

PUBLIC HEALTH GIS NEWS AND INFORMATION

July 2005 (No. 65)

*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); (p. 9); Public Health and GIS Literature (pp.9-Website(s) of Interest (pp. 19-21); Final



News from GIS Users (pp.2-9); GIS Outreach 15); DHHS and Federal Update (pp.15-19); Thoughts (pp.21-24); **MAP** Appendix (25-26)

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

OH [See: <http://www.urisa.org/PPGIS/2005/PPGISprogram.htm>]

The June 28, 2005 presentation on Housing and Public Health, by Jonathan Sperling, Ph.D., Department of Housing and Urban Development, is now accessible at <http://video.cdc.gov/ramgen/gis/gis-06-28-2005.rm>. The NCHS GIS Guest Lecture Series has been presented continuously at NCHS since 1988. The next GIS public health lecture will be announced in the September, 2005, edition. 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. 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]

[Notes: (1) Calendar events are posted as received; for a more complete listing see NCHS GIS website and calendar; (2) Disclaimer: The findings and conclusions in this report are those of the Editor and do not necessarily represent the views of the Centers for Disease Control and Prevention (CDC)]

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* Activating metadata: the role of metadata in effective spatial data exploitation, National Institute for Environmental eScience (NIEeS), July 6-7, 2005, Cambridge UK [See: <http://www.niees.ac.uk>]

* NACCHO-ASTHO 2005 Joint Conference, "Reversing the Tide: Promoting Policies and Programs to Advance the Nation's Health," July 12-15, 2005 [See website at: <http://www.naccho.org>]

* 4th Annual Public Participation GIS (PPGIS) Conference, Urban and Regional Information Systems Association (URISA), July 31-August 2, 2005, Cleveland

* 13th Annual Conference of the National Association of Local Boards of Health (NALBH), "Responding to Our Community's Needs," August 10-13, 2005, Nashville TN [See: <http://www.nalboh.org>]

* COHAB 2005-First International Conference on Health and Biodiversity, August 22-25, 2005, Galway Ireland [See: <http://www.cohab2005.com>]

* 2005 Syndromic Surveillance Conference, September 14-15, 2005, Seattle WA [See 2005 SSC website at following: http://www.syndromic.org/con_2005.html]

* GEOMED 2005: Fifth international, interdisciplinary conference on geomedical systems, September 16-17, 2005, Cambridge UK [See: <http://www.geomed2005.org>]

* 96th Annual Conference of the Canadian Public Health Association and Statistics Canada's Health Statistics Data User's Conference 2005, September 18-21, 2005 Ottawa Ontario [See joint conference website at following: http://www.cpha.ca/conf96/web_eng/index.html]

* Conference on Community Health Assessment, September 20-22, 2005, Seattle WA [See website: <http://www.cdc.gov/epo/dphsi/AI/conference/2005/Conference05.htm>]

* Annual conference on Children's Health and the Environment, the Mid-Atlantic Center for Children's Health and the Environment (MACCHE), October 1, 2005, Baltimore MD [See conference website at following: <http://www.gwu.edu/%7Emacche/events.html>]

* 3rd National Prevention Summit: Innovations in Community Prevention, October 24-25, 2005 [See NPS website: <http://www.healthierus.gov>]

* 52nd Annual North American Meetings of the Regional

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Science Association International, November 10-12, 2005, Las Vegas NV [See conference website at following: <http://www.narsc.org/narsc/index.html>]

* First International Conference on Geospatial Semantics (GeoS 2005), November 29-30, 2005, Mexico City, Mexico [See: http://www.geosco.org/call_for_papers.htm]

* Second Annual International Conference on Social Science Research, December 4-6, 2005, Orlando Altamonte, FL [See conference website at following URL: <http://www.centrepp.org/socialscience.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. From Nina Lam, President, University Consortium for Geographic Information Science (UCGIS): The **2005 UCGIS Summer Assembly** will take place in Jackson Hole, Wyoming from June 28-July 1, 2005. UCGIS summer assemblies have always been an ideal forum for intellectual exchange and upkeep of current GIS research and educational agendas. This year marks the 10th anniversary of the consortium, and we have planned a series of outstanding presentations and workshops. These include, for example, plenary talks by Roger Downs and John Wilson, a special panel by past UCGIS presidents, student paper presentations, GIScience Bowl, and special workshops. [For detailed listings, please check the UCGIS website www.ucgis.org or Nina at nlam@lsu.edu]

2. Maryland's Department of Health and Mental Hygiene (DHMH) will host their annual **Environmental Public Health Tracking (EPHT) Conference**, August 22, 2005, to be held at the Johns Hopkins University Downtown Center, Baltimore. This year's theme is, "Analysis of EPHT Data". Topics include the use of a spatial scan statistic to analyze ordinal prostate cancer data (Inkyung Jung, Harvard University), hierarchical models (Francesca Dominici, Johns Hopkins University), analysis of satellite images to identify crops and agricultural pesticides (Susan Maxwell, USGS for Earth Resources Observation and Science Data Center, Sioux Falls, SD) and SIGEpi-a customized ESRI ArcView program-to carry out environmental and health studies in

the Americas (Patricia Najera, geographer, Pan American Health Organization, Washington, DC). A two-hour symposium on asthma in Maryland and a risk communication session will be held in the afternoon. Attendees can sponsor their own sessions or present posters. There is no registration fee and lunch and refreshments are included. Registration and abstract submission deadlines are August 12th. [Additional information and online registration are available at <http://epht.dhmh.md.gov>; Contact: John Braggio at JBraggio@dhmh.state.md.us]

3. From Kawin Chan, Department of Geography, Hong Kong: "**Engaging geographic information systems (GIS) in the development of three-dimensional (3-D) models for environmental impact assessment.**"

Environmental Impact Assessment (EIA) is a statutory process in Hong Kong required of proponents of designated construction projects before environmental permits are issued by the Environmental Protection Department (EPD). In our compliance with the EIA Ordinance, the EPD requires all consulting agencies to post their EIA reports on the web for open access. Furthermore, the EPD strongly encourages environmental consultants to employ 3D models, fly-through animation and videos to simulate realistic terrain and construction projects in their presentation of EIA reports.

The two-day workshop intends to impart essential knowledge and skills in the use of GIS to enable terrain models in the 3D perspective. Participants will also learn the techniques of making photo-realistic models by superimposing aerial photographs over the terrain model. Specific contents include the following topics: Basic concepts and operational knowledge in GIS; 2D versus 3D data representation; Representing urban landscapes in 3D; Making 3D models with photo realism; Developing slope, aspect, line of sight, and profile analyses from 3D representation; Constructing VRML representation of 3D elevation models for web browsing; Performing, as well, visibility studies; Incorporating environmental issues in 3D visualization; Merits and deficiencies of 3D visualization as a public engagement tool. [See course dates and registration at the following : <http://geog.hku.hk/gislab/3dgisworkshop>]

4. From Ned Levine: This is to announce the release of **CrimeStat III**, a spatial statistics program for the analysis of incident (point) locations, developed under

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grants from the National Institute of Justice. The program is Windows-based and interfaces with most desktop GIS programs. The program provides supplemental statistical tools to aid law enforcement agencies, criminal justice researchers, epidemiologists, and other researchers in analyzing spatial incident data. CrimeStat is being used by researchers and practitioners around the world, including many health researchers. The new version is 3.0 (CrimeStat III) and is available free of charge.

The program inputs incident locations (e.g., burglary locations, motor vehicle crash locations, manufacturing sites, residence of flu victims) in 'dbf', 'shp', ASCII or ODBC-compliant formats using either spherical or projected coordinates. The program calculates various spatial statistics and writes graphical objects to ArcView®, ArcGIS®, MapInfo®, Atlas*GIS, Surfer® for Windows, and ArcView Spatial Analyst®.

The statistics cover spatial description and distance analysis (for describing the general spatial pattern of incidents), hot spot analysis (for identifying concentrations of events), interpolation (for visualizing changes in events over a large area), space-time analysis (for understanding temporal and spatial interaction), and journey-to-crime estimation (for estimating the likely residence location of a serial offender). New in version 3.0 is a module for travel demand modeling, widely used in transportation planning, but applied to crime and other rare phenomena. It allows an analyst to model crime trips over a metropolitan area and make reasonable guesses about the travel mode and likely routes taken. It can also be used to model possible interventions. Some of the new statistical tools include a stepwise multivariate Poisson regression routine and the ability to model spatial interaction with a travel network using travel time, speed, or travel cost, as an alternative to distance.

CrimeStat III is accompanied by sample data sets and a manual that gives the background behind the statistics and examples. The manual was fully re-written and also discusses applications of CrimeStat developed by other analysts and researchers, including several in epidemiology. [For more information on the features of CrimeStat III, see the National Institute of Justice website at <http://www.ojp.usdoj.gov/nij/maps> or the archive at ICPSR where the program and documentation can be downloaded, at <http://www.icpsr.umich.edu/CRIMESTAT>; Contact: Ned at Ned@nedlevine.com; Editor: This is Ned's third iteration of what has become a widely used geospatial analytic software to aid those in the field of criminal justice]

B. Department of Health and Human Services

<http://www.hhs.gov>

5. The first human **West Nile virus (WNV)** illness of 2005 has been reported to the Centers for Disease Control and Prevention (CDC) by the Kansas Department of Health and Environment. WNV is transmitted seasonally by infected mosquitoes. Since 1999, when WNV was first identified in the United States, WNV has caused nearly 17,000 cases of human illness, including more than 650 deaths. While Kansas is the first state to report human WNV activity, infection in birds, mosquitoes or horses has already been reported from fourteen states this year. [See expanded coverage at website: <http://www.hhs.gov/news/newsletter/weekly>, ref: June27-July, 2005]

6. **HHS Announces \$95 Million to Improve the Health of Minorities.** HHS Secretary Mike Leavitt on Friday announced \$95 million in grants to develop a new program that will reduce the number of cancer deaths in minority and poor populations. This new initiative, called the **Community Networks Program (CNP)**, was developed by HHS' National Cancer Institute, part of the National Institutes of Health. Its aim is to reduce cancer disparities through community participation in education, research and training. Up to 25 grantees will develop programs to increase the use of cancer interventions in underserved communities. Interventions will include proven approaches including smoking cessation, increasing healthy eating and physical activity, and early detection and treatment of breast, cervical and colorectal cancers.

Programs will be designed to reach communities and populations experiencing a disproportionate share of the cancer burden, and will address African Americans, American Indians/Alaska Natives, Hawaiian Natives and other Pacific Islanders, Asians, Hispanics/Latinos, and rural underserved populations. "Community-based approaches continue to be a successful way to providing access and hope to those most in need," Secretary Leavitt said. "The CNP is a good model that will allow the communities to provide results to the community it serves." [For additional information about the Community Networks Program and grantees, go to <http://crchd.nci.nih.gov>]

7. Secretary Leavitt attended the **58th World Health Assembly** in Geneva, Switzerland, where he emphasized the need for vigilance and international coordination in

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the ongoing fight against global infectious diseases. The Secretary declared AIDS the most pressing global health priority and reiterated America's commitment to fighting the spread of AIDS around the world. Secretary Leavitt also highlighted America's growing concern of the threat of an influenza pandemic. "We have seen the damage avian flu has already caused to the people and economy of Southeast Asia. In the age of globalization, avian flu could spread quickly to more countries and regions, putting millions of lives at risk. In fact, I believe the world is closer to a potential influenza pandemic now than at any time in decades." [See: Secretary Leavitt's full remarks to the 58th World Health Assembly Plenary Session, visit <http://www.hhs.gov/news/speech/2005/050516a.html>]

Administration for Children and Families

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

8. A Childhood for Every Child: How Compassion-Driven Solutions are Transforming the Nation's Well-Being. Because no child should be disadvantaged because of the circumstances of his or her birth, a new National Reporting System documents what children are learning, and assesses opportunities for improvement so every child benefits from their Head Start experience. A ten-member Advisory Committee on Head Start Accountability and Educational Performance Standards will take a look at those findings in 2005, and consider if the system can be made even better.

