups among women in

## PUBLIC HEALTH GIS NEWS AND INFORMATION

May 2005 (No. 64)--11<sup>th</sup> year of continuous reporting

6

Los Angeles, Washington, D.C., Chicago, New Orleans, and Houston as it develops new consumer education materials.

The National Urban League will pilot-test an Urban Health and Fitness Campaign focused on physical activity, nutrition and prevention of diseases such as diabetes. Working through selected local affiliates, the project aims to develop comprehensive community action plans, influence school-based curricula and health/fitness activities, and provide technical assistance to meet community needs.

### **D. Other Related Agency or GIS News**

20. From the Open Geospatial Consortium Inc. (OGC): has recently begun a "**GML in JPEG Interoperability Experiment**" to test and refine a draft implementation specification that defines how Geography Markup Language is to be used within JPEG 2000 data packages for geographic imagery. This Interoperability Experiment will implement several prototype GMLJP2 codecs (a codec is a data "compressor/decompressor") based on the OGC draft specification, "GML in JPEG 2000 for Geographic Imagery." The purpose is to confirm that the specification will support the requirements of geospatially related imagery over the Internet, and to improve the specification if it does not support these requirements. The participants will perform several individual experiments of increasing complexity and will demonstrate encoding similar to GeoTIFF. [See website at: <http://www.opengeospatial.org>]

21. From Jane Read, Syracuse University: **Geospatial Intelligence Scholarships from the United States Geospatial Intelligence Foundation (USGIF)**. The USGIF will award nine \$5,000 scholarships to recognize promising achievers in a field related to the geospatial intelligence tradecraft. The Foundation plans to grant three scholarships for the following: graduate students, undergraduate students, and graduating high school students who pursue college or university academic programs related to geospatial intelligence. The deadline for scholarship application is July 1, 2005. [See website at: <http://www.usgif.org/events/usp.html>]

### **III. GIS Outreach**

*[Editor: All requests for Public Health GIS User Group assistance are welcomed; readers are encouraged to respond directly to colleagues]*

**Animal Disease Surveillance Programs.** From Beth

Suedmeyer, Tufts School of Veterinary Medicine: I'm writing to ask if members of the CDC Public Health GIS Users Group are aware of states or institutions that have implemented wildlife disease surveillance programs. We are in the process of partnering with the MA State Department of Public Health (DPH), with support of the CDC, to initiate wildlife surveillance for biothreat (BT) detection, considering animals as indicators of emerging infectious disease and BT occurrences.

We would like to link with others who have developed or are establishing such programs as we adopt protocols, data standards, and databases for the project. Additionally, we are interested in knowing about state DPHs that are integrating animal (livestock and/or wildlife) in public health disease surveillance systems. It seems from our experience, that most states rely on agriculture departments to handle the animal surveillance independently and disseminate information on items of concern to public health. We however would like to explore the possibility of an integrated database and GIS system that would be used for long-term surveillance, allowing data to be viewed together and incorporate baseline data so that rates of cases over time can be recognized and a better response system may be enabled.

[Note: The USGS National Wildlife Health Center is developing a catalog of wildlife disease monitoring/surveillance systems around the world, so responses to this inquiry will be passed on to Joshua Dein at the USGS National Wildlife Health Center; Contact: Beth, GIS Research Assistant, Tufts Center for Conservation Medicine, at [Beth.Suedmeyer@tufts.edu](mailto:Beth.Suedmeyer@tufts.edu)]

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**Susan Wernicke**, Crime Analyst, Shawnee Police, KS: On Tuesday, April 12, 2005, we had a hit and run fatality accident in Shawnee. The location of the accident was very wide open, double lane thoroughfare. The victim's vehicle had become disabled and he had abandoned it and was walking along the road when he was struck and killed. We know the date and approximate time and the exact location. We also know the suspect vehicle was red and was likely a pickup truck, SUV or mini-van. What we are asking is, "Is there a way to identify a satellite that would have been overhead at that particular date, time and location where we could obtain photo(s) of the incident occurring so we could get a better suspect vehicle description-and possibly even a license plate state or number?" [Contact: Susan at [swernicke@ci.shawnee.ks.us](mailto:swernicke@ci.shawnee.ks.us)]

Early Response, **Mark Chapin**, President and

CEO, Eagle Associates, LLC: Unfortunately, the type of high-resolution satellite image you're interested in is typically produced only on request, based on specific customer requirements for time of day, specific location/target, season, camera angle, etc. The satellite camera can be pointed at the specific target to take the shot. Unless another customer just happened to have requested that a high-resolution shot be taken on the date, time, and location you're interested in, you're not likely to find anything of use. Many of the other birds that shoot small scale, large area images (e.g. weather) are radar images won't have the detail you need.

You can go online to SpaceImaging, Digital Globe, and other commercial satellite imagery providers and request the specific date, time and location for your use. If they happened to have taken imagery of that place at that particular time, you might get some useful information. You might also check with aerial photography companies in your area/state. They may have taken shots for agriculture, mapping, or realty purposes during the time of interest. That's probably like looking for the needle in the haystack, but might be worth asking. [Contact: Mark at mchapin@eagleasc.com]

**IV. Public Health GIS Presentations and Literature**  
**NCHS/CDC Cartography and GIS Guest Lecture**  
**“Housing and Urban Development Activities: A Public Health Perspective,”** Jonathan Sperling, Ph.D., Manager, Geographic Information Analysis, the U.S. Department of Housing and Urban Development. Join us **June 28, 2005, starting 2:00PM (EST), RM 1407, at NCHS!** Abstract: This presentation will discuss an array of issues and activities at the U.S. Department of Housing and Urban Development (HUD) that intersect with public health concerns and housing-related health disparities. The primary foci will be to present a recent project to build a Southwest Border Colonia Research Database and the spatial and statistical methodologies used to create boundary files and allocate census data for colonias along the U.S. Mexico Border. The term "colonia" is often used to designate a community located near the U.S.-Mexico border that lacks adequate infrastructure and is characterized by substandard housing and high rates of poverty. Colonias are non-standard geographies that do not generally align with census geography or statistics and are often represented and defined differently across programs and agencies. In

order to effectively meet the housing and community development needs of the colonias, an accurate assessment of the social and economic conditions in these communities is necessary.

Objectives of this work by HUD's Office of Policy Development & Research included developing spatial/statistical models for allocating data to non-standard geographies and building a cross-agency, web-accessible research database on colonia settlements. Complementing, and building upon, work already done by State agencies for Texas colonias, this work offers a unique opportunity to better understand conditions in the colonias along the U.S. Mexico Border and a means to facilitate more robust multi-agency participation in planning and policy making in this region to improve living and health conditions. On a more general level, this work offers opportunities for more accurate allocation of census data to other non-standard geographies.

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**CDC's *Emerging Infectious Diseases, MMWR and Preventing Chronic Disease***

**(1) *Emerging Infectious Diseases***

*Emerging Infectious Diseases* (EID) is indexed in Index Medicus/Medline, Current Contents, Exerpta Medica, and other databases. EID is part of CDC's plan for combating emerging infectious diseases; one of the main goals of CDC's plan is to enhance communication of public health information about emerging diseases so that prevention measures can be implemented without delay. The May 2005 11(5) edition of EID is now online. This edition includes articles on Dengue and Dengue Hemorrhagic Fever, and other emerging infectious diseases. [See: <http://www.cdc.gov/ncidod/EID/index.htm>]

**(2) *Morbidity and Mortality Weekly Report***

*Selected* articles from CDC's *Morbidity and Mortality Weekly Report* (MMWR): [Readers may subscribe to MMWR and other CDC reports, without cost, at site <http://www.cdc.gov/subscribe.html> as well as access the MMWR online at website <http://www.cdc.gov/mmwr>]. Note: Efforts are made to include themes which may lend themselves to spatial distribution.] Vol. **54(16)**- Silicosis Mortality, Prevention, and Control, United States, 1968-2002; QuickStats: Percentage of Children Aged <18 Years Who Have Ever Had Asthma Diagnosed, by Age Group, United States, 2003; Vol. **54(15)**- Homicide and Suicide Rates: National Violent Death Reporting System, Six States, 2003; Africa Malaria Day; Vol. **54**, No. **RR-6**:

**National Plan for Reliable Tuberculosis Laboratory Services Using a Systems Approach.** Approximately one third of the world's population is infected with *Mycobacterium tuberculosis* and despite an overall decline in tuberculosis (TB) cases in the United States, TB continues to pose substantial social, public health, and economic costs. In 2003, approximately 15,000 new cases of TB were reported in the United States, and an estimated 9-14 million persons have latent TB infection with attendant risk of future disease; Vol. **54** (Early Release) **Achievements in Public Health: Elimination of Rubella and Congenital Rubella Syndrome, United States, 1969-2004:** In 2004, an independent health panel determined that rubella (also known as German measles) and congenital rubella syndrome are no longer endemic in the United States. [This decision crowned a hugely successful 35-year effort to combat rubella through widespread vaccination.](#) During the 1962-1965 rubella epidemic, an estimated 12.5 million cases of rubella in the United States resulted in 13,000 fetal and neonatal deaths; 20,000 infants were born with birth defects. In 2004, a total of nine cases of rubella were reported in the United States; in 2003, the number was seven. The history and accomplishments of the rubella vaccination program are summarized in this special Achievements in Public Health report; Vol. **54(11)**- Introduction to Public Health Surveillance Course- CDC and Emory University's Rollins School of Public Health will cosponsor a course, "**Introduction to Public Health Surveillance**", during May 9-13, 2005, in Atlanta GA. The course is designed for state and local public health professionals. The course will provide practicing public health professionals with the theoretical and practical tools necessary to design, implement, and evaluate effective surveillance programs. Topics include overview and history of surveillance systems; planning considerations; sources and collection of data; analysis, interpretation, and communication of data; surveillance systems technology; ethics and legalities; state and local concerns; and future considerations. There is a tuition charge. [Inquiries may be made at: (404) 727-3485]; Vol **54-RR3**- Compendium of Animal Rabies Prevention and Control, 2005, National Association of State Public Health Veterinarians, Inc. (NASPHV); Vol. **54(10)**- Trends in Tuberculosis: United States, 2004; Vol. **54(9)**-

**Surgeon General's Advisory on Alcohol Use in Pregnancy; Ground Water Awareness Week, March 13-19, 2005.** Excerpts: An estimated [15% of the population \(43.5 million persons\) rely on private ground-water wells as their primary source of water.](#) Unlike community water systems, private water wells are not regulated by EPA, and the quality of the water source for many of these wells has not been assessed. Ground-water quality can be affected by local land uses, geologic factors, and characteristics of the aquifer from which water is extracted. Possible contaminants can include manufactured contaminants (e.g., pesticides, fertilizers, and industrial chemicals), natural contaminants (e.g., arsenic, fluoride, and radionuclides) and pathogens (e.g., coliform bacteria and viruses). [See additional information about Ground Water Awareness Week, well maintenance, and water testing at <http://www.ngwa.org/education/aware.html>]; Vol. **54(4)**- Pregnancy, Birth, and Abortion Rates for Teenagers Aged 15-17 Years: United States, 1976-2003.

### (3) *Preventing Chronic Disease*

The April 2005 2(2) issue of *Preventing Chronic Disease* (PCD) is online and contains selected abstracts on health disparities from CDC's 19<sup>th</sup> National Conference on Chronic Disease Prevention and Control and other chronic disease and prevention topics [See PCD site at: <http://www.cdc.gov/pcd/issues/2005/jan/toc.htm>]

### *Titles*

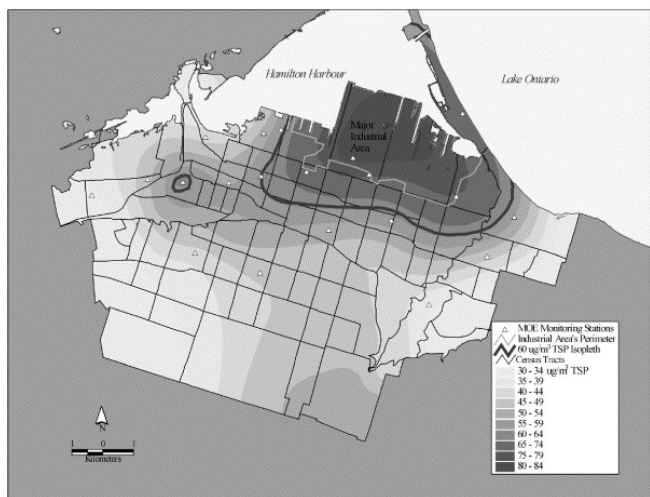
**On organizing and accessing geospatial and georeferenced Web resources using the G-Portal system**, Lim E-P, Liu Z, Yin M, Goh DH-L, Theng Y-L, and Ng WK, *Info Proc Man* 41(5) SEP 2005;

**Modelling a regional reorganization of cardiovascular surgery provision**, Quesnel-Barbet A, Nuttens MC, Aublet-Cuvellier B, Warembourg H, Prat A, Thumerelle PJ and Beuscart R, *Health & Place* 11(3) SEP 2005;

**Location based services-new challenges for planning and public administration?**, Ahas R and Mark U, *Futures* 37(6) AUG 2005;



**Particulate air pollution, social confounders, and mortality in small areas of an industrial city,** Jerrett M, Buzzelli M, Burnett RT and DeLuca PF, *Soc Sci Med*



60(12) JUN 2005 [Map: TSP pollution surface 1985–1994 in Hamilton, Canada];

**Zone design for environment and health studies using pre-aggregated data,** Cockings S and Martin D, *Soc Sci Med* 60(12) JUN 2005;

**Complexity theory and geographies of health: a critical assessment,** Gatrell AC, *Soc Sci Med* 60(12) JUN 2005;

**‘Burning Issues’: an introduction to selected papers from the 10th International Symposium in Medical Geography, Manchester 2003,** Smyth F and Thomas R, *Soc Sci Med* 60(12) JUN 2005;

**Hierarchical Bayesian collective risk model: an application to health insurance,** Migon HS and Moura FAS, *Insur: Math Econ* (36)2 APR 2005;

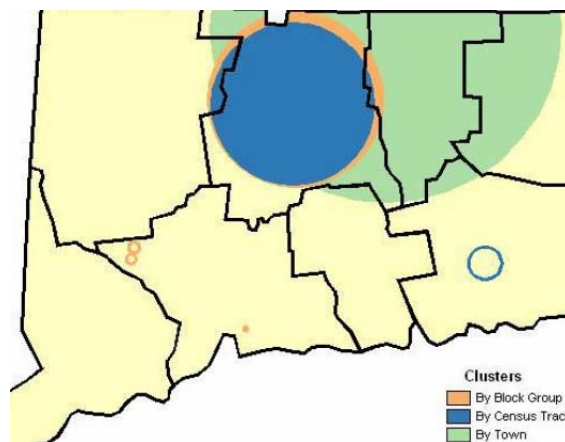
**Neighborhood Racial Composition, Neighborhood Poverty, and the Spatial Accessibility of Supermarkets in Metropolitan Detroit,** Zenk SN, Schulz AJ, Israel BA, James SA, Bao S and Wilson ML, *Am J Public Health* 95(4)660-667 APR 2005;

**Immigration and geographic access to prenatal clinics in Brooklyn, NY: A geographic information systems analysis,** McLafferty S, Grady S, *Am J Public Health* 95

(4): 638-640 APR 2005;

**A review and evaluation of intraurban air pollution exposure models,** Jerrett M, Arain A, Kanaroglou P, Beckerman B, Potoglou D, Sahsuvaroglu T, Morrison J, Giovis, *J Expo Anal Env Epid* 15 (2): 185-204 MAR 2005;

**Lumping or splitting: seeking the preferred areal unit for health geography studies,** Gregorio DI, DeChello LM, Samociuk H and Kulldorff M, *Int J Health Geogr* 2005 4:6 MAR 2005;



**Using GIS-based approaches to support research on neurotoxicants and other children's environmental health threats,** Miranda ML, Dolinoy DC, *Neurotox* 26 (2): 223-228 MAR 2005;