Administration on Aging

<http://www.aoa.gov>

9. The U.S. Administration on Aging is proud to sponsor a new web-based service to help people with Medicare and other older adults to learn about and enroll in government benefits. BenefitsCheckUpRx includes the new Medicare Prescription Drug Coverage and other valuable federal, state and private programs that can save individuals money on health care and prescription drugs. BenefitsCheckUpRx is an online tool available to anyone, anywhere, anytime.

Agency for Healthcare Research and Quality

<http://www.ahrq.gov>

10. New Steps to Advance Health IT. HHS Secretary Mike Leavitt recently announced (June 6, 2005) the formation of a national collaboration and four requests for proposals (RFPs) that will advance efforts to reach the President's call for most Americans to have

electronic health records within ten years. The President's vision would create a personal health record that patients, doctors and other health care providers could securely access through the Internet no matter where a patient is seeking medical care. The announcement provides a way for patients, doctors, hospitals, insurance companies, and employers to agree on standards for electronic health records and ways to achieve interoperability-the ability to access this vital medical information immediately and efficiently.

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>

11. The Division of Health Care Statistics, NCHS, recently released a report showing that less than a third of the nation's hospital emergency and outpatient departments use electronic medical records, and even fewer doctors' offices do. About 31 percent of hospital emergency departments, some 29 percent of outpatient departments, and 17 percent of doctors' offices have electronic medical records to support patient care, as reported in NCHS ambulatory medical care surveys, conducted from 2001 to 2003. In physician offices, information technology was more frequently used for billing patients (73 percent) and only 8 percent used computerized systems for ordering prescriptions electronically. Electronic medical records and other health information technologies have been supported by private and accrediting organizations as well as by government agencies to streamline and promote quality of care. Advancing the goal of adoption of interoperable electronic health records within the next 10 years is a HHS priority. Future research at NCHS will focus on factors associated with use of health information technology. [See: "Use of Computerized Clinical Support Systems in Medical Settings: United States, 2001-03," at <http://www.cdc.gov/nchs/data/ad/ad353.pdf>]

12. The Percentage of U.S. Adults Who Smoke Continues to Decline. It appears the massive public education campaigns designed to relay the health risks associated with smoking are having a positive effect. The percentage of U.S. adults who smoke cigarettes continues to decline, according to an article in CDC's *Morbidity and Mortality Weekly Report* (MMWR).

The study, which uses data from the 2003

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National Health Interview Survey (NHIS), finds that approximately 21.6 percent of U.S. adults- over 45 million people- are current smokers. That's down from 22.5 percent in 2002 and 22.8 percent in 2001. The study also found that the 46 million adults who have quit smoking outnumber the 45 million people who continue to smoke-the second straight year this has happened. [See: <http://www.cdc.gov/mmwr>]

13. The 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 2004 Behavioral Risk Factor Surveillance System (BRFSS) data and prevalence tables. The BRFSS is a unique, State-based surveillance system active in all 50 states, the District of Columbia, Puerto Rico, the Virgin Islands, and Guam. Information on health risk behaviors, clinical preventive health practices, and health care access, primarily related to chronic disease and injury, is obtained from a representative sample of non-institutionalized adults, 18 years and older, in each State. The BRFSS provides flexible, timely, and ongoing data collection that allows for State-to-State and State-to-nation comparisons. State-specific data, including racial-and-ethnic-specific data from the BRFSS, provide a sound basis for developing and evaluating public health programs, including programs targeted to reduce racial and ethnic disparities in health risks. The BRFSS is the largest telephone-based surveillance system in the world, with 303,821 interviews in 2004. [The 2004 BRFSS data and prevalence tables are located at <http://www.cdc.gov/brfss>; Contact: Lina Balluz at lib7@cdc.gov]

14. Smoking Deaths Cost Nation \$92 Billion in Lost Productivity Annually. Smoking cost the nation about \$92 billion in the form of lost productivity in 1997-2001, up about \$10 billion from the annual mortality related productivity losses for the years 1995-1999, according to new data from the Centers for Disease Control and Prevention. The new lost productivity estimate when combined with smoking-related health-care costs, which was reported at \$75.5 billion in 1998, exceeds \$167 billion per year in the United States. The report also finds that during 1997-2001 an estimated 438,000 premature deaths occur each year as a result of smoking and

exposure to secondhand smoke. In comparison, approximately 440,000 smoking-related deaths were estimated to have occurred annually from 1995-1999. [See: <http://www.hhs.gov/news/newsletter/weekly>]

Centers for Medicare and Medicaid Services

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

15. Emergency Health Services for Undocumented Aliens: Section 1011 of the Medicare Modernization Act. Overview: Undocumented aliens' use of medical services has been a long-standing issue for hospitals, particularly among those located along the U.S.-Mexican border. As required by federal law (The Emergency Medical Treatment and Labor Act or EMTALA), hospitals participating in Medicare must medically screen all persons seeking emergency care and provide the treatment necessary to stabilize those who have an emergency condition, regardless of payment method or insurance status. In an effort to assist hospitals and other providers with their uncompensated care costs, Congress included a provision in the Medicare Modernization Act (MMA)-Section 1011-to set aside \$1 billion through 2008 to help hospitals and other emergency providers recoup some of the expenses of providing this critical care.

Food and Drug Administration

<http://www.fda.gov>

16. Effective January 27, 2005, The Food and Drug Administration (FDA) is announcing the issuance of an **Emergency Use Authorization for Anthrax Vaccine Adsorbed (AVA)** for prevention of inhalation anthrax for individuals between 18 and 65 years of age who are deemed by the Department of Defense (DOD) to be at heightened risk of exposure due to attack with anthrax. FDA is issuing this Authorization under the Federal Food, Drug, and Cosmetic Act (the act), as requested by DOD. The Authorization contains, among other things, conditions on the emergency use of AVA. The Authorization follows the determination by DOD that there is a significant potential for a military emergency involving a heightened risk to U.S. military forces of attack with anthrax.

Health Resources and Services Administration

<http://www.hrsa.gov>

17. Bureau of Primary Health Care: **U.S.-Mexico Border Health.** The U.S.-Mexico border region is 2,000 miles

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long, stretching from San Ysidro, California, to Brownsville, Texas, and extending 62 miles north of the border in to the U.S. This border is approximately half the length of the U.S.-Canada border, and represents the distance from Washington, DC, to Phoenix, Arizona, in direct miles.

The border area consists of 48 counties in four states. Some of the poorest counties in the United States are located in this border area. More than a third of U.S. border families live at or below the poverty line. An estimated 350,000 people live in colonias, which are un-zoned, semi-rural communities without access to public drinking water or wastewater systems. Also, the unemployment rate along the border is 250-300 percent higher than in the rest of the country.

Residents living along the U.S.-Mexico Border experience greater rates of communicable illnesses such as tuberculosis and vaccine preventable illnesses than other groups of people across the Nation. High rates of hepatitis and other intestinal infections, due to a lack of clean water and proper sewage disposal, are also a concern. Frequent movement between both countries and within the U.S. compromises continuity of health care for residents of this area. Additionally, the four States in the border area have some of the highest rates of poverty, unemployment, and uninsured people in the Nation [<http://bphc.hrsa.gov/bphc/borderhealth/Default.htm>].

Indian Health Service

<http://www.ihs.gov>

18. The Indian Health Service (IHS) sponsored a June 27-July 1, 2005 Technology Conference, in Scottsdale, AZ. [<http://www.ihs.gov/AdminMngrResources/techconf/index.cfm>; Contact: Bruce.Parker@ihs.gov;]. Also, the IHS held a grand opening ceremony May 13, 2005, for the new Idabel Indian Health Care Center in Idabel, Oklahoma. The new health care center will serve over 7,500 members of the Choctaw Nation of Oklahoma and other tribal members living in McCurtain County.

National Institutes of Health

<http://www.nih.gov>

19. The workshop “**The Crossroads of GIS and Health Information: Moving Ahead to Improve Cancer Control**” took place June 16-17, 2005, in Bethesda, MD. The workshop focused on the following areas regarding the crossroads of GIS and Health Information: **Data.**

What additional data are needed, e.g., cancer risk factors, stage of cancer, selected Medicare data, patterns of care data, medical facilities data, environmental pollutants, local data to measure the need for and effect of cancer control interventions? Confidentiality policies are a barrier to obtaining needed data for cancer control planners. How can we increase the use of local data while adhering to confidentiality policies?; **Shared Resources.** What computer-based tools are needed? (e.g., to convert aggregated data from one scale to another, to examine health care availability, to provide interactive mapping capability to a less technical audience); How can recent developments in computer systems, e.g., geodatabase storage and retrieval, web-based mapping services, be applied to address these needs? What other types of resources are needed? (e.g., can the National Library of Medicine help move the area of GIS and health forward by expanding its journal coverage, providing indexing services, hosting an electronic GIS bibliographic database, developing online training modules, define "best practices"?); **Collaboration.** How can we collaborate across agencies and/or between federal/state/local partners to address some of these needs in a more efficient and effective way? What can we do collaboratively that none of us can afford to do individually? The keynote speaker was Bill Davenport, ESRI. This meeting was a joint project between the Division of Cancer Control and Population Sciences, National Cancer Institute, and the National Library of Medicine. [See: <http://www.scgcorp.com/gismeeeting/agenda.htm>]

Substance Abuse and Mental Health Services Administration

<http://www.samhsa.gov>

20. **Data on Drug Deaths in 32 Cities and Six States Released.** The Substance Abuse and Mental Health Services Administration (SAMHSA) unveiled findings on drug-related mortality from the 2003 Drug Abuse Warning Network (DAWN) that provide a picture of deaths involving recent drug use in six states and 32 metropolitan areas. Among the metropolitan areas, Baltimore and Albuquerque had the highest rates of drug misuse deaths, exceeding 200 deaths per one million population. Another 14 areas had drug misuse death rates that exceeded 100 deaths per one million population.

The DAWN mortality data indicate that the typical drug misuse death involves multiple drugs, an

average of 2.7 drugs per case. Opiates, which include prescription pain relievers and heroin, were found more often than any other type of drug in 29 of the 32 metropolitan areas and all of the six states. Cocaine was the most frequently reported drug in three metropolitan areas and was in the top five drugs in 28 metropolitan areas and all six states. Alcohol was one of the five most common drugs in 30 of the 32 metropolitan areas and five of six states. [See full report at following website: http://www.samhsa.gov/news/newsreleases/050606DAWN_mortality_%202003.htm]

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.hnip.net>]

21. Regional and Racial Differences in Prevalence of Stroke- 23 States and District of Columbia, 2003.

Higher stroke mortality in the United States has long been evidenced among blacks and residents of southeastern states. A greater proportion of blacks live in the southeastern states that make up the so-called stroke belt than elsewhere in the country; however, variations in socioeconomic characteristics and risk factors have also been associated with disparities in stroke, and these variations have been associated with region and race. To more closely examine these associations, CDC analyzed data from the **2003 Behavioral Risk Factor Surveillance System (BRFSS) survey**. This report describes the results of that analysis, which indicated that although the prevalence of stroke was higher in 10 southeastern states than in 13 other states and the District of Columbia (DC) and higher among blacks than among whites, differences in education level and certain risk factors (i.e., having diabetes or high blood pressure, smoking, and not having health-care coverage) might account for most of the differences in stroke prevalence by region and race. These findings reinforce the importance of primary and secondary prevention of known risk factors for stroke. [See: CDC's *MMWR*, Vol. 54(19), May 20, 2005, found at the following CDC website: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5419a3.htm>]