**Scale and shape issues in focused cluster power for count data,** Puett RC, Lawson AB, Clark AB, Aldrich TE, Porter DE, Feigley CE and Hebert JR, *Int J Health Geogr* 4(8) MAR 2005;

**Enabling collaborative geoinformation access and decision-making through a natural, multimodal interface,** MacEachren AM, Cai G, Sharma R, Rauschert I, Brewer I, Bolelli L, Shaparenko B, Fuhrmann S, Wang H, *Inr J Geogr Inf Sci* 19 (3): 293-317 MAR 2005;

**Case-control clustering for residential histories,** Jacquez GM, Kaufmann A, Meliker J, Goovaerts P, AvRuskin G, Nriagu J, *EnvirHealth: A Global Access Science Source* 4(4) 2005;

**Geographic information system analysis of blastomycosis in northern Wisconsin, USA: waterways and soil**, Baumgardner DJ, Steber D, Glazier R, Paretsky DP, Egan G, Baumgardner AM, Prigge D, *Med Mycol* 43 (2): 117-125 MAR 2005;

**Painting a Truer Picture of US Socioeconomic and Racial/Ethnic Health Inequalities: The Public Health Disparities Geocoding Project**, Krieger N, Chen JT, Waterman PD, Rehkopf DH and Subramanian SV, *Am J Public Health* 95(2): 312-323 FEB 2005;

**Racial disparities in context: a multilevel analysis of neighborhood variations in poverty and excess mortality among black populations in Massachusetts**, Subramanian SV, Chen JT, Rehkopf DH, Waterman PD, Krieger N, *Am J Public Health* 95(2):260-5 FEB 2005;

**Using public health data systems to understand and eliminate cancer disparities**, Koh HK, Judge CM, Ferrer B, Gershman ST, *Cancer Cause Control* 16 (1): 15-26 FEB 2005;

**Examining localized patterns of air quality perception in Texas: A spatial and statistical analysis**, Brody SD, Peck BM, Highfield WE, *Risk Anal* 24 (6): 1561-1574 DEC 2004;

**Analytical framework for prioritizing bicycle and pedestrian investments-New Jersey's statewide master plan update, phase 2**, Swords AR, Goldman LM, Feldman W, Ehrlich TF, Bird WJ, *Transport Res Rec* (1878): 27-35 2004;

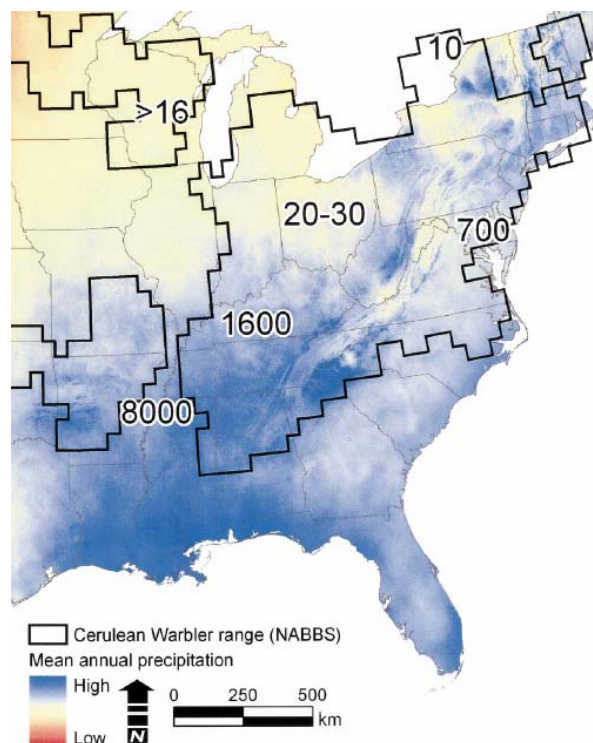
**Mapping pathways to services: Description of local service systems for American Indian and Alaska Native children by Circles of Care**, Allen J, LeMaster PL, Deters PB, *Am Indian Alaska Nat* 11 (2): 65-87 2004;

**Promoting transparency of long-term environmental decisions: The Hanford decision mapping system pilot project**, Drew CH, Nyerges TL, Leschine TM, *Risk Anal* 24 (6): 1641-1664 DEC 2004;

**Using GIS technology to identify areas of tuberculosis transmission and incidence**, Moonan PK, Bayona M,

Quitugua TN, Oppong J, Dunbar D, Jost KC, Burgess G, Singh KP, Weis SE, *Int J Health Geogr* 3(23) OCT 2004;

**A Hierarchical Spatial Model of Avian Abundance with Application to Cerulean Warblers**, Thogmartin WE, Sauer JR, and Knutson MG, *Ecol App* 14(6) DEC



2004;

**Using geographic information systems to evaluate siting and networks of hydrogen stations**, Nicholas MA, Handy SL, Sperling D, *Transport Res Rec* (1880): 126-134 2004;

**Current practices in the spatial analysis of cancer: flies in the ointment**, Jacquez GM, *Int J Health Geogr* 3(22) OCT 2004;

**Geographic methods for understanding and responding to disparities in mammography use in Toronto, Canada**, Glazier RH, Creatore MI, Gozdyra P, Matheson FI, Steele LS, Boyle E, Moineddin R, *J Gen Intern Med*;19(9):952-61 SEP 2004;

**An empirical study of the school zone anti-drug law in three cities in Massachusetts**, Brownsberger WN,

## PUBLIC HEALTH GIS NEWS AND INFORMATION

May 2005 (No. 64)--11<sup>th</sup> year of continuous reporting

11

Aromaa SE, Brownsberger CN, Brownsberger SC  
*J Drug Iss* 34 (4): 933-949 FALL 2004;

**Spacial modeling of cutaneous Leishmaniasis risk zones**, Aparicio C, Bitencourt MD, *Rev Saude Pub* 38 (4): 511-516 AUG 2004;

**Defining Core Gonorrhea Transmission Utilizing Spatial Data**, Bernstein KT, Curriero FC, Jennings JM, Olthoff G, Erbelding EJ and Zenilman J, *Am J Epi*.; 160: 51 - 58 JUL 2004;

**Cancer incidence in municipalities near two former nuclear materials processing facilities in Pennsylvania**, Boice JD Jr, Bisbee WL, Mumma MT, Blot WJ, *Health Phys* 85(6):678-90 DEC 2003.

### *New Report*

**Using GIS to Assess and Direct Childhood Lead Poisoning Prevention: Guidance for State and Local Childhood Lead Poisoning Prevention Programs.** [See: <http://www.cdc.gov/nceh/lead/lead.htm>]. Developed by the Childhood Lead Poisoning Prevention Program Geographic Information System Workgroup, Centers for Disease Control and Prevention, December 2004. These guidelines were prepared to help new lead epidemiologists quickly learn how to use geographic information systems (GIS) mapping technology to assess and direct childhood lead poisoning elimination efforts. Eliminating elevated blood lead levels (BLLs) >10 micrograms per deciliter ( $\mu\text{g}/\text{dL}$ ) or higher among young children is a Healthy People 2010 goal. The Centers for Disease Control and Prevention (CDC) Lead Poisoning Prevention Branch (LPPB) is committed to attaining that goal. The adverse health effects of lead and the sources of lead are well documented. Lead-based house paint and the dust and soil it contaminates are the most common high dose sources of lead exposure for young children in the United States today.

The challenge for public health practitioners and policy makers is to prevent childhood lead poisoning, not just react to it. GIS technology is a powerful tool that can be used to effectively target lead poisoning preventive interventions. The addresses of old housing units can be geocoded (geographically located) to identify areas where children at risk for lead poisoning live. Interventions can then be directed to those areas and

specific properties to address lead hazards.

These guidelines will focus on mapping applications, although GIS also can be used for statistical modeling to predict risk for lead exposure. Examples are provided of how GIS mapping technology can use blood lead screening, tax assessor (property), and U.S. census data to develop and improve preventive interventions, especially primary prevention (before children are poisoned). [Contact: Lead Author Jerry Curtis, BA, GISP, Centers for Disease Control and Prevention, at [JCurtis1@cdc.gov](mailto:JCurtis1@cdc.gov)]

### **V. Related Census, HHS, FGDC and Other Federal/State Developments Maps in American FactFinder**

**American FactFinder (AFF)** is an online source for population, housing, economic and geographic data that presents the results from four key data programs-**Decennial Census of Housing and Population-1990 and 2000** (Coverage): Most geographic areas, e.g., metropolitan area, state, county, city town, place, ZIP Code, down to census tract for most data, and down to block or block group for some data. Topics: Population, race, ancestry, income, disability, education, employment, language, marital status, occupation, poverty status, housing characteristics and more; **Economic Census 1997 and 2002** (Coverage): U.S., metropolitan area, state, county, place, ZIP Code Topics: Industry, establishments, sales, receipts, revenues, shipments, expenses, products, payroll, employees and more; **American Community Survey-1996-2003** (Coverage): States, and 800 local areas, including 239 counties, 205 congressional districts, and most metropolitan areas of 250,000 population and over. Topics: Population, race, ancestry, income, disability, education, employment, language, marital status, occupation, poverty, housing characteristics and more. **Population Estimates Program - July 1, 2003 to July 1, 2004** (Coverage): State, metropolitan area, county, city and town Topics: Estimated total population for the previous year for geographic areas above; estimates by age, sex, and race/ethnicity are available for selected geographic areas.

Results from each of these data programs are provided in the form of data sets, tables, thematic maps, and reference maps. Key functions provided in AFF include: On-line reference mapping, On-line thematic mapping of selected characteristics, Search by address

## PUBLIC HEALTH GIS NEWS AND INFORMATION

May 2005 (No. 64)--11<sup>th</sup> year of continuous reporting

12

capability for Census 2000 data sets, Search by address for locating census tract, block group and block numbers for Census 2000, Both keyword and geographic searching capability that pinpoints individual tables, maps and other products, e.g., CD-ROMs, FTP files, and publications, and other user functions.

**Reference Maps-** A tool to view the boundaries



of census geographies, such as counties, cities and towns, urban areas, congressional districts, census tracts, census blocks, and more. **Thematic Maps-** A tool to view geographic patterns in census data. Thematic Maps are available for Census 2000, the 1990 Census, the Economic Census, and the Population Estimates program. Geography:

This diagram shows the many geographic types for which data are available from the U.S. Census Bureau. With connecting lines, the diagram shows the hierarchical relationships between geographic types. For example, a line extends from states to counties because a state is comprised of many counties, and a single county can never cross a state boundary.

If no line joins two geographic types, then an absolute and predictable relationship does not exist between them. For example, many places are confined to one county. However, some places extend over more than one county, such as New York City. Therefore, an absolute hierarchical relationship does not exist between counties and places, and any tabulation involving both these geographic types may represent only a part of one county or one place.

Notice that many lines radiate from blocks,

indicating that most geographic types can be described as a collection of blocks, the smallest geographic unit for which the Census Bureau reports data. However, only two of these lines also describe the path by which a block is uniquely named. That is, the path through the Block Group or through the Tribal Block Group. [See: <http://www.census.gov/Press-Release/www/2001/sumfile1.html>]

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### **Federal Geographic Data Committee (FGDC)**

[The Federal Geographic Data Committee (FGDC) is an interagency committee, organized in 1990 under OMB Circular A-16, which promotes the coordinated use, sharing, and dissemination of geospatial data on a national basis. The FGDC is composed of representatives from seventeen Cabinet level and independent federal agencies. The FGDC coordinates the development of the National Spatial Data Infrastructure (NSDI). The NSDI encompasses policies, standards, and procedures for organizations to cooperatively produce and share geographic data. The 19 federal agencies that make up the FGDC, including HHS, are developing the NSDI in cooperation with organizations from state, local and tribal governments, the academic community, and the private sector. See <http://www.fgdc.gov>]

### **NSDI Future Directions:**

#### **First Quarter 2005 Report Executive Summary**

**Background.** The Future Directions Initiative [of the Federal Geographic Data Committee or FGDC] is crafting a national geospatial strategy and implementation plan to further the development of the **National Spatial Data Infrastructure** [NSDI]. Drawing on the collective insights and contributions of the geospatial community at-large, these Future Directions efforts are targeting three focus areas each with supporting strategic objectives. To address the strategic objectives, Action Teams were established using a phased-in approach.

In August 2004, Chip Groat, Director USGS established the **National Geospatial Program Office** (NGPO). This new office consolidates the operations of the **Federal Geographic Data Committee Secretariat**, **The National Map**, and the **Geospatial One Stop Project**. The work of the Future Directions Initiative is being used to inform the activities that are guiding the establishment and priorities of the NGPO.

**Progress to date.** Twelve of the thirteen strategic objectives are currently being addressed by action teams or working groups. Each of the operating teams developed a team charter and an action plan. Two teams have completed their reports and will seek Steering

## PUBLIC HEALTH GIS NEWS AND INFORMATION

May 2005 (No. 64)--11<sup>th</sup> year of continuous reporting

13

Committee approval. Other teams are implementing specific actions identified in their action plans or work plans. The attached Future Directions Quarterly Report outlines areas of responsibility, major accomplishments, performance measures, issues and concerns and support needed for each team. A summary of accomplishments by focus area follows.

Partnerships with Purpose. The **Governance Action Team**, composed of members from the private sector, state and local government, academia and federal partners, is investigating and analyzing options for a more inclusive NSDI governance model. An extensive research and outreach effort is currently underway. Recommendations and options will be completed by June. The **Tribal Action Team** and the **Non-Geospatial Organizations Action Team** have developed action plans and are targeting their outreach and implementation efforts. They are also coordinating activities with other action teams in order to avoid duplication of effort. The **Fifty States Initiative Action Team** has completed its report and action plan. The plan was approved by the **National States Geographic Information Council (NSGIC) Board**, presented to the FGDC Coordination Group and is scheduled for FGDC Steering Committee approval. The strategic objective regarding agreements with the private sector and utility industry to facilitate participation in building the NSDI has not been formally addressed at this time. The involvement of the private sector has been approached indirectly through the extensive effort of the Governance Outreach Subcommittee. This objective will become a focus area for the FGDC secretariat staff director and staff during the next quarter.

Communicating the Message. The **Business Case Action Team** is reviewing literature to document and publish business cases that illustrate the value of collaborative development and access to geospatial information and services for selected audiences. Coordination and collaboration with the **Strategic Communications Team** as well as briefing the NGPO staff and the FGDC Coordination Group, Subcommittees and Working Groups are identified next steps toward implementation.

The **Communications Action Team** presented the Strategic Communications Plan to the FGDC Coordination Group at the January meeting. FGDC, in concert with GOS and The National Map, will embrace a

leadership role on behalf of the geospatial community to promote the significance and value of geospatial information and the NSDI. Primary targeted audiences for the first phase of the plan include FGDC member agencies, FGDC partners, tribal, local and state governments and non-geospatial organizations. An additional goal of the Communications Team is to provide communications support for the other FGDC **Future Directions** teams. The **Training and Education Team** strives to aid the implementation of FGDC programs (Metadata, Framework and Clearinghouse/Portal) through training and education initiatives and outreach. Efforts include presentations and discussions at industry conferences, train-the-trainer workshops, engagement of the academic community to develop implementation strategies for framework integration, and research of alternative training methods including on-line and distributed network delivery.

Making Framework Real. The Future Directions activity emphasizes the adoption and implementation of framework standards. The **Standards Working Group** is accelerating the submission of framework data standards to ANSI. The project manager and contract support are adjudicating nearly 5000 comments before submitting these standards for approval by ANSI. Concurrently, a small diverse Team to Identify New Themes for Standards Development is researching and identifying potential data themes for future standards development. Outreach efforts to identify potential data themes are underway. The **Publishing Metadata Team** designed, developed, and recently distributed a Member Agency Profile to FGDC member agencies to determine the status of Federal agency metadata implementation and identify key agency metadata contacts. The profile will be integrated into the FGDC annual reporting format. The members of the **Standards and Web Protocols Team** are working collaboratively to develop their work plan while coordinating with the Standards Working Group and Training and Education Team. Lastly, the newly formed **Urban Areas Team** developed a team charter and work plan.