22. Blood Lead Levels-United States, 1999-2002.

Adverse health effects caused by lead exposure include intellectual and behavioral deficits in children and

hypertension and kidney disease in adults. Exposure to lead is an important public health problem, particularly for young children. Eliminating blood lead levels (BLLs) >10 µg/dL in children is one of the national health objectives for 2010 (Objective No. 8-11). Findings of National Health and Nutrition Examination Surveys (NHANES) from the period 1976-1980 to 1991-1994 reveal a steep decline (from 77.8% to 4.4%) in the percentage of children aged 1-5 years with BLLs >10 µg/dL. However, BLLs remain higher for certain populations, especially children in minority populations, children from low-income families, and children who live in older homes. This report updates estimates of BLLs in the U.S. population with the latest NHANES data, collected during 1999-2002. The findings indicated that BLLs continued to decrease in all age groups and racial/ethnic populations. During 1999-2002, the overall prevalence of elevated BLLs for the U.S. population aged >1 year was 0.7%. BLLs in non-Hispanic black children remained higher than in non-Hispanic white or Mexican-American children, although the proportion of BLLs >10 µg/dL in this population decreased (72%) since 1991-1994. Approximately 310,000 children aged 1-5 years remained at risk for exposure to harmful lead levels. Public health agencies should continue efforts to eliminate or control sources of lead, screen persons at highest risk for exposure, and provide timely medical and environmental interventions for those identified with elevated BLLs. [See full report at the following CDC website: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5420a5.htm>]

23. Racial/Ethnic Disparities in Infant Mortality-United States, 1995-2002.

A national health objective for the year 2000 was to reduce the infant mortality rate (IMR) in the United States to 7.0 deaths per 1,000 live births among infants aged <1 year. The national health objective for 2010 targets a rate of 4.5 infant deaths per 1,000 live births; an overarching goal calls for eliminating disparities among racial and ethnic populations. To examine racial and ethnic disparities in IMRs, data were analyzed from the National Vital Statistics System for the period 1995-2002. IMRs were calculated by race/ethnicity of the mother in each of the 50 states and the District of Columbia (DC). During 1995-2002, the overall IMR in the United States declined from 7.6 infant deaths per 1,000 live births in 1995 to 6.8 in 2001, and then increased to 7.0 in 2002. On the basis of data for 1995-2002 combined, the target of 4.5 infant

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deaths per 1,000 live births had been achieved by few racial/ethnic populations in few states. To reach the target in all racial/ethnic populations, strategies should identify and address those factors that contribute to high IMRs and disparities among populations. [TJ Mathews and KG Keppel, National Center for Health Statistics, CDC, *MMWR* Weekly 54(22); [See infant mortality report at following website: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5422a1.htm>]

24. Annual HBCU Summer Faculty GIS Workshop, June 27-30, 2005. This year's **22nd Annual HBCU Summer**



[Photo: **Pamela Bingham**, GIS Workshop Coordinator, Howard Urban Environment Institute and President of Bingham Consulting Services; **Peggy Berry**, Director, Howard University Continuing Education; **Amdr. Leonard Spearman**, Former Executive Director, White House Initiative on HBCU's (Historically Black Colleges and Universities); **Michael Sherman**, Director of Technology, National Capital Planning Commission, Washington, D.C.;

Faculty GIS Workshop was held at the National Capital Planning Commission's advanced GIS facilities in Washington D.C. and provided basic training needed to utilize GIS in the academic environment for teaching, analysis and research. Over 20 plus years ago, the U.S. Geological Survey with the National Parks Service began a summer workshop to train less than a dozen HBCU faculty in GIS.

Since 1999, staff at the Howard University Continuing Education's Urban Environment Institute have expanded the workshop with funding from government agencies and private sector partners. Over the years, more than 100 faculty from HBCUs have received GIS training in this program. More than a third of all HBCU's have had faculty trained. Participants leave excited about the many uses and benefits of GIS training which they, in turn, impart to their respective students. [Contact: Pamela Bingham, GIS Workshop Coordinator, Howard University Continuing Education at the following, Environmentally1@aol.com; Editor: I want to personally share with our CDC Public Health GIS Users a recent honor I received at this years' HBCU GIS workshop reception. The award reads "In recognition of your extraordinary commitment to communication in the GIS field and contributions to GIS at

HBCU's." With appreciation to all, Chuck Croner]

25. From the Population Association of America: A conference focusing on the health of aging Latinos in the Americas will be held in Austin, Texas, at The University of Texas at Austin's Lyndon B. Johnson School of Public Affairs on September 21-22, 2005. The event is called "**The Second Conference on Aging in the Americas: Key Issues in Hispanic Health and Health Care Policy Research.**" This second conference will analyze the consequences of various population processes, including international migration, behavioral aspects of mental health, and the formulation of U.S. and Latin American old-age policies. Topics will include health along the Texas-Mexico border, health consequences of Hispanic mortality, the economics of Hispanic aging, health insurance, and access to acute and long-term care services. [See: <http://www.pop.psu.edu/cpha/saia>]

D. Other Related Agency or GIS News

26. The Open Geospatial Consortium, Inc (OGC) invites public comment on a candidate specification that will soon be presented for approval by OGC members as an OpenGIS(R) Implementation Specification. The OGC Document, "GML in JPEG 2000 for Geographic Imagery (GMLJP2) Implementation Specification," is available at https://portal.opengeospatial.org/files/?artifact_id=11418. Also comments can be submitted for a thirty day period ending July 27, 2005.

The Geography Markup Language (GML) is an XML grammar for the encoding of geographic information including geographic features, coverages, observations, topology, geometry, coordinate reference systems, units of measure, time, and value objects. JPEG 2000 is a wavelet based encoding for imagery that provides the ability to include XML data for description of the image within the JPEG 2000 data file. The "GML in JPEG 2000 for Geographic Imagery (GMLJP2) Implementation Specification" defines the OGC standard method of using GML within JPEG 2000 images for geographic imagery.

27. The research and development firm, BioMedware, was recently awarded a grant by the National Cancer Institute, NIH, for a pilot project to evaluate cancer clusters using case-control data and residential histories. The firm will also receive a matching award from the Michigan Economic Development Corporation

(MEDC). The project, entitled **Cancer Clustering for Residential Histories**, will develop new approaches for evaluating cancer clusters in case-control data that account for residential histories, or the different locations an individual has occupied prior to diagnosis. Because humans are mobile, these new methods are a significant advance over approaches that rely only on place of residence at time of diagnosis or death. Software to be developed in this project will provide a more accurate description of clustering of cancer cases because it will account for residential histories, cancer latency, time of diagnosis, and the exposure windows during which causative exposures occurred. [Contact: Laura Jacquez, at ljacquez@biomedware.com]

III. GIS Outreach

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

From **David Broudy**, New Mexico Department of Health: I'm considering proposing a GIS seminar or workshop as an elective for master of public health students. Are such courses being offered in Schools of Public Health? Does anyone have syllabi to share? Do you have recommendations for texts or readings? How has *GIS and Public Health* (2002) by Cromley and McLafferty been received? Are you aware of MPH programs that include GIS or spatial analysis or spatial statistics as an elective within a epi/biometry/biostatistics curriculum?

Suppose you are in the market to hire an MPH level analyst or epidemiologist. What are the most important GIS knowledge, skills, and abilities? Would you look for someone who is knowledgeable about GIS and can talk to or direct a GIS technician or geographer? Or would you expect to find an epidemiologist with a full range of GIS technical skills? Would you pay a premium for an epidemiologist with good GIS skills? [Contact: David, Epidemiologist, at david.broudy@doh.state.nm.us]

From Randy Fusaro, The Census Bureau: **Internal Metadata Repositories**. The Census Bureau currently is defining high level requirements for a Geospatial Product Metadata System that will create FGDC compliant metadata for geospatial products, will verify that mandated items are reported, store the metadata in a repository that can be queried, and output metadata in product formats (such as the harvestable format for the Geospatial One-Stop or GOS). Our current method for

metadata creation for products is very time and labor intensive. I would be interested in speaking with any of you that have a system and can give us some insight so as to avoid reinventing the wheel and running into common pitfalls.

We already have defined a Geospatial Product Metadata Standard, with 5 profiles for different types of geospatial products (i.e. vector files, tabular, etc.) that identify the elements required for those products. We do envision using an XML input on the front end, and because of our site license, Oracle for the repository. We really have no other pieces identified as clearly and are open to suggestions and ideas as far as what you know works and what you know doesn't. [Contact: Randy, Chief, National Geographic Partnerships Team, Geography Division at Randy.J.Fusaro@census.gov]

IV. Public Health GIS Presentations and Literature NCHS/CDC Cartography and GIS Guest Lecture

Notice: The guest lecture series will resume in the **Fall, 2005**, following a brief summer break. The next in this series will be announced in the September 2005 edition, CDC's *Public Health GIS News and Information*.

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

(1) Emerging Infectious Diseases

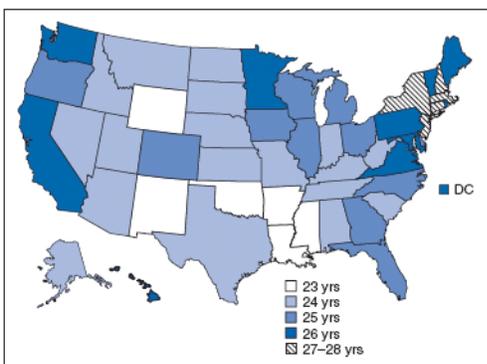
Emerging Infectious Diseases (EID) is indexed in Index Medicus/Medline, Current Contents, Excerpta Medica, and other databases. EID is part of CDC's plan for combating emerging infectious diseases; one of the main goals of CDC's plan is to enhance communication of public health information about emerging diseases so that prevention measures can be implemented without delay. The July 2005 11(7) edition of EID is now online. This edition is devoted mainly to articles on foodborne, vectorborne and other virus disease outbreaks. [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(27)**- West Nile Virus Activity, United States, 2005; Vol. **54(26)**- Assessment

of Local Health Department Smoking Policies, North Carolina, July-August 2003; Enhanced CDC Public Health Image Library Available Online; Vol. **54(25)**-Annual Smoking-Attributable Mortality, Years of Potential Life Lost, and Productivity Losses United States, 1997-2001; Heat-Related Mortality, Arizona, 1993-2002, and United States, 1979-2002; Beginning and Intermediate/Advanced Courses in Epi Info; Vol. **54(22)**-Racial/Ethnic Disparities in Infant Mortality, United States, 1995-2002; Vol. **54(21)**- Human Exposure to Mosquito-Control Pesticides, Mississippi, North Carolina, and Virginia, 2002 and 2003; Vol. **54(20)** Cigarette Smoking Among Adults, United States, 2003; QuickStats: Percentage of Adults Aged 18-24 Years Who Have Never Smoked Cigarettes, by Sex and Race/Ethnicity, United States, 2002-2003; Blood Lead Levels, United States, 1999-2002; Vol. **54(19)**- Regional and Racial Differences in Prevalence of Stroke, 23 States and District of Columbia, 2003; QuickStats: Average Age of Mothers at First Birth, by State, United States, 2002 (see map); Vol. **52(54)**-Summary of Notifiable

Average Age of Mothers at First Birth, by State — United States, 2002



The average age of mothers at first birth increased steadily during the preceding 30 years, to 25.1 year in 2002, an all-time high for the nation. In 2002, by state, the average age of mothers at first birth ranged from 23 years to 28 years. Mothers living in northeastern states were the oldest at first birth; mother living in Arkansas, Louisiana, Mississippi, New Mexico, Oklahoma, and Wyoming were the youngest. Additional information is available at http://www.cdc.gov/nchs/data/nvsr/nvsr52/nvsr52_19acc.pdf.

SOURCE: National Vital Statistics System, annual file; 2003. Available at <http://www.cdc.gov/nchs/births.htm>

Diseases, 2003. The Summary of Notifiable Diseases, United States, 2003 contains the official statistics, in tabular and graphic form, for the reported occurrence of nationally notifiable diseases in the United States for 2003. The data are final totals for 2002 reported as of June 30, 2004, unless otherwise noted. These statistics are collected and compiled from reports sent by state health departments to the National Notifiable Diseases

Surveillance System (NNDSS), which is operated by CDC in collaboration with the Council of State and Territorial Epidemiologists (CSTE). Vol. **54(18)**-Assessment of Epidemiologic Capacity in State and Territorial Health Departments, United States, 2004; Brief Report: Terrorism and Emergency Preparedness in State and Territorial Public Health Departments, United States, 2004; Improvement in Local Public Health Preparedness and Response Capacity, Kansas, 2002-2003; Vol. **54(17)**- QuickStats: Percentage of Children Aged <18 Years Who Regularly Took Prescription Medication, by Health Insurance Coverage Status: United States, 2003; Fourth Annual Conference on Public Health Law.