Support Needed. The NSDI Future Directions will require: continued financial support for travel for action team members; continued financial support for implementation; dedicated staff for communications and implementation; continued support from the project manager and facilitator; realignment of FGDC staff

## PUBLIC HEALTH GIS NEWS AND INFORMATION

May 2005 (No. 64)--11<sup>th</sup> year of continuous reporting

14

priorities for successful implementation; on-going communication and briefings between and among FGDC Actions Teams and NGPO Study Teams; and endorsement from members of the Steering Committee to continue efforts.

Acknowledgements. FGDC would like to thank the 80 or more members of the geospatial community from Federal, state, local government, private sector, and academia who are serving on action teams and dedicating time to the Future Directions Initiative. [The full report, action plans, team charters, and monthly reports are found at the FGDC web site [www.fgdc.gov/futuredirections](http://www.fgdc.gov/futuredirections)]

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### Recent (selected) Government Accountability Office (GAO) Reports, 2004

[<http://www.gao.gov/docsearch/repandtest.html>]

Community Development Block Grant Formula: Targeting Assistance to High-Need Communities Could Be Enhanced GAO-05-622T, April 26, 2005; Nuclear Weapons: Preliminary Results of Review of Campaigns to Provide Scientific Support for the Stockpile Stewardship Program GAO-05-636R, April 29, 2005; Agent Orange: Limited Information Is Available on the Number of Civilians Exposed in Vietnam and Their Workers' Compensation Claims GAO-05-371, April 22, 2005; Anthrax Detection: Agencies Need to Validate Sampling Activities in Order to Increase Confidence in Negative Results GAO-05-493T, April 5, 2005; and Indian Child Welfare Act: Existing Information on Implementation Issues Could Be Used to Target Guidance and Assistance to States GAO-05-290, April 4, 2005.

### Web Site(s) of Interest for this Edition

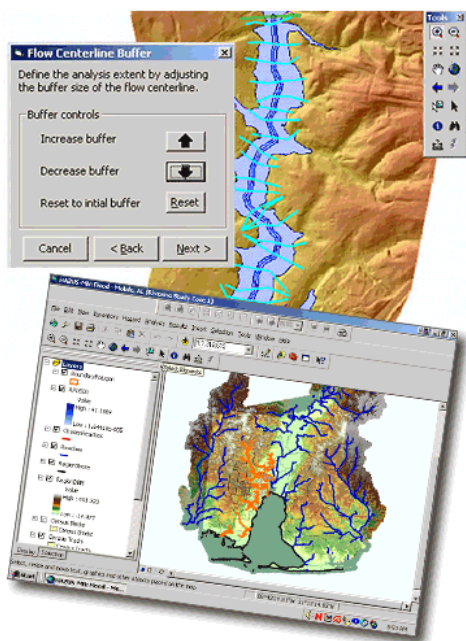
<https://www2.smittskyddsinstitutet.se/BSN> **The Basic Surveillance Network (BSN).** The network is funded by the European Commission and administered by the Swedish Institute for Infectious Disease Control. It is one out of several community networks that collect facts on communicable diseases. The purpose of BSN is not to collect detailed information only on one disease, but rather to collect basic data on approximately 40 different diseases. A very basic data set collection gives the advantage of data being available in most national

databases. Basic data (now 40 different diseases) includes information on reporting country, the date when the case was reported, age and sex of the case. Some 15 member countries of the European Union have agreed to participate in the network and in addition Iceland, Norway and Switzerland. The collected data reflect the content of the national databases and thus differs considerably between countries.

[http://www.nycosh.org/index\\_environment\\_wtc.html](http://www.nycosh.org/index_environment_wtc.html)

**World Trade Center Registry**, New York Committee for Occupational Safety and Health (NYCOSH). Among the tragic events of September 11th was the potential exposure of thousands of people to the toxic chemicals released during the explosion and collapse of the World Trade Center towers. Two years after the attacks, the New York City Department of Health and Mental Hygiene, partnering with the United States Agency for Toxic Substances and Disease Registries, has introduced a project to identify and track some of the people who were in Lower Manhattan on 9/11 and after to determine the long-term effects of exposure. This project, the World Trade Center Registry, is an important step.

<http://www.fema.gov/hazus/index.shtm> **HAZUS-MH** is a powerful risk assessment software program for analyzing potential losses from floods, hurricane winds and earthquakes. In HAZUS-MH, current scientific and engineering knowledge is coupled with the latest Geographic Information Systems (GIS) technology to produce estimates of hazard related damage before, or after, a disaster occurs. HAZUS-MH takes into account various impacts of a hazard event such as: Physical damage: damage to residential and commercial buildings, schools, critical facilities, and infrastructure; Economic loss: lost jobs, business interruptions, repair and reconstruction costs; and Social impacts: impacts to people, including requirements for shelters and medical aid. Federal, State and local government agencies and the private sector can now order HAZUS-MH free-of-charge from the FEMA Distribution Center.



<http://www.ers.usda.gov/Data/RuralUrbanCommutingAreaCodes>  
 The new **Rural-Urban Commuting Area (RUCA)** codes have been posted. These codes classify U.S. census tracts using measures of population density, urbanization, and daily commuting. The most recent RUCA codes are based on data from the 2000 decennial census. The classification contains two levels. Whole numbers (1-10) delineate metropolitan, micropolitan, small town, and rural commuting areas based on the size and direction of the primary (largest) commuting flows. These 10 codes are further subdivided to permit stricter or looser delimitation of commuting areas, based on secondary (second largest) commuting flows. The approach errs in the direction of more codes, providing flexibility in combining levels to meet varying definitional needs and preferences.

<http://www.sensornet.gov> The Oak Ridge National Laboratory (ORNL) and strategic partners are working together to build a comprehensive incident management system for the near-real-time detection, identification, and assessment of chemical, biological, radiological, nuclear, and explosive (CBRNE) threats. The goal of SensorNet is to bring together and coordinate all necessary knowledge and response information quickly and effectively. This will be done by providing a common data highway for the processing and dissemination of data from CBRNE, meteorological,

video and other sensors in order to provide near-real-time information to emergency management decision makers and first responders.

<http://www.adobe.com/svg/overview/svg.html> **Scalable Vector Graphics (SVG)** is a new graphics file format and Web development language based on XML. SVG enables Web developers and designers to create dynamically generated, high-quality graphics from real-time data with precise structural and visual control. SVG consists of two parts: an XML-based file format and a programming API for graphical applications. Key features include shapes, text and embedded raster graphics, with many different painting styles. It supports scripting and has comprehensive support for animation. SVG is a royalty-free vendor-neutral open standard developed under the W3C Process.

<http://www.soc.hawaii.edu/leonj/leonj/leonpsy/traffic/tpintro.html#principles>  
**Traffic Psychology at the University of Hawaii.** Driving has become intolerably stressful, dangerous, demeaning. For instance: about 50,000 (fifty-thousand) deaths every year and about 3,000,000 (three million) injuries every year, year after year. As well, drivers are stressed out, threaten each other, are in a bad mood, terrorize their passengers, and often fantasize violent acts against each other. This shows there is a strong need for traffic psychology which can reverse this trend and alter our driving styles.

<http://www.epa.gov/earth1r6/science/remotesensing.htm>  
 Contains Environmental Applications of Remote Sensing Technologies Presentations from the **EPA Regional Science Council** seminar, March 2, 2005. Includes a variety of papers online that were presented at this seminar.