(3) Preventing Chronic Disease

The **July 2005 2(3)** issue of *Preventing Chronic Disease* (PCD) is online and contains selected articles on a variety of chronic disease and prevention topics: arthritis, elderly eye diseases, cancer registries, heart disease, and others. [See: <http://www.cdc.gov/pcd/issues/2005/jan/toc.htm>]

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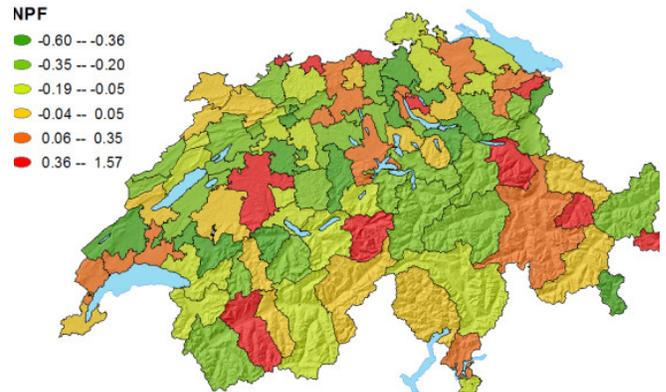
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A flexibly shaped spatial scan statistic for detecting clusters, Tango T and Takahashi K [includes sample maps] *Int J Health Geogr* 4(11) MAY 2005;

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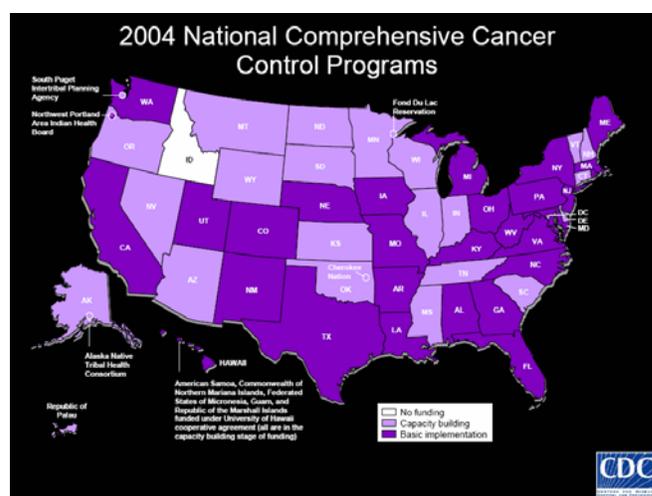
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The web site with Power Point slides from the 2005 National Cancer Prevention and Control Annual meeting (Atlanta May 2-6, 2005) is still in the process of development but several presentations are available. The map of 2004 National Comprehensive Cancer Control Programs is taken from the presentation "A Model GIS/Atlas for State Comprehensive Cancer Control," by Eugene Lengerich, Penn State College of Medicine, Pennsylvania State University ["Basic Implementation" indicates states in the color deep purple, "Capacity Building" in light purple, and "No Funding" in white]



The meeting program book included a section where each state cancer central registry had provided a one-page summary of information about current activities and/or desired future planned enhancements. States that specifically mentioned GIS related activities follow (Note: This list should not be viewed as a completed "inventory"; some states have GIS activities-but did not mention these activities on the one page summary for this meeting).

State GIS Activities. Alabama- working on MedStat project in collaboration with NCI (profiles of communities at high risk for cancer). A key component of the project is to analyze geo-coded demographic, health status, health services utilization, and lifestyle data such as media preferences and consumer behavior; Arizona- developed Community Health Analysis Areas to represent the communities of Arizona; Arkansas- interested in GIS activities; Florida- Cluster Response Inquiry System (in testing phase); Idaho- helped NAACCR GIS Work Group develop "Distance Calculator" SAS code for great circle distance between

Special Report

National Cancer Prevention and Control Presentations on Web

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locations of cases at the time of diagnosis and the locations of treatment facilities; Illinois- Activities of interest include "cancer clusters"; Indiana- developed a Cancer Incidence Monitoring system utilizing GIS technology; Missouri- expansion of geocoding activities; Nebraska- increase geocoding from current 66% to 100% on an ongoing basis by mid-2005; North Carolina- participates in about 10 rapid case ascertainment studies per year. Desired enhancement: improve geoprocessing and storing address data to facilitate responses to increased requests for cancer cluster investigations; Oklahoma- geo-coding of all data from 1997-2002 and using GIS data for cancer investigation and planning; Oregon- participating in a county community health information mapping engine system. Cancer data was incorporated into Web-based geographic information software tool which will enable the county to identify geographic areas within the county where people are more likely to have specific types of cancer identified at late stage. Once the characteristics of the communities at risk are identified, cancer prevention and intervention activities/programs can be planned and implemented; South Carolina- GIS procedures to standardize and verify ZIP Code for community cancer assessments and quality assurance of county assignments for rate calculations; South Dakota- fill in the census tracts on all data; Vermont- geocode 2003 data for the first time, train new staff in GIS, and complete at least one mapping project this year. [See: <http://www.psava.com/dcpc2005/handout.asp>]

New Children's Health Study

The National Children's Study

The **National Children's Study** (NCS) will examine the effects of environmental influences on the health and development of more than 100,000 children across the United States, following them from before birth until age 21. The goal of the study is to improve the health and well-being of children. The study defines "environment" broadly and will take a number of issues into account, including: natural and man-made environment factors; biological and chemical factors; physical surroundings; social factors; behavioral influences and outcomes; genetics; cultural and family influences and differences; and, geographic locations.

Unlike other studies that are trying to answer a single question related to health and development, the NCS addresses multiple questions on multiple issues, to provide as much information as possible on health and

development. Some example questions are: Can very early exposure to some allergens actually help children remain asthma-free?; How do genes and the environment interact to promote or prevent violent behavior in teenagers?; Are lack of exercise and poor diet the only reasons why many children are overweight?; Do infections impact developmental progress, asthma, obesity, and heart disease?; How do city and neighborhood planning and construction encourage or discourage injuries?

Even though the study will span more than 20 years, the world won't have to wait until after 2025 for results. NCS researchers will begin to analyze information as soon as it is collected. As the children enrolled in the study reach certain developmental milestones, the NCS will release its findings on these milestones. These results may lead to new questions about children's health and the environment that can be answered later in the course of the study.

This study is led by a consortium of federal agency partners: the U.S. Department of Health and Human Services, including NIH, CDC, and the U.S. Environmental Protection Agency. Congress authorized the planning and implementation of the National Children's Study with the Children's Health Act of 2000 (Public Law 106-310 Sec. 1004), and over the past four years HHS and EPA have carried out the necessary planning for the study. While a great deal of planning has been done and the Coordinating and Initial Vanguard Centers are being established in 2005, funds for full implementation of the study are not appropriated or currently included in the budget. [See study details at website: <http://nationalchildrensstudy.gov>]

New GIS Resource

A GeoPrimer:

Environmental Public Health Tracking

[Version 1.0- Prepared by the Geography and Locational Referencing Subgroup of the Standards and Network Development Workgroup of the Environmental Health Tracking Program, March 2005] This primer is meant to be a resource for the managers of the Environmental Public Health Tracking (EPHT) projects throughout the United States. It is expected that managers would provide the GeoPrimer to their Information Services technical staff as the planning for the local EPHT project is underway. This GeoPrimer does not replace the many fine technical documents about GIS; rather the intent with the primer is

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to provide material that would become a common language for communicating the needs and functions of GIS in the Environmental Public Health Tracking project.

Contents. *1.0 Introduction-* 1.1 How to use this document; 1.2 Background; *2.0 Basic Concepts and Terminology-* 2.1 What are geographic data?; 2.2 What are geographically referenced data?; 2.3 What is a geographic information system (GIS)?; 2.4 What is GIS for?; 2.5 Who uses GIS?; 2.6 Commonly used terms; *3.0 Environmental Public Health Tracking and Geospatial Analysis-* 3.1 Accurately locating environmental and health data; 3.2 Geocoding; 3.2.1 Basic Concepts; 3.2.2 Common Errors; 3.2.3 Centralized Geocoding Services; 3.3 Geospatial analysis; 3.4 Geospatial display (maps); *4.0 An Example of Geospatial Analysis-* Geospatial analysis of birth outcomes and asthma incidence data with respect to traffic volume metrics in Alameda County, California; *5.0 Effective Use of Geospatial Data and Technologies-* 5.1 Steps for implementing geospatial technologies; 5.2 Standards; 5.3 Collaboration and access to data; 5.4 Additional information. [Contacts: Lesliann Helmus, Surveillance Chief, Division of Surveillance and Investigation Virginia State Department of Health at the following, lesliann.helmus@vdh.virginia.gov or Judy Qualters, CDC Environmental Health Tracking Program, at the following, JQualters@cdc.gov; also, this document will be posted in the future at <http://www.cdc.gov/nceh/tracking>]

Special Report

The Coming Revolution in "Academic GIS"

Mark Reichardt, President, Open Geospatial Consortium
President's Message (May 2005)

First there were maps, then there was GIS, now there is the evolving Spatial Web. Part of the Spatial Web is a growing global online library of spatial information and services that teachers, students and researchers can use to publish, find and apply spatial data. This on-line data and service resource is a fresh breeze blowing through the computer rooms and GIS labs where students are often left to continually re-process old data sets in support of their studies in geomatics, statistics, urban planning and related disciplines. Many of those students will graduate into a working world of rich, geospatial Web services. Hopefully they will have some preparation. But, providing access to a distributed archive of geodata stores and geoprocessing services is not just about preparing students for the future. It is a matter of moving science into the Internet Age.

Getting more value from data. The Internet is very much a child of science, but consider the progress we are not yet realizing in many academic settings.

Science depends on shared data and research transparency. Scientists generate huge amounts of data in their research. Rarely is anything published except the research results and conclusions, including statistical summaries of their data. In the Internet Age, there are strong arguments for providing access to intermediate data and associated analyses online with full metadata so that others asking similar or different questions might benefit from the collected data. These may comprise map layers, geographic features, gridded coverages or other geospatial bits and pieces that are secondary to the original inquiry. Preparing the community to be able to discover and apply these nuggets of valuable information is an important goal. There are no doubt challenging policy issues involved in sharing of intermediate data and analysis, but nevertheless the ability to more readily discover and apply this information to other research is an inviting proposition.

Many geographic studies are worth repeating at intervals to understand what is studied with respect to change-that is, undertaking longitudinal studies in which methods are rigorously the same over time. This would be supported by making data and metadata-including acquisition and processing methods-accessible and discoverable via a public catalog, and employing Web services to discover, view, access and process them.

Furthermore, online, standards-based Web service access to geospatial data, metadata, schemas, and catalogs will support a heightened level of inter-institutional and interdisciplinary collaboration. Those who collaborate now using a common proprietary platform already enjoy some of this benefit. These believers in digital sharing need to consider how much more they could do if the open, global, spatially-enabled Web were their platform for collaboration. By connecting to a larger and more dynamic network, they would boost their contribution to science, and also their contribution to policy, education, public awareness and environmental management.

Geospatial standards aid scientific verification. A number of our university colleagues have noted the importance of interoperability in assuring repeatability and verification of results obtained using GIS. That is, GIS needs improvement with respect to rigorous application of the scientific method. Open interfaces (and perhaps also open algorithms) are a necessary part of this progress. Geographers would

benefit from a consensus process to discuss, develop and characterize interfaces and algorithms relevant to common areas of geographic inquiry.

Sharing data models and application schemas.

Researchers and practitioners in many fields would also benefit from a Web-mediated consensus process to develop essential shared data models and application schemas. Consider the importance, for example, of consistent technique in water quality testing and reporting, and imagine this body of technique documented as a spatial data model. Every scientific Information Community that uses spatial data could benefit from a portal for efficient data model management and for discovery and use of data in their domain. This type of consensus process, and tools to facilitate it, have already been established in national and international framework data coordination efforts.

Sensor web advances. Take one more step and imagine online, automated water quality sensors and other kinds of sensor networks. The OGC Sensor Web Enablement (SWE) initiative can be an extraordinary boon to scientific research and an agent for "spatially enabling" many research areas that previously have not been amenable to complex spatial analysis. A critical OGC specification for the research community is Observations and Measurements. O&M is a robust, universal XML encoding for virtually any kind of observation and measurement related to environmental, agricultural or earth science data. What an extraordinary tool for the advancement of science!

The academic bottom line. If this idealistic appeal to the advancement and fruitful application of science isn't persuasive, look again at the bottom line. Academic departments will get more geospatial benefits for less money with Web services, and their students will have many new opportunities for study and research, and new career paths as well. Making spatial capabilities available to every computer user creates additional demand for geoprocessing expertise. It also creates more awareness of the importance of looking at problems from a geographic perspective, and the importance of geospatial rigor, which is good for geography departments. And faculty and students who participate in the development of the specifications that underlie the capabilities incompletely described above will be advancing their careers by working at a key frontier in geospatial technology. [See OGC News and archives at: <http://www.opengeospatial.org/press/?page=newsletter>]

Special Report

Public Health Practice vs. Research: A Report for Public Health Practitioners Including Cases and Guidance for Making Distinctions, CSTE Advisory Committee Report, May 24, 2004. This report has been prepared with funding and personnel support from the Council of State and Territorial Epidemiologists (CSTE) in Atlanta, Georgia. The purpose of this report is to provide a practical guide principally for state and local public health officials, their staff, and their partners on the distinctions between public health practice and research for activities carried out by, or under the authority of, state or local health departments. The report may also be helpful to federal government public health officials and public and private sector institutional review board (IRB) members and their staff considering similar issues in reviewing or approving research proposals. Furthermore, law- and policymakers, covered entities under the HIPAA Privacy Rule (e.g., health care providers, insurers, and data clearinghouses), academics, and others may utilize the report to improve their understanding of the distinctions between public health practice and research. The report draws heavily from existing legal, public health, and medical scholarship. However, its tone is decidedly practical. Though these issues can be legally complex, the report attempts to explain the issues for the layperson. As such, it does not provide specific legal advice, and should not be relied upon for this purpose. [See report at following CDC website: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5421a7.htm>]

**V. Related Census, HHS, FGDC and Other
Federal/State Developments
NASA Science Mission Directorate:
Applied Sciences Program**

Public Health Program Element Plan: FY 2005-2009

The Public Health Program Element is managed in accordance with, and guided by, the NASA Strategic Plan and Earth Science Enterprise Strategy. The program element benefits from Earth-Sun system science results and capabilities including Operation System Simulation Experiments (OSSEs), Project Columbia, the Joint Center for Satellite Data Assimilation (JCSDA), the Earth-Sun System Gateway (ESG), and the Transition from Research to Operations (R2O). The program element utilizes initiatives such as the Global Information Grid (GIG) and Federal Enterprise Architecture (FEA) and

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cooperates with national Earth-Sun laboratories and international programs.

Priority Earth-Sun science measurements for the Public Health Program include those derived from sensors on: Aura, Terra, Aqua, EO-1, Landsat 7, TOMS-EP, SRTM, and SeaWiFS. NASA research has meaningful information on environmental factors associated with disease phenomena. The project plans associated with the Public Health Program identify specific sensors, measurements, and models, and state specific activities with the partners to extend Earth-Sun science results. The Public Health Program foci of partnerships with the public health practice community are their decision support systems known as Epidemiologic Surveillance Systems in the areas of infectious disease, environmental health and bioterrorism.

ArboNET/Plague Surveillance System. The focus of this project is to evaluate, verify, validate, and benchmark Earth-Sun system science observations and models as indication and warning tools (I&Ws) within the ArboNET/plague surveillance system (PSS) of the Centers for Disease Control and Prevention (CDC). Also, the increased spatio-temporal resolution of these environmental I&Ws is expected to greatly enhance the performance and timeliness of the ArboNET PSS. Goddard Space Flight Center Project Plan: FY2005-FY2008.

Plague prevention and response efforts are underway at regional, state and local levels through the CCD-sponsored PSS. ArboNET is a passive surveillance system managed by the division of vectorborne infectious diseases at CDC to collect and archive data to study and operationally monitor regional and national arthropod-borne viral disease trends. The CDC, participating health departments, Department of Defense (DOD) and the US Geological Survey (USGS) are primary users of ArboNET. A basic understanding of the area's landscape ecology is useful for predicting the future course of epizootics and identifying areas of high risk for humans. Information should be collected on predominant vegetation types and the amount of local land surface covered by each vegetation type, roads, railways, airports and seaports, land use patterns (agricultural, residential, industrial, other), types of dwellings present and whether these dwellings and associated food storage areas or other man-made sites provide food and harbor for rodents. The

incorporation of Earth-Sun system science satellite observations and model predictions into the ArboNET/PSS is intended to improve their accuracy with regard to spatial and temporal dimensions of plague vector habitats. This improvement is designed to enhance the "representativeness" attribute of PSS.

In response to this need for more spatially and temporally complete information, CDC has partnered with NASA to explore the use of remote sensing products and to employ different remote sensing models and techniques. A few pilot studies are now underway in certain regions of New Mexico, Arizona, and Colorado (four corners states) to evaluate, verify and validate a remote sensing prototype NASA product that uses satellite datasets and models compiled by the Global Inventory Mapping and Monitoring Studies (GIMMS) group at NASA/GSFC. The data set includes products from the AVHRR instrument on six NOAA platforms, from the MODIS sensors aboard the EOS Terra and Aqua Satellites, LandSAT TM data, Shuttle Radar Topography Mission (SRTM), and Tropical Rainfall Measuring Mission (TRMM), among other remote sensing platforms provided by NASA and NOAA. A crucial and unique feature of the compiled data set is that NDVI data parameters have been intercalibrated from the AVHRR, SPOT Vegetation, and MODIS instruments. Thus, should one or more of the NDVI-providing instruments fail, we can switch to another source of NDVI and/or thermal data. Furthermore, because we have intercalibrated the AVHRR NDVI time history back to 1981, we can use a 24- year global NDVI time series to provide environmental indications of past potential epidemics and to understand the severity of the outbreak vis-à-vis the historical record back to July 1981. In fact, by comparing proxy vegetation response patterns, as detected by the intercalibrated remotely sensed NDVI, a model has been developed by the GIMMS group to provide a set of indications and warnings that reveal unusual climatic conditions associated temporally and spatially with trigger points of infectious and vector-borne diseases such as ebola, rift valley fever, and plague epidemics. [See: NASA's Earth Science Applications Implementation Working Group (AIWG) public health projects and detailed plans at <http://aiwg.gsfc.nasa.gov/dss.html>]

USDA Service Center Agencies Geographic Information Systems

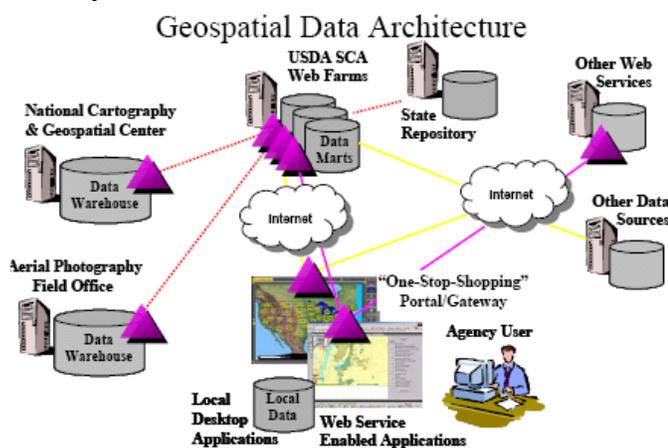
The USDA Service Center Agencies including Farm

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Service Agency, Natural Resources Conservation Service, Rural Housing Service, Rural Utilities Service, Rural Business and Cooperative Service and Office of Community Development are implementing a **shared Geographic Information System** in over 3,000 county, state and center offices. This implementation of shared hardware, software, data and training by dedicated cross-agency teams is enabling these agencies to make major improvements in the products and services we deliver to our customers. These agencies are partnering extensively with other federal, state and local agencies and private industry.



[The USDA GIS Implementation Plan, and supporting documentations, are accessible at the following USDA website: <http://www.gis.sc.gov.usda.gov/reference/index.html>]

Staying Current with The American Community Survey

As many are learning, the American Community Survey (ACS) is a new nationwide survey designed to provide communities a fresh look at how they are changing. It is intended to eliminate the need for the long form in the 2010 Census. The ACS will collect information from U.S. households similar to what was collected on the Census 2000 long form, such as income, commute time to work, home value, veteran status, and other important data. As with the official U.S. census, information about individuals will remain confidential.

Three Million Households to be Surveyed. The ACS will collect and produce population and housing information every year instead of every ten years. About three million households will be surveyed each year. Collecting data every year will reduce the cost of the official decennial census, and will provide more up-to-

date information throughout the decade about trends in the U.S. population at the local community level. A similar program is planned for Puerto Rico.

Expanding Local Coverage. The ACS began in 1996 and has expanded each subsequent year. Data currently are available for 800 local areas, including 241 counties, 206 congressional districts, most metropolitan areas of 250,000 population or more, all 50 states and the District of Columbia. The Census Bureau plans to conduct the ACS in every county of the U.S., contacting the residents of three million housing units. Within three years, data should be available for all areas of 20,000 or more persons. For small areas less than 20,000, it will take five years to accumulate a large enough sample to provide estimates with accuracy similar to the decennial census. [For data access and developments, see the ACS website: <http://www.census.gov/acs/www/index.html>]

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>]

Proposal to Create Street Address Data Standards Submitted to the Federal Geographic Data Committee

(Approved April 13, 2005)

The objective of this effort by the **Urban and Regional Information Systems Association (URISA)** is to create data content, classification, transfer, and quality standards for street addresses. This work will be done under the auspices of the FGDC Subcommittee on Cultural and Demographic Data. **1. Project Title:** Street Address Data Standards; **2. Date of Proposal:** March 24, 2005; **3. Type of Standard Proposed:** Data content, classification, transfer, and quality; **4. Submitting Organization:** Urban and Regional Information Systems Association **5. Point of Contact:** Martha Lombard, mlombard@spatialfocus.com; **6. Objectives:** Creation of data content, classification, transfer, and quality

standards for street addresses. The data transfer standard will build on the Address Data Content Standard previously proposed by the FGDC (Public Review Draft, April 17, 2003). Some modifications may be proposed based on the content standard that is developed; **7. Scope:** The standard will cover physical and postal addresses; **8. Justification/Benefits:** Street addresses are the location identifiers most widely-used by state and local government and the public. Street addresses are critical information for administrative, emergency response, research, marketing, mapping, GIS, routing and navigation, and many other purposes. In sponsoring the creation of Street Address Data Standards, the FGDC has an important opportunity to fulfill to its broader mandate by convening a local, state, and federal agency forum wherein these issues can be resolved, thereby helping to make our spatial data infrastructure truly national.

Because they have evolved over many decades, under the control of thousands of local jurisdictions, in many different record and database formats, and to serve many purposes, different address formats and types pose a number of complex geoprocessing and modeling issues. As a consequence, government agencies struggle with these issues as they seek to integrate large, mission-critical files into master address repositories. URISA, with the support of the **National Emergency Number Association (NENA)**, proposes to convene a Street Address Standards Working Group that includes representatives from a range of interested federal, state, regional, and local government agencies, private-sector consultants, and professional associations.