[http://geogdata.csun.edu/world\\_atlas/index.html](http://geogdata.csun.edu/world_atlas/index.html) **World Atlas of Panoramic Aerial Images.** Welcome to the California Geographical Survey a resource hosted by the Department of Geography and the College of Social and Behavioral Sciences at California State University, Northridge. The Survey is a creation of William Bowen (professor emeritus). It operates for the benefit of the students and faculty of the California State University System, public and parochial school teachers, and the people of the State of California. It is the California Geographical Survey's intention to provide a variety of

## PUBLIC HEALTH GIS NEWS AND INFORMATION

May 2005 (No. 64)--11<sup>th</sup> year of continuous reporting

16

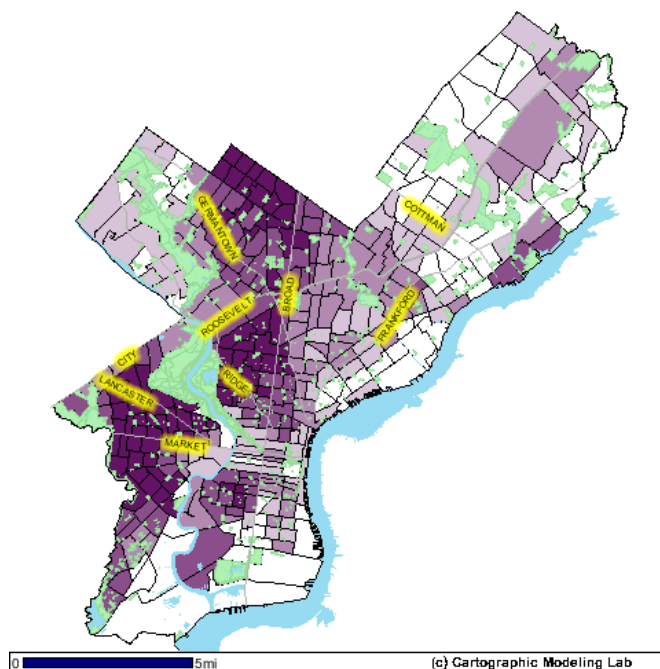
important geographic resources to the entire Internet community. [Editor: It was Dr. Bowen who initiated the NCHS/CDC Cartography and GIS Guest Lecture Series in 1998, in Hyattsville MD, with the presentation "Mapping Applications and Spatial Analysis"]

<http://borderhealth.cr.usgs.gov> **Health Issues Know No Borders.** The USGS has created a bi-national database for the U.S./Mexico Border region (Lower Rio Grande Valley) that integrates mapping data, demographics, water and biological contaminant data, public health and geologic surveys. This region is becoming increasingly vulnerable to land use changes due to rapid population growth and economic development. Water shortages and environmental degradation are threatening the quality of life in the region and are raising concerns about the interactions between environmental quality and human health. The USGS database can be used to analyze possible causal links between the environment and public health issues. In partnership with the Texas Department of Health, USGS applied spatial analysis methods to analyze health issues and to explore possible linkages between disease and the environment.

<http://www.ombwatch.org/article/archive/97> **Healthy Californians Biomonitoring Program.** In September 2001, the Legislature passed Senate Bill 702 (Chapter 538, Statutes of 2001), making California the first state in the nation to begin planning a statewide environmental health tracking network for chronic diseases and environmental hazards and exposures. In February 2005 followup, Senators Ortiz and Perata introduced Senate Bill 600 recommending the establishment of a statewide biomonitoring program. The program shall utilize biospecimens, as appropriate, to identify toxic chemicals that are present in the bodies of Californians.

<http://cml.upenn.edu/nis> **Philadelphia Neighborhood Information System (NIS).** The Philadelphia NIS is a web-based property and social indicators information system used by city agencies and community based organizations throughout Philadelphia. NIS users research individual properties; run queries to locate comparables; plan, site and evaluate housing development programs; and study neighborhood conditions with user-defined GIS maps, charts and reports. The Neighborhood Information System is run by the Cartographic Modeling Lab at the University of

Pennsylvania. [Map- 2000 Census Tracts, Philadelphia: Percentage of total population (quantiles) that is African American in 2000]



[http://www.usgs.gov/newsroom/article\\_archive.asp](http://www.usgs.gov/newsroom/article_archive.asp) [On] **Environmental Mercury Mapping, Modeling, & Analysis (EMMA).** Understanding the causes and consequences of Hg or mercury contamination in the environment is a problem of enormous geographic scope and scientific complexity. The Environmental Mercury Mapping, Modeling, and Analysis (EMMMA) website, a joint effort of USGS and National Institute of Environmental Health Science (NIEHS), is designed to support environmental and health researchers, as well as land and resource managers by providing necessary tools. The USGS and the NIEHS have chosen mercury as a test contaminant to develop a web-based system for geospatial analysis. The Web site provides easy access to environmental mercury datasets and integrates USGS maps, imagery, and other geospatial tools. Datasets accessible through the site include mercury concentrations in fish tissue, soils, stream sediments, and coal; atmospheric mercury emissions; atmospheric mercury monitoring sites; and locations of mercury mines and other ore deposits. [See topic: Item 6. USGS Presents Science about a Changing World at AAG 2005]

<http://nalu.geog.washington.edu/dms/hanford.html> [On]



## PUBLIC HEALTH GIS NEWS AND INFORMATION

May 2005 (No. 64)--11<sup>th</sup> year of continuous reporting

17

**Hanford Decision Mapping System.** The Hanford Site is located in South Eastern Washington State. Hanford produced plutonium for the National Arsenal of nuclear weapons for nearly 50 years. Production operations stopped at the site in 1989 and today Hanford's mission is entirely related to cleanup. Four major areas are included on the Environmental Protection Agency's National Priority List (under Superfund). Five information structures were developed for the pilot Decision Mapping



System. Early lessons from this work suggest that transparency is integral to long-term management, a participatory design process contributed greatly to its perceived success, and better data integration to support decision making is needed. This work has broad implications for risk communicators and risk managers

because it speaks to the design of information systems to support "analytic-deliberative" decision processes (i.e., those that rely upon both risk science and public dialogue).

[http://www.alphaworks.ibm.com/tech/stem?open&S\\_TACT=105AGX59&S\\_CMP=GR&ca=dgr-lnxw01awstem](http://www.alphaworks.ibm.com/tech/stem?open&S_TACT=105AGX59&S_CMP=GR&ca=dgr-lnxw01awstem)

**Spatiotemporal Epidemiological Modeler** (from IBM). The Spatiotemporal Epidemiological Modeler (STEM) tool is designed to help scientists and public health officials create and use spatial and temporal models of emerging infectious diseases. The STEM application has built in Geographical Information System (GIS) data for every county in the United States. It comes with data about county borders, populations, shared borders (neighbors), interstate highways, state highways, and airports. This data comes from the public U.S. census TIGER files. STEM is designed to make it easy for developers and researchers to plug in their own models. It comes with spatiotemporal Susceptible/ Infectious/ Recovered (SIR) and Susceptible/ Exposed/ Infectious/ Recovered (SEIR) models pre-coded with both deterministic and stochastic engines. The parameters in any model are specified in XML configuration files. Users can easily change the weight or significance of various disease vectors (such as the weights of highways, shared borders, airports, etc). Users can also create their own unique vectors for disease. Further details are available in the user manual and design documentation.

## Final Thoughts

### The Growing Importance of GIS and Community Health Indicator Data

Over the past year or so, we have brought to your attention the importance of GIS mapping of community health indicators, through our invitational theme to map health inequalities. We are not alone in the effort to better utilize georeferenced small area health and health-related indicator data. There is a growing body of research as well as data collection initiatives by federal, state and local agencies to build a decisive body of knowledge for community understanding and more cost-effective investment of scarce public health intervention and prevention dollars. Community health indicator data have potentially enormous value at all levels of government. For example, through creative partnering with local data collection agencies, the federal government might well improve efficiencies in the sample design of national health surveys and utilize available local information to supplement or oversample unique conditions and subpopulations. Most of us would agree with the Brookings Institution's Metropolitan Policy Program goal that the time has come for a national infrastructure for community statistics, web-based and accessible to all sectors of society [See: <http://www.brookings.edu/metro/umi/areamer.htm>]

## PUBLIC HEALTH GIS NEWS AND INFORMATION

May 2005 (No. 64)—11<sup>th</sup> year of continuous reporting

18

Many metropolitan governments and agencies already are in the process of developing demographic, social, economic, and health and wellbeing measurements of their respective populations. The Urban Institute's National Neighborhood Indicators Partnership (NNIP) counts 22 cities (Nashville, January 2005, not shown in map) with 18 additional possibilities. Some community profile data bases are more robust i.e., inclusion of parcel-level and digital imagery data layers, than others but the key ingredient to any success is information which is geocoded.