We propose to create Street Address Data Standards that extend the work done on the FGDC's existing draft address data content standard (Public Review Draft, April 17, 2003), and: 1. Provide a substantive foundation for the data transfer standard to facilitate street address data exchange within and between federal, state, regional, local government, and nongovernmental sectors; and to offer a migration path from legacy formats to standards compliant ones; 2. Provide a statement of best practices for street address data content and classification; 3. Recognize, as a practical matter, that different users may require different levels of standardization; and, 4. Define standards and tests of street address data quality. [Contacts: Martha Lombard (cited previously) and staffer Dianne Haley at dianne.haley@gov.ab.ca]

New Homeland Security Working Group Activity on Agreements

The Homeland Security Working Group, FGDC, has formed a team to develop a single data sharing agreement template to facilitate sharing of geospatial data by all levels of government. The team will develop recommendations and procedures to enhance the sharing of geospatial data wherever and whenever there is a need. The team will gather information from April-December 2005 and hopes to have a final draft of their guidelines drafted by April 2006. [If you would like more information about this activity please contact Bill Burgess, National States Geographic Information Council (NSGIC), and NSGIC FGDC representative, at william.burgess@comcast.net]

NARA Initiatives on Geospatial Data Records

[Ken Thibodeau, Director, Electronic Records Archives Program and the National Archives and Records Administration (NARA)] NARA provides guidance to all agencies in managing their federal records, and preserves records with enduring value in the National Archives through lifecycle management. Much of the spatial data received by federal agencies qualifies as a Federal Record and should be kept as evidence of the agency's activity. Some 92% or more of Federal records can be destroyed once the agency determines it is no longer needed. NARA only keeps about 2% of Federal records-including some cartographic records related to military campaigns and Census mapping, and some digital spatial data records of the U.S. Joint Chiefs of Staff.

The Electronic and Special Media Services Division is responsible for retrieving the data into NARA and verifying the records (ensuring that the records conform to specifications) before preserving and storing them. This division will provide access to the data upon request. The first electronic records came to NARA in the 1970s and were originally stored on magnetic tape, although today the data is tarred and put on DLTs. About 30% of electronic record demand is from the federal government itself.

Preserving electronics records is challenging due to the diversity, complexity, open-ended growth, obsolescence, continuing change and durability of those records. For example-by law when a President leaves office all the records must go to NARA. Just dealing with the email messages alone can cause a challenge-there is simply too much data. The Electronics Records Archives Program will preserve and provide access to any kind of

electronic record free from dependency on any specific hardware or software. Partnerships with agencies that manage research (such as DARPA, NSF, and NIST) help NARA manage this challenge. DARPA helped develop a system independent of specific hardware-NARA has received \$100 million in funding to develop this system.

Growing Importance of 'Open Standards'

Editor: In the July *OGC News*, Mark Reichardt, President, The Open Geospatial Consortium, Inc. (OGC), makes some important points about the power and inclusivity of open standards and how these can be beneficial to even those with the least available GIS and geospatial resources. "Benefits to an enterprise that commits to implementing open standards include, among others: the ability to leverage IT investments in unforeseen ways; avoidance of further generations of closed, dead end solutions; componentization and on-demand applications; agility in choosing and deploying solutions with a lower cost of ownership; clear definition of quality criteria and a higher level of quality for products and services; objective and internationally recognized parameters and yardsticks for business activity; promotion of innovation and competition; greater legal certainty for enterprises; more open markets; and an added measure of resilience and flexibility for legacy systems."

But what about the benefits to the three-person GIS shop in a regional development office serving 15 counties that don't have GIS? Who benefits in a university with few professors and instructors teaching GIS and remote sensing? What about the town that's too small to have begun thinking about itself as "an enterprise"? Or the fire department in a city that hasn't put its data on a network yet? The answer is that open standards are ending the isolation of these "mini-enterprises." It gets easier and easier for partners to get on the Web, and when they do, the "spatial web" is ready to help them serve each other's spatial information needs.

In recent months the US Federal Geographic Data Committee (FGDC), the National Geospatial Programs Office, and the federal CIO Council's Architecture and Infrastructure Committee have been addressing the need for a common geospatial perspective among collaborating US federal and non-federal organizations. On May 2, 2005 they held the kick-off meeting for an inclusive "Geospatial Community of

Practice" [See this special report on this meeting at website: <http://colab.cim3.net/cgi-bin/wiki.pl?GeoSpatialCommunityofPractice>] whose members have begun working to integrate and promote geospatial concepts in the context of enterprise architecture practices.

A major enabling condition for this effort is the maturation of open geospatial architectures. Every local or private sector data provider or data user, whatever their software, whatever their data model, can be brought into "the enterprise" through the use of profiles of various standards. Whether the imperative is security, budget reductions or an increased need for regional planning, the previously intractable problems of integrating different geoprocessing systems and different data models are no longer intractable. The long awaited grassroots build-out of the US NSDI and other NSDIs can now accelerate." [Point of Contact: Adena Schutzberg, Editor, *OGC News* at adena@opengeospatial.org]

Web Site(s) of Interest for this Edition

<http://ehp.niehs.nih.gov/docs/2005/113-5/toc.html> **Health on the Banks of the Rio Grande.** At the New Mexico Center for Environmental Health Sciences (NMCEHS), community concerns and relationships are as much at the center's foundation as the latest research techniques. Based in Albuquerque as a partnership of The University of New Mexico Health Sciences Center and the Lovelace Respiratory Research Institute (LRRRI), the NIEHS-funded center comprises major research cores in environmental cancer and oxidative stress, cardiovascular toxicology, environmental lung disease, and population health and epidemiology. The center also includes world-class facility cores (particularly for inhalation toxicology), a pilot project program to provide funding for small innovative research studies, and an unusually strong community outreach and education program (COEP).

<http://www.natcarb.org> Project **NATCARB Carbon Cyberinfrastructure (CO2 Portal).** The *NATIONAL CARBON Sequestration Database and Geographic Information System (NATCARB)* provides national coverage across the Regional CO2 Partnerships to identify potential carbon sinks and undertake emissions analysis of the power plants in the region. It is formed through seven partnerships which comprise most of the States in the US-except for New England. This is a long-term project that is funded until 2008. The CO2 Portal

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helps combine disparate data sources, coordinating and integrating the data into one view. It characterizes major CO₂ sources (mostly power plants) and potential sequestration sites (petroleum, coal, aquifers, terrestrial). The NatCarb Browser has expanded tools, national coverage, and web based access. It's a distributed national database with data requests driven by XML. The targeted geoportal builds on Geography Network and Geospatial One-Stop. There are 120 layers of data on their website. Since it is distributed, users don't have to build or store the data. The user is able to set up bookmarks-so they can save the state and layers of interest.

<http://www.e911institute.org> The FCC or Federal Communications Commission has directed providers of IP-based communications services, commonly known as **"Voice over Internet Protocol"** or **"VoIP"** to begin providing their customers with access to 9-1-1 and E9-1-1 services. The FCC requirement will go into effect within 120 days. The Congressional E9-1-1 Caucus was formed as a joint initiative of its four co-chairs, Senators Conrad Burns (R-MT) and Hillary Clinton (D-NY) and Reps. John Shimkus (R-IL) and Anna Eshoo (D-CA) to educate lawmakers, constituents and communities about the importance of citizen-activated emergency response systems.

<http://colab.cim3.net/cgi-bin/nid2PRSNICS> **National Infrastructure for Community Statistics.** Welcome to the web page for the National Infrastructure for Community Statistics (NICS). NICS is a proposed nationwide web-based utility that facilitates access by public and private decision-makers to detailed, current community-level statistics from thousands of local, state, federal, and commercial data sources. The ability to access and analyze detailed, up-to-date sets of survey and administrative data for small areas facilitates greater understanding of community socioeconomic and geophysical conditions, trends and opportunities; more effective program and investment decisions; improved measurement of program and investment impacts; and the creation of local and national indicators efforts. In this way, community statistics have the power to inform public debate, support better public and private choices, and empower communities to adapt to accelerating socioeconomic change. [Editor: The NICS should be a key georeferenced database when completed]

<http://www.whitehouse.gov/omb/egov/documents/CRM.PDF> **Federal Enterprise Architecture Program.** The Office of Management and Budget's (OMB) Office of E-Government (E-Gov) and Information Technology (IT), with the support of the General Services Administration (GSA) and the Federal Chief Information Officers (CIO) Council, established the Federal Enterprise Architecture (FEA) Program which builds a comprehensive business-driven blueprint of the entire Federal government. The FEA Program Management Office (PMO), located within OMB's Office of E-Gov and IT, equips OMB and federal agencies with a common language and framework to describe and analyze IT investments, enhance collaboration and ultimately transform the Federal government into a citizen-centered, results-oriented, and market-based organization as set forth in the President's Management Agenda (PMA). [Contact: Doug Nebert at ddnebert@usgs.gov]

<http://www.mapdex.org/index.cfm> **MAPDEX: A Global Index of Distributed Web Map Services.** Mapdex is an index of dynamic map services (almost 1500 servers have been indexed so far). Many groups have built Clearinghouses-and MAPDEX searches all of these sources. MAPDEX uses Google to narrow down the list of map servers and stores that information in their database. Unfortunately, the 58% of mapservices that don't declare their projection are not able to be used with other data. MAPDEX doesn't provide metadata-it just shows server name and the date indexed and you can map the data.

http://www.colorado.edu/journals/cye/15_1 The new issue of **Children, Youth and Environments (CYE)**- an open-access, peer-reviewed online journal hosted by the University of Colorado- is now available. The issue features a special focus on children's environmental health. It includes papers on air pollution in developing countries, effects of chemical exposure in India, risk factors for childhood injuries in developed countries, and other aspects of young people's health and wellbeing around the world. Two research papers include neighborhood effects on adolescent health and development, and a field report on environmental justice and safe routes to school.

http://www.jdi.ucl.ac.uk/news_events/conferences/third_mapping_conference/third_nat_map_programme.php

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Slides from the **UK's 3rd National Crime Mapping Conference**, London, April 12-13, 2005, are now available. This year's conference themes included: Mapping crime in space and time; Mobile computing and crime mapping; and, New developments in Geographical Information Science.

<http://circ.rupri.org/index.asp> The Rural Policy Research Institute (RUPRI), offers an online Community Information Resources Center (CIRC) which uses spatial information to help visualize "place-based" issues impacting communities across the United States. CIRC addresses the spatial and temporal dimensions of issues impacting rural America, by incorporating Internet-based geographic information systems, remote sensing technologies, and other data visualization and analytic tools. CIRC's principle goal is to rapidly transform data

and static reports into interactive visualization and analytic tools for local decision support.

<http://www.ojp.usdoj.gov/nij/maps> The full agenda for the **8th Annual Crime Mapping Research Conference**, September 7-10, 2005 in Savannah, Georgia, is now available on the MAPS website. Special events include Pre-Conference Applied GIS workshops by Crime Mapping & Analysis Program at the NLECTC Rocky Mountain Region, an evening roundtable on Geographic Profiling Software sponsored by the NLECTC Southeast Center, a plenary session on Information-Led Policing with Crime Mapping, Opening Keynote address by U.S. Attorney (Southern District of Georgia), as well as the Annual Crime Map Competition.

Final Thoughts

11th International Medical Geography Symposium Fort Worth, TX July 5-9, 2005

I am pleased to share with you the papers presented at the recently convened 11th International Medical Geography Symposium (IMGS), conducted by the University of North Texas, in San Antonio. As you know from my prior reporting of GeoHealth 2002 and 2004, Wellington, New Zealand, these smaller international conferences offer exceptional opportunities to network and share public health and GIScience across the continents. This year's IMGS was no exception as it brought together a variety of geospatial scientists from many parts of the world. Of the more than 150 participants, about half came from outside the U.S. Of these, Canada and the United Kingdom had the largest number of representatives, respectively, but there were those from France, New Zealand, Germany, Norway, Australia, Switzerland, Ireland, Italy, Korea and Spain. Their interests ranged across the continuum of GIS and public health. It is against this backdrop you will find interesting the paper sessions, titles, authors and affiliations (for your networking interests). Conference Papers:

FOOD DESERTS AND HEALTH SYSTEMS. Karen Tomic, U Alberta, Are there food deserts in Edmonton, Alberta, Canada? A study of supermarket accessibility; Ronan Foley, Hospital reorganization and the implications for geographical accessibility in Ireland; Lisel O'Dwyer, Flinders U, Are there food deserts in Australia?; Amy Griffin, U New South Wales-ADFA, A socio-ecological classification for stratifying cities for health-environment research; Sarah Atkinson, U Manchester, The academic imagination and policy practice: approaches to study decentralisation in health systems.