### NNIP PARTNERS MAP [National Neighborhood

Indicators Partnership: See: <http://www.urban.org/nnip/partners.html>]

Geocoding, or the process of spatially referencing (in coordinates of latitude and longitude) street address information to a base digital geographic file, is the basic building block of community health indicator data. Not only can georeferenced information then be explored with Geographic Information Systems (GIS) for clustering and pattern detection but the information also can be aggregated by some level of census geography to help explore for possible associative contextual relationships with population conditions and health outcomes. Our ability to conduct meaningful “small area” e.g., communities and neighborhoods, and standardized socioeconomic status (SES) and socioeconomic position (SEP) analyses depends then on the all important selection of geographic area [For terms and methods, see: Krieger N, Williams D, Moss N, Measuring social class in US public health research: concepts, methodologies and guidelines. *Ann Rev Public Health* 1997; 18:341-378].

A strong case has emerged over the past 10 years for use of the census tract as the geographic choice of area to analyze socioeconomic conditions and changes (including public health) in metropolitan communities and neighborhoods. Some key proponents of census tract geography include the Urban Institute [See: <http://www.urban.org/nnip/pdf/guidebk.pdf>] and the Harvard School of Public Health [See: Public Health Disparities Geocoding Project at Harvard University website <http://www.hsph.harvard.edu/thegeocodingproject/webpage/monograph/absms.htm>]. Several illustrations of well-developed census tract and GIS systems include Cleveland's Case Western Reserve University's Center on Urban Poverty and Social Change, Mandel School of Applied Social Sciences [See CWRU urban poverty website at url: [http://povertycenter.cwru.edu/urban\\_poverty/dev/cando/profile.asp](http://povertycenter.cwru.edu/urban_poverty/dev/cando/profile.asp)] and, collaboratively, Cleveland's Federation for Community Planning and United Way Services, The Center for Community Solutions [See Center's website at: <http://www.communitysolutions.com>]. Gaining a better understanding of the role of socioeconomic influences on health disparities seems paramount in order to resolve this pressing national issue.

The National Committee on Vital and Health Statistics (NCVHS), the chief science advisory group to the Department of Health and Human Services (HHS) recognizes the growing importance and need for socioeconomic information to better measure and eliminate health disparities. It finds that “For each racial and ethnic group and subgroup, data are needed not only on health factors including health status, health care, health care expenditures, access to care and experiences in the health care system but also on contextual factors such as socioeconomic position and the conditions in which people live.” It further states “The problem is that the very groups at particular risk for ill health and poor health care are those about whom health statistics and contextual data are most deficient.” And, “It is significant that *Healthy People 2010*, which has an overarching goal of eliminating health disparities, lacks baseline data to quantify specific improvements for some subpopulations in many areas.” [Search: <http://www.ncvhs.hhs.gov>- Recommendations on the Nation's Data for Measuring and Eliminating Health Disparities Associated with Race, Ethnicity, and Socioeconomic Position, 8 pp., unpublished]

## PUBLIC HEALTH GIS NEWS AND INFORMATION

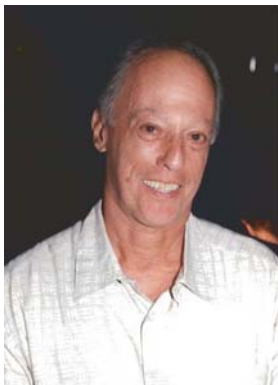
May 2005 (No. 64)—11<sup>th</sup> year of continuous reporting

19

The lack of socioeconomic data in most US public health surveillance systems is a recurring theme in the latest report from the Public Health Disparities Geocoding Project [See: Krieger N, Chen JT, Waterman PD, Rehkopf DH and Subramanian SV Painting a Truer Picture of US Socioeconomic and Racial/Ethnic Health Inequalities: The Public Health Disparities Geocoding Project, *Am J Public Health* 95(2): 312-323 FEB 2005]. It points out that “Because of an absence of baseline data, 70% of the 467 US public health objectives for the year 2010 lack socioeconomic targets.” This contrasts to European nations where health statistics routinely include socioeconomic data. The findings in this latest Public Health Disparities Geocoding Project study of mostly consensus Healthy People 2000 health status indicators (in Massachusetts and Rhode Island) and area-based census tract measures are illuminating.

The results “demonstrate the salience and feasibility of routinely monitoring US socioeconomic inequalities in health using the strategy of characterizing cases and the overall population in relation to a common and accessible metric: the poverty level of the CT [census tract] in which individuals reside. The picture painted is one of powerful socioeconomic gradients in health across myriad outcomes, for women and men in all racial/ethnic groups, whereby socioeconomic deprivation contributes not only to racial/ethnic disparities in health but also to the occurrence of more than half the cases for more than half the outcomes studied.” [Note: The Project’s approach to generating and appraising the validity and utility of the area-based socioeconomic measures (ABSMSs), as well as many background reference works may be found at: <http://www.hsph.harvard.edu/thegeocodingproject/webpage/monograph/absms.htm#genabsms>]. The authors conclude that “Gooding and use of the CT poverty measure permit routine monitoring of US socioeconomic inequalities in health, using a common and accessible metric.”

The Map Supplement in this edition of CDC’s *Public Health GIS News and Information* maintains our prior focus on issues related to metropolitan neighborhood health disparities. It is coauthored by Joseph Ahern and Terry Lenahan, staff from the Center for Community Solutions (CCS). Their theme of youth with disabilities is adapted from CCS’s most recent volume in a series “*Social Indicators 2003: Children and Families*” (published October 2003). Their GIS maps provide visibility of the distribution of youth with disabilities along with contextual or area-based measures of poverty level and prenatal care, at the census tract level. Terry has been instrumental in the collaboration of CCS with CDC and her maps of Cleveland’s neighborhoods have appeared in *Public Health GIS News and Information* over the past year. I have asked Terry to continue to map the excellent work of CCS in the hope that others developing similar metropolitan health indicators and area-based socioeconomic measures will join with us in this effort.



Charles M. Croner, Ph.D., Geographer and Survey Statistician, and Editor, *Public Health GIS News and Information*, Office of Research and Methodology, National Center for Health Statistics, and DHHS Representative, Federal Geographic Data Committee, at [cmc2@cdc.gov](mailto:cmc2@cdc.gov). Celebrating our 64<sup>th</sup> edition with continuous reporting since 1994.

**The NCHS GIS home page contains current GIS events, archived GIS reports and other GIS links**  
<http://www.cdc.gov/nchs/gis.htm> - please join us **June 28, 2005** for another in our GIS Guest Lecture Series

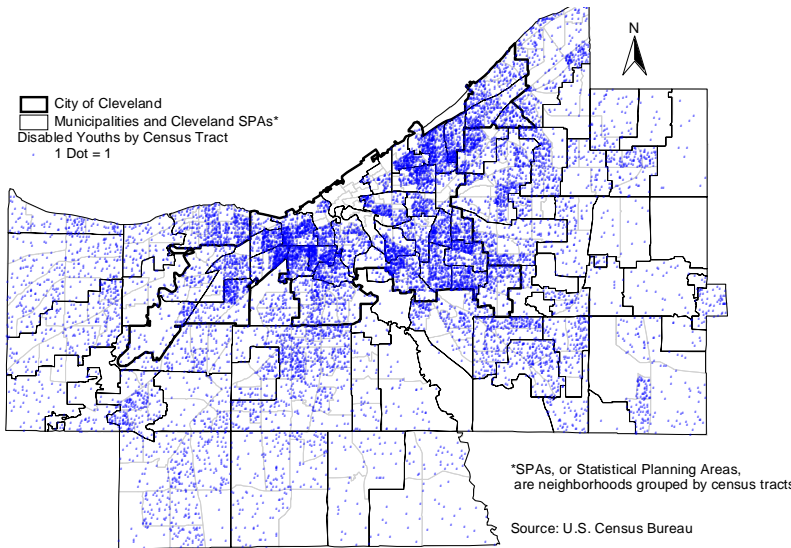
APPENDIX: MAPPING HEALTH INEQUALITIES

[Seventh in Series: See also May, July, September, November 2004, January and March 2005 editions]