HOME CARE, HEALTH SPACES AND ACCESS. Nicole Yantzi, Queen's U, Home as a place of caring: struggling to fit children's growing bodies and changing care Trajectories; Paul Boyle, U St Andrews and Paul Norman, U Manchester, Changing places and changing peoples, a longitudinal analysis of deprivation, migration and death; Ross Barnett, U Canterbury; Barriers to health equality?: Unequal utilisation of diabetes educational provision in New Zealand (NZ); Valorie Crooks, McMaster U, "Because everything changes that day; you don't do the routine": Spatio-temporal processes of preparing for and getting to the doctor's office in the lives of women living with chronic illness; Charis Keller-Lengen, U Zürich, Jörg Blasius, U Bonn and Thomas Kistemann, Institute for Hygiene and Public Health, U Bonn, Health Spaces of Switzerland.

EMERGING INFECTIOUS DISEASES. Marilyn Ruiz, U Illinois, College of Veterinary Medicine, Urban landscapes and West Nile Virus in the Upper Midwest; Thomas Kistemann, U Bonn, Cloud bursts or persistent rain? Uncovering spatial legionella seroprevalence patterns in Germany; Donald Huebner, Texas State U-San Marcos, Vibrio vulnificus bacteria as an environmental hazard; E Hanford, Texas State U- San Marcos, The need for bio-geographic research on Chagas disease in Texas; Curtis Denton and Joseph Oppong, U North Texas, Predicting prevalence of Mycobacterium ulcerans (Buruli Ulcer) in the eastern region of Ghana. Luncheon Speakers: Jonathan Mayer, U Washington, Medical Geography in the Genomic Era, Armin Mikler, U North Texas,

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Computational Epidemiology.

EMERGING ISSUES IN NEIGHBOURHOODS AND HEALTH. Discussant: Tony Gatrell, Director, Health Research Institute, Lancaster U; K. Wilson, S. Elliott*, J. Eyles*, S. Keller-Olaman**, Department of Geography, U Toronto at Mississauga, Ontario, *School of Geography and Geology, McMaster U, **Department of Public Health Sciences, U Toronto, The relational component of context: understanding the role of (perceived) neighbourhood characteristics in shaping health and well-being; Dana Wilson, Nancy Ross, Jason Gilliland*, Department of Geography, McGill U, *Department of Geography, U Western Ontario, Neighbourhood Contexts and Opportunities for Youth Gambling in Montréal, Québec; Robin Haynes, School of Environmental Sciences, U East Anglia, Identifying neighbourhoods in studies of injuries to children.

GEOGRAPHIES OF HEALTH RISK, PROTECTION AND RESILIENCE. Emmanuel Eliot, CNRS/U Du Havre, Circulation of risk: case study on the HIV/AIDS epidemic in India; James Fagg, Queen Mary, U Of London, Investigating resilience to geographical adversity in young people; Julia Gibbs, U Edinburgh, Case study investigation into resilient populations achieving positive health outcomes under conditions of prolonged economic adversity; Helena Tunstall, U Edinburgh, Searching for resilience: Economically declining areas of Britain with lower than expected mortality rates.

SOCIAL AND ENVIRONMENTAL CORRELATES IN SPATIAL PATTERNS. Mohammad Ali, International Vaccine Institute, Spatial pattern of typhoid vi vaccine uptake in a mass campaign in Hue, Vietnam; Michael Emch, Columbia U, Ecological Correlates of Spatial Heterogeneous Vaccine Efficacy; Eric Daude, U Rouen, France, Integrating mobility to model the spatial diffusion of epidemics: a theoretical approach; Sue Grady, CUNY Graduate Center, Racial Disparities in Low Birthweight and the Contribution of Residential Segregation: A Multilevel Approach; Sarah Curtis and Steve Cummins, Queen Mary, U London; People, Places and Health: the Shifting Agenda; Robert Lipton, Prevention Research Center, Berkeley, CA, Underage tobacco sales in the city of LA, hotspots and politics.

CRITICAL GEOGRAPHIES OF PUBLIC HEALTH. Discussant: Graham Moon, U Portsmouth; Clare Herrick, UCLA, Risky Bodies: Public health, social marketing and the governance of obesity; Damian Collins, U Otago and Robin Kearns, The U of Auckland, Avoiding the glare? The imperative and practice of sun protection in Auckland, NZ; Tim Brown and Morag Bell, Department of Geography, Loughborough U, Thinking beyond boundaries: mobilizing the global in critical geographies of public health; Bethan Evans, U Liverpool, 'Gluttony or Sloth': critical geographies of bodies and morality in (anti)obesity policy; Sarah Wakefield, U Toronto, Food forever and for all: exploring praxis in public health using a "Food Movement" case study; Fiona Smyth, U Manchester, Places and spaces of disease: exploring social constructionist perspectives in medical geography.

MODELING HEALTH AND HEALTH CARE SYSTEMS. Graham Moon, Fat Nation: deciphering the distinctive geographies of obesity in the UK; Ellen Cromley, U Connecticut, Community trails and street network connectivity: built environment characteristics that support physical activity; Daniel Griffith, U Miami, An evaluation of within areal unit variation estimated with a Bayesian random effects model: a case study of pediatric lead poisoning in Syracuse, NY; Vladimir Yasenovskiy, U Alberta, Location-allocation models for hierarchical health care facility systems; Samantha Cockings, U Southampton, Automated zone design for environment and health studies using individual-level data.

GIS AND DISEASE. Linda Komlos, U Arkansas, A GIS approach to diffusion of the West Nile virus in Arkansas; Robert Adamski and Harrison Brunton, National Cancer Institute, Developing and maintaining an enterprise GIS for studying disease—an in depth look at the Long Island GIS; Bing Shi, Texas A&M U, Structuration, women's labor force participation and individual behavior: an integrated study on spatial-temporal patterns of breast cancer; Soumya Mazumdar, U Iowa, A method for protecting the privacy of health data while testing for an association between environmental exposure and health.

THERAPEUTIC SPACES: DESIGNING FOR COMSUMPTION AND CARE. Sarah Curtis, Therapy by design: A qualitative assessment by staff and service users of the design of a new psychiatric hospital; Robin Kearns, The U Auckland, Creating a place for population health: Interpreting the spaces and stories of a new school at U Auckland; Christine Milligan, Lancaster U, Emotional landscapes of care: place and identity in the care transition; Isabel Dyck, Department of Geography, Queen Mary, U London, Department of Sociology and Anthropology, Simon Fraser U, (Re)constituting landscapes of home: health and healing practices in immigrant and refugee households in Canada; Allison Williams, McMaster School of Geography & Geology, Therapeutic Landscapes: The Past, Present & Future; Anne-Cécile Hoyez, U Rouen-France, International therapeutic landscapes: production and reproduction of spaces and places in the world of yoga.

GENDER AND REPRODUCTIVE HEALTH ISSUES. Sara McLafferty, U Illinois, Prenatal health policy in a neoliberal era: implications for reproductive health in poverty neighborhoods in Brooklyn, NY; Sarah Lovell, Queen's U, The medicalized body: A discussion of social and cultural barriers to cervical screening; Ranjana Chakrabarti, U Illinois-Urbana Champaign, Place, culture and experiences of prenatal care: Bengali immigrant women in New York City; Vandana Wadhwa, U Akron, Regional patterns of women's reproductive health in India: the importance of socioeconomic contexts; Anne Fournand, Corporeity and spatiality: the case of pregnancy and childbirth.

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ELDERLY CARE AND GEOGRAPHIC ACCESS. Beatrice Chaudet, Sébastien Fleuret, Christian Pihet, Université Angers, 'Specific day-to-day routes': a tool for assessing accessibility of older people's daily environment ; Sébastien Fleuret, Christian Pihet, Edwin Rosenberg, Beatrice Chaudet, Regional coordination of care for the elderly as a production of spaces : the case of France; Alison Copeland, Queen Mary, U London, Examining efforts to reduce local rates of 'potentially avoidable' emergency admissions rates for the older population in a part of London; Paul Robinson, Charles R. Drew U, Racial and ethnic disparities in preventable hospitalizations in California: how much is due to differences in geographic access to care?; Lucas-Gabrielli Véronique, Le Fur Philippe, Research and information institute for health economics (IRDES), France, The healthcare offering in peri-urban municipalities of France.

Public Health Challenges And Research Needs Of County Health Departments (Luncheon Speakers). Lou Brewer, Director, Tarrant County Public Health; John Carlo, Chief Epidemiologist, Dallas County Department of Health & Human Services.

ENVIRONMENTAL POLLUTION AND HEALTH. Talar Sahsuvaroglu, McMaster U, Comparison of modeled ambient and personal levels of nitrogen dioxide in older adults living in Hamilton, Canada; Simon Kingham, U Canterbury, Particulate pollution and health impact on schoolchildren in Christchurch, NZ, winter 2004; Guang Xiao, U Texas at Dallas, The Effects of Air Pollution on the Rates of Asthma Admission to the Los Angeles Hospitals; Caroline Haddad, McMaster U, A longitudinal design that examines the long -term health effects of childhood exposure to air pollution: A case study from Hamilton, Ontario.

PUBLIC HEALTH AND MIGRATION. Pau Mota-Moya, UAB, Public health facing international migration in Spain; Jody Lawrence, School of Geography & Environmental Science, U Auckland, Health, wellbeing and diaspora: The TB experiences of a refugee community in Auckland, NZ; John Mohan, U Portsmouth, Geography, mutualism and health care: British hospital contributory schemes before, during and after the NHS; Chantelle Richmond, McGill U, Social support and aboriginal health.

ANALYZING DEGENERATIVE DISEASES. Vicki Brock, Kansas State U, Sociodemographic variables and incidence of cancer death: A case study of Mobile County, Alabama; Graham Bentham, U East Anglia, Explaining the geography of non-Hodgkin's lymphoma in the USA; Kirsten Beyer, U Iowa, Building surveillance capacity in Iowa through an environmental public health indicator system; Rita Fellers, U South Carolina, A mixed-model analysis of plutonium body burden in residents of North America; Bimal Kanti Paul, Kansas State U, Beliefs, attitudes, and behaviors (BAB) towards arsenic victims in rural Bangladesh.

URBAN HEALTH. Susanne Herbst, U Bonn, Germany; Closing the nutrient loop by hygienically safe waste water reuse in the Mekong-Delta, Vietnam; Karl Leiker, Westfield State College, Geographical, meteorological and urban factors in US heat mortality in the 20th century; Susan Macey, Texas State U, A respiratory risk-scape for children in Texas; Robert Lipton and Aniruddha Banerjee, Prevention Research Center, Chronic Obstructive Pulmonary Disease in California, 1993 and 1999: a novel method for using zip code level data; Alexandra Wieland, U Bonn, The association between regional precipitation-variability and the occurrence of gastrointestinal diseases in the administrative district of Cologne, Germany.

HEALTH GEOGRAPHY ANALYSIS. Thomas Krafft*, Jerry Overton**, Tim Tenelsen***, Alexandra Ziemann*, Ludwig-Maximilians-U Munich, ** Richmond Ambulance Authority, *** Rheinische Friedrich-Wilhelms-U Bonn, Health Geography and Prehospital Emergency Care; Ishwari Sivagnanam, U Iowa, Standardizing mortality rates for resource allocation; Brent Sallie, Morehead State U, An open source software application for facilitating the calculation of multiple types of standardized rates for large geographical data sets; Sean Webster, U North Texas, The prospects of the Orasure HIV test; Ezekiel Kalipeni, U Illinois, HIV/AIDS in Sub-Saharan Africa: A spatial and statistical analysis.

DISEASE MAPPING AND SPATIAL ANALYSIS. Qiang Cai, U Iowa, Explore effects of scale, population distribution on disease risk mapping; Stacey Martin, Georgia State U, A tale of two cartographies: Mapping disease using knowledge of place, Michael Tiefelsdorf, U Texas at Dallas, Controlling for migration effects in ecological disease mapping of prostate cancer; David Stinchcomb, National Cancer Institute, Web-based disease rate mapping-Usability test results; Chetan Tiwari, U Iowa, Intelligent agent-based spatial analysis system: a tool for solving privacy and confidentiality issues in disease surveillance.

VOLUNTEERISM, PUBLIC PARTICIPATION AND HEALTH. Jamie Pearce, U Canterbury, Slip! slap! slop! Social variations in melanoma incidence and mortality in NZ; Allison Williams, McMaster School of Geography & Geology, Knowledge Translation Strategies in a Community-University Partnership: Examining Local Quality of Life; Mark Rosenberg, Queen's U, Geographies of volunteerism: Filling the gap or being left behind?; Mentenot Mengesha, Queen Mary College, Public participation as a tool for urban regeneration: The experience of the London Borough of Newham.

MODELING HEALTH RISK. Marilyn Aviles, Queen Mary & Westfield College, Uncertainties, risk and emergencies': The use of a children's accident and emergency department in East London; Stig Halvard Jorgensen, Norwegian University of Science and Technology, Geographical redistribution of health risk? Possible effects of a 'Vision Zero' road safety following up strategy; Genevieve Clark, McMaster U, Emergent health issues: considering risk in relational terms; Sveinung Eiksund, Norwegian U of Science and Technology, Geographical differences in traffic risk for young adults and implications for road safety; Sarah Deedat, Queen Mary College, U London, Rickets and osteomalacia moving beyond the cultural model of health.

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GEOSOCIAL PERSPECTIVES ON HEART DISEASE AND STROKE DISPARITIES. Elizabeth Barnett, University of South Florida, Innovative local area measures of racial residential segregation for spatial epidemiology; Michele Casper, Centers for Disease Control and Prevention (CDC), Mapping Black-White disparities in stroke death rates among counties in the Southeastern, US, 1999-2002; Katrina Van Valen Moore, CDC, Temporal changes in the geographic disparity of heart disease mortality: All Americans and racial subgroups; Steven Reader, U South Florida, County-level geographic variation in cardiac deaths by transportation response: The national picture, 1991-2000.

HEALTH INEQUALITIES. Erik Sund, Norwegian U Science and Technology, Geography, social inequality and health in a welfare state; Jürgen Schweikart, Technische Fachhochschule Berlin, Spatial disparities in the ambulatory medical supply in Germany; Mark Skinner, Queen's U, Transcending public-private: narratives of non-profit and for-profit providers of long-term care in rural Ontario; James Dunn, U Toronto, Income inequality, public services and all-cause mortality in the United States; Gavin Andrews, David Phillips, Janine Wiles, Malcolm Cutchin, Geographical Gerontology in the twenty-first century: being 'critical', being relevant';

MANAGING DISEASE AND HEALTH POLICY. Richard Djukpen, Geography Department, U Illinois, Towards an effective HIV/AIDS management in Nigeria using exploratory spatial data analysis; Joseph Opong, HIV/AIDS in Teens and Young Adults in Urban Texas; Clive Sabel, U Canterbury, The modification effect of deprivation and pollution on the location of cardio-respiratory disease clusters in Christchurch, NZ; Ronald E. Cossman, Mississippi State U, Using prescription data to inform health policy.

NEIGHBORHOODS AND HEALTH. Matt Cox, U St Andrews, Selective migration and Type 2 diabetes: do diabetics become more deprived over time? Anneliese Poetz, McMaster U, Self-rated health within a structural equation model of the neighborhood; Andrew Beer, Flinders U of South Australia, The relationship between housing and health: Insights from an analysis of the impacts of an automotive plant closure; Robert Pampalon, *INSPQ*, Neighborhood differences in perception of place and health in the region of Québec.

Pre-conference workshop, University of North Texas Health Sciences Center: "Practical Applications of Mapping and Geographic Analysis in Public Health," Charles Croner, CDC, Ellen Cromley, U Connecticut, and Sarah McLafferty, U Illinois. For full conference listings, e.g., posters and other presenters, see <http://www.geog.unt.edu/oppong/files/Program%20final.pdf>.

Editor: Special recognition and appreciation is extended to **Joseph R. Opong**, Ph.D., Associate Professor, Department of Geography, University of North Texas, and his special team of assistants, who hosted and organized this outstanding 11th IMGS.



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. Celebrating our 65th 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 in the Fall for another in our GIS Guest Lecture Series

APPENDIX: MAPPING HEALTH INEQUALITIES

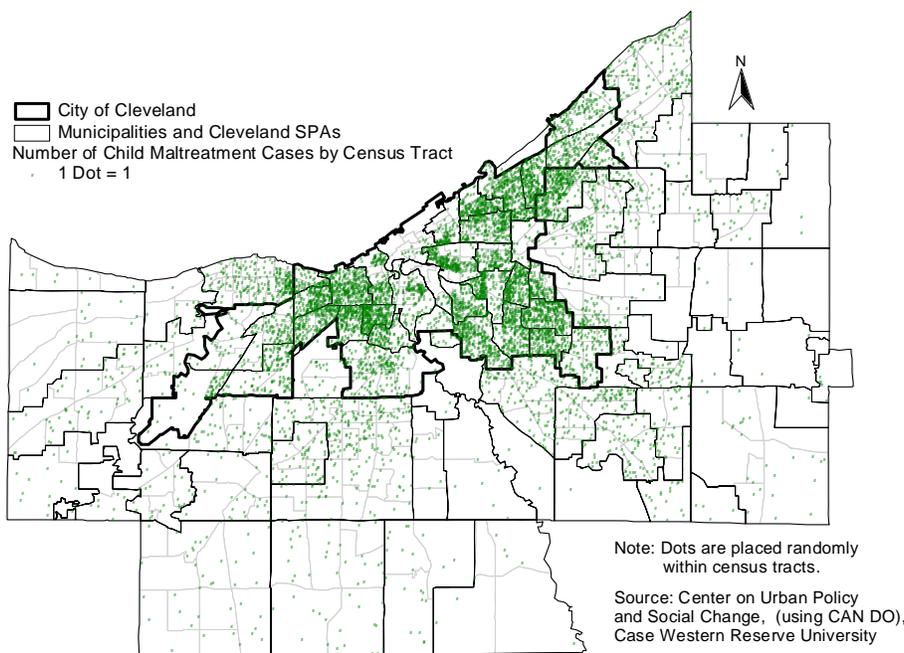
[Eighth in Series: See also May, July, September, November 2004, January, March and May 2005 editions]

Child Maltreatment, 1992 to 2002

By Terry Lenahan, The Center for Community Solutions, Cleveland, Ohio

Child maltreatment consists of neglect, physical and/or sexual abuse, psychological or emotional abuse, and medical neglect. Child abuse or neglect is often associated with physical injuries, delayed physical growth, and psychological problems such as aggression, depression, and post-traumatic stress disorder. It is also linked to an increased risk of substance abuse in later life.¹ In extreme cases, child abuse and neglect can lead to death. In the United States in 2003, approximately 1,500 children died as the result of abuse or neglect.² Healthy People 2010, the health promotion and disease prevention agenda for the United States, is a statement of national health objectives designed to identify the most significant preventable threats to health and to establish national goals to reduce these threats. The initiative has set a goal to reduce the national child maltreatment rate from 12.4 per 1,000 children 17 and under in 2003 to 10.3 per 1,000 by 2010.

Child Maltreatment Cases Cuyahoga County, 2002



Abuse and neglect are more commonly found in low-income families than in high-income families. Substance abuse by the parent or caregiver is also strongly associated with child maltreatment. Young children are more likely than older children to experience abuse and neglect. In 2003, children ages three and under had a reported child maltreatment rate of 16.4 per 1,000 and the rate steadily declined to 5.9 per 1,000 teens ages 16 to 17.³ Non-Hispanic black, American Indian or Alaskan Native, and Pacific Islander children have higher rates of child maltreatment than do other children.⁴ The U.S. rate of confirmed or suspected child maltreatment incidents

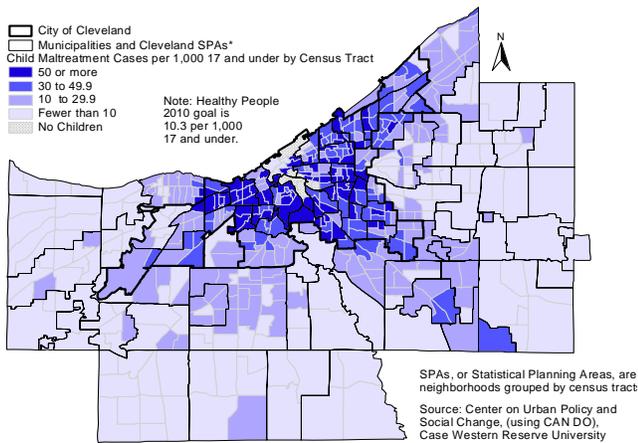
decreased from 15 cases per 1,000 in the 1992 to 1996 period to 12.6 per 1,000 in the 1997 to 2001 period, a 16 percent decline. The rate decreased slightly to 12.4 per 1,000 in 2003.

In Cuyahoga County, Ohio in 2002, there were 8,662 confirmed or suspected maltreatment cases in the child population of 347,990, for a rate of 24.9 cases per 1,000.⁵ The rate increased 15 percent over the 10-year study period, and then decreased slightly in 2002.

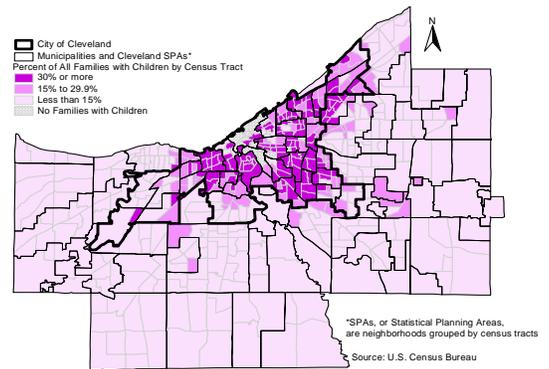
The city of Cleveland's 2002 child maltreatment rate was 44.2 cases per 1,000, nearly double the county rate. While 40

percent of the county’s children lived in Cleveland, 70 percent of the cases were reported in Cleveland. The rate increased 14 percent over the 10-year study period, and then remained about the same in 2002.⁶ The 2002 rate was four times higher in the city of Cleveland than in the Cuyahoga County suburbs, where the rate was 11.4 cases per 1,000 children. The suburban rate increased 19 percent over the 10-year study period, and increased 9 percent more in 2002.

Child Maltreatment Rates Cuyahoga County, 2002



Families with Children below Poverty Level Cuyahoga County, 2000



Maps created and rates calculated by Ms. Terry Lenahan, Policy and Planning Associate in Research, The Center for Community Solutions. Data compiled by Center on Urban Poverty and Social Change, Case Western Reserve University, available on the CAN DO online site, <http://povertycenter.cwru.edu>, from the Cuyahoga County Department of Children and Family Services database. “Child Maltreatment, 1992 to 2002” 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). Contact: Terry at tlenahan@communitysolutions.com.

¹ Guterman, N.B., *Stopping Child Maltreatment Before It Starts: Emerging Horizons in Early Home Visitation Services*. Thousand Oaks, CA: Sage Publications, 2001.
² U.S. Department of Health and Human Services, Administration on Children, Youth, and Families, *Child Maltreatment 2003* (Washington, DC: U.S. Government Printing Office, 2005).
³ ib.
⁴ ib.
⁵ The numbers represent a count of the maltreatment incidents, either confirmed or suspected, for a youth or child 17 and under during each year. Multiple cases for the same child in the same year were counted as one case. Rates per 1,000 persons 17 and under were calculated for the 1992 to 1996 and 1997 to 2001 periods by aggregating five years of data and calculating an average rate. The population 17 and under was interpolated for each year between the 1990 and 2000 censuses to calculate these rates. Since the 2002 population was not available, the 2002 rates were calculated using 2000 census population.
⁶ Since the number of children in Cleveland may have declined from 2000 to 2002, it is possible that the maltreatment rate was slightly higher than estimated here.