## Youths Five to 15 with Disabilities Cuyahoga County, Ohio, 2000

Joseph Ahern and Terry Lenahan, The Center for Community Solutions, Cleveland, Ohio

### Youths 5 to 15 with One or More Disabilities, Cuyahoga County, Ohio, 2000 (Dot density map below)

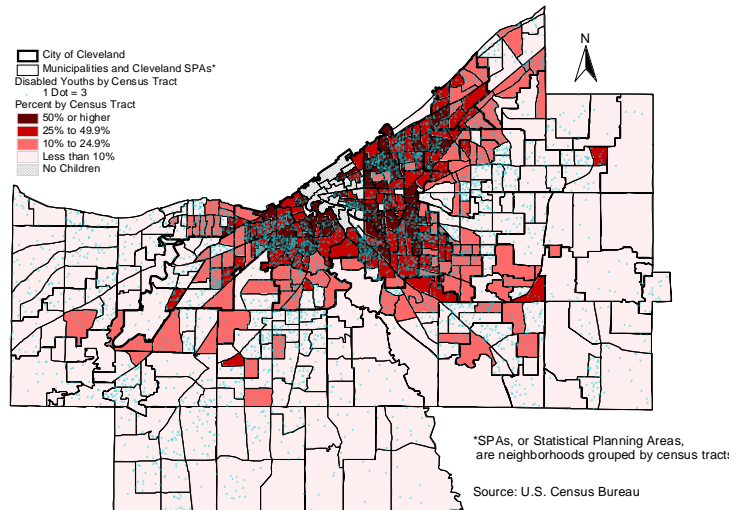


In 2000, 2.6 million American youths five to 15, or 5.8 percent of that age group, had one or more disabilities. Research has shown that youths with disabilities are less likely to complete high school than those without disabilities and have difficulty entering the workforce or enrolling in institutions of higher learning. They are also at greater risk of being involved in the juvenile justice system.<sup>1</sup> Disabilities involving learning, remembering, and concentrating are the most prevalent type among this age group and point to the need for educational support services that will enable them to succeed in school and, later, in the workplace.

According to the 2000 census, 14,200 youths five to 15 in Cuyahoga County, Ohio reported having one or more disabilities.<sup>2</sup> This number represents 6.5 percent of the youth population in the county, slightly higher than the national rate of 5.8 percent. Mental disabilities, i.e., those involving learning, remembering, or concentrating, accounted for the highest proportion of disabilities among the county's youth, 5.2 percent, also higher than the national rate of 4.6 percent.

### Percent of Youths Six to 17 below the Poverty Level and Youths 5 to 15 with One or More Disabilities, Cuyahoga County, Ohio, 2000 (map right)

The city of Cleveland had a higher rate of youth disabilities than did the suburbs near to Cleveland, and these suburbs had a higher rate than the remaining Cuyahoga County suburbs. In Cleveland, 8.7 percent of youths had one or more disabilities, compared to 5.8 percent in the near suburbs and 4.4 percent in the remaining suburbs. The incidence of mental disabilities followed a similar pattern, 6.6 percent in the city of Cleveland, 4.8 percent in the near suburbs, and 3.8 percent in the remaining suburbs.

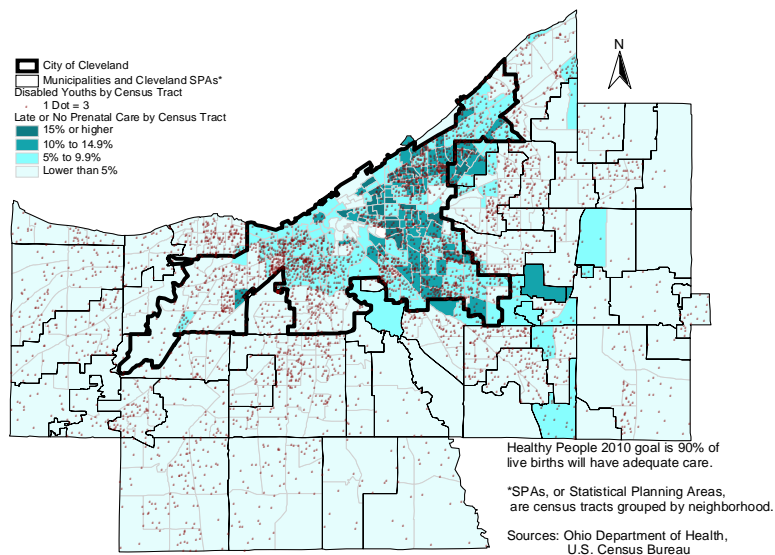


## PUBLIC HEALTH GIS NEWS AND INFORMATION

May 2005 (No. 64)—11<sup>th</sup> year of continuous reporting

21

The higher incidence of disability among youths in the city of Cleveland and the suburbs near to Cleveland may in part be explained by results from a national study that found youths with disabilities are more likely than youths in the general population to live in one-parent households, to have parents with lower educational attainment or who are unemployed, to be living below the poverty line, and to lack health insurance.<sup>3</sup> All of these factors are more prevalent in Cleveland than in the suburbs, and are more prevalent in the suburbs nearest to Cleveland than in the remaining Cuyahoga County suburbs. Factors related to poverty, such as poor prenatal care, untreated or unidentified medical conditions early in life, and poor family functioning from the stresses of poverty, may create or contribute to disabling conditions. In Cuyahoga County, the distributions of poverty and inadequate prenatal care<sup>4</sup> are both similar to the distribution of youths with disabilities.



**Map- Late or No Prenatal Care as a Percent of Total Births, 1996 to 2001 Average, and Youths 5 to 15 with One or More Disabilities, 2000, Cuyahoga County, Ohio**

<sup>1</sup> National Collaborative on Workforce and Disability for Youth (NCWD/Youth), “2002 Literature Review Summary: Policymaker.” Available at [www.ncwd-youth.info/who\\_Are\\_You/index.html](http://www.ncwd-youth.info/who_Are_You/index.html)

<sup>2</sup> The 2000 census reported several types of disabilities, including sensory, physical, mental, and self-care disabilities. An individual is considered to have a disability if he or she responded affirmatively to the existence of a long-lasting condition such as:

- blindness, deafness, or a severe vision or hearing impairment (sensory disability);
- one that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting, or carrying (physical disability);
- learning, remembering, or concentrating (mental disability); or
- dressing, bathing, or getting around inside the home (self-care disability).

<sup>3</sup> M. Wagner, C. Marder, P. Levine, R. Cameto, T.W. Cadwallader, J. Blackorby. *The individual and household characteristics of youth with disabilities. A report from the National Longitudinal Transition Study-2 (NLTS2)*. Menlo Park, CA: SRI International. Available at [www.nlts2.org](http://www.nlts2.org)

<sup>4</sup> See “Inadequate Prenatal Care,” Mark J. Salling, Ph.D. and Terry Lenahan, *Public Health GIS News and Information*, September 2004 (No. 60), Appendix, pp. 21-22.

Maps created by: Ms. Terry Lenahan, Policy and Planning Associate in Research, The Center for Community Solutions. “Late or No Prenatal Care” rates were calculated by Lucy Malakar. Data were geocoded to census tract level by Brian McNamara, GIS specialist. Ellen Cyran, systems programmer/analyst, provided programming for the prenatal care rate data. Brian and Ellen are with the Northern Ohio Data and Information Service at the Maxine Goodman Levin College of Urban Affairs, Cleveland State University. “Youths Ages 5 to 15 with Disabilities by Type” was one of 22 indicators from *Social Indicators 2004-2005: Youth Development*, produced by The Center for Community Solutions and United Way Services of Greater Cleveland. The complete report may be seen at Community Solutions’ website ([www.communitysolutions.com](http://www.communitysolutions.com)). Contact: Terry at [tlenahan@communitysolutions.com](mailto:tlenahan@communitysolutions.com).