

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2000 (No. 37)

*Dedicated to CDC/ATSDR scientific excellence and advancement in disease control and prevention using GIS*

**Selected Contents:** Events Calendar (p. 1); (pp. 8-9); Special Reports (pp. 9-13); GIS (pp.17-21); Website(s) of Interest (pp. 21-22);



News from GIS Users (pp. 1-8); GIS Outreach Lectures (pp. 13-17); DHHS and Federal Update Final Thoughts (pp.22-24)

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

**November 28, 2000**, 2:00-3:15P.M., "Gateway to the Earth-Transforming Our Understanding of the Environment," by Barbara J. Ryan, Associate Director for Geography, U.S. Geological Survey. Please join NCHS for this 13<sup>th</sup> annual celebration of **Geography Awareness Week**. This program will be held at the NCHS Auditorium, **RM1100**, Hyattsville, MD; Envision is available to offsite CDC/ATSDR locations; See abstract this edition. Note: 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). All NCHS GIS and mapping presentations are open to the public; Contact: Chuck Croner at email [ccroner@cdc.gov](mailto:ccroner@cdc.gov)

[Note: Calendar events are posted as received; for a more complete listing see prior two bimonthly reports at NCHS GIS website]

☞ Federal Committee on Statistical Methodology Statistical Policy Seminar: Integrating Federal Statistical Information and Processes, November 8-9, 2000, Bethesda, MD [See announcement this edition]

☞ 51<sup>st</sup> Annual Meeting of the Society for Public Health Education, "Taking Risks: Revitalizing the Revolutionary Spirit of the Profession," November 10-12, 2000, Boston, MA [See: <http://www.sophe.org>]

☞ First Annual Birmingham GIS Conference & Trade Show: "Exploring the Current State of GIS," November 27-29, 2000 [See: <http://www.custom-maps.com>]

☞ 2000 Winter Simulation Conference, December 10-

13, 2000, Orlando, FL [See: <http://www.wintersim.org/program.htm>]

☞ RAND's Population, Health and Environment Workshop, January 11-13, 2001, Santa Monica, CA [See: <http://www.rand.org/organization/drd/labor/phew>]

☞ Fifteenth Annual GIS Conference (GIS 2001): "Branching Out: Spatial Technology Goes Mainstream," February 19-22, 2001, Vancouver, British Columbia, Canada [See: [www.gis2001.com](http://www.gis2001.com)]

☞ 2001 American Society for Photogrammetry & Remote Sensing (ASPRS) Annual Conference, April 23-27, 2001, St. Louis, MO [See: <http://www.asprs.org>]

☞ 19th National Conference on Health Education & Health Promotion: "Plan for Success: Strengthening the Public's Health through Health Promotion," April 25-27, 2001, Atlanta, GA [See: <http://www.astdhphe.org>]

☞ Congress of Epidemiology 2001 (American College of Epidemiology, American Public Health Association-Epidemiology Section, Canadian Society for Epidemiology and Biostatistics, and Society for Epidemiologic Research, June 13-16, 2001, Toronto [See: <http://www.epi2001.org>]

☞ 2nd International Symposium on Digital Earth, June 24-28, 2001, Fredericton, New Brunswick, Canada [See: [http://www.digitalearth.ca/pressrelease\\_english.html](http://www.digitalearth.ca/pressrelease_english.html)]

### II. GIS News

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2000 (No. 37)

2

*(Please communicate directly with colleagues on any items)*

### A. General News and Training Opportunities

1. **The Association of Schools of Public Health** is soliciting abstracts for a supplement to the peer-reviewed journal *Public Health Reports* for November/December 2001 publication. The purpose of this issue is to publish approximately 15 articles that reflect collaborative research among academia, agencies, and communities to address and remediate health disparities. Abstracts should describe success in combating health disparities of populations with a recognized burden of disease and disability and/or identified risk factors (e.g., risks cited in *Healthy People 2010*) and should illustrate how collaboration was necessary to accomplish the research and advance the health of the public. Priority will be given to abstracts that address: 1) Productive elements of a research partnership among academia, practice, and the community; 2) Methods and the translation of the collaborative research activity results into public health benefits; 3) Community experiences with collaborative research resulting in community-level interventions that prevent or remediate health disparities; and, 4) Application of an understanding of social determinants of health in research projects to prevent or remediate health disparities in at-risk populations. Abstracts are solicited from the public health community, specifically accredited schools of public health, MPH degree programs, preventive medicine programs, academic research centers, community-based organizations, minority health institutions, and other public health agencies and professional organizations. [Contact: Geri Aglipay, ASPH Project Manager, at voice 202-296-1099, ext. 134 or email [gsa@asph.org](mailto:gsa@asph.org)]

2. The **Jiangsu Institute of Parasitic Diseases**, Wuxi, People's Republic of China, announces a Geographic Information Systems (GIS) training course, focused on schistosomiasis research, to be held February 19-March 2, 2001. This training course is designed to give researchers an understanding of the use of GIS for the prevention and control of Dengue/Dengue Hemorrhagic Fever (D/DHF), Malaria, and Schistosomiasis. Spatial analysis, statistics, and GIS methods taught in this course may be applied to other health research problems. [Editor: The course outline is extensive; see

[http://www.phrl.org/Course\\_Outline.htm](http://www.phrl.org/Course_Outline.htm)]

3. **George Mason University** (Fairfax, VA) announces the Spring 2001 course "Medical Applications of GIS," taught by Lee De Cola, Geographer and Research Physical Scientist, US Geological Survey. Geographic information systems are transforming the fields of medical research and management, as the biomedical field itself grows in size and complexity. The course surveys epidemiology, geographic ideas in medicine and health, and introduces the use of GIS in the analysis of health problems. Students will gain familiarity with the field, practical experience in the analysis of empirical data, and the tools to conduct future research in the printed as well as Internet environment. Topics include Health in space and time; Geography of health, disease, environment, and behavior; Epidemiology fundamentals; Spatial analysis and modeling in medicine; GIS problems; Health service and delivery, and; Emerging threats (new and resurgent diseases, bioterrorism, biowarfare). [Contact: Lee at voice (703) 648-4178 or email [ldecola@usgs.gov](mailto:ldecola@usgs.gov)]

4. From **Alex Mudd**, U.S. Department of Justice: The U.S. Department of Justice Criminal Division GIS Staff is pleased to announce the release of the RCAGIS (Regional Crime Analysis Geographic Information System) application and source code. RCAGIS is a fully functional crime analysis application developed in conjunction with the RCAS (Regional Crime Analysis System) Group in Maryland. RCAGIS was designed specifically to enhance the RCAS group's ability to study cross jurisdictional crime patterns using RCAS's standardized, shared incident database.

RCAGIS works in conjunction with CrimeStat, the spatial statistics software package developed by Ned Levine and Associates ([www.nedlevine.com](http://www.nedlevine.com)), to provide advanced spatial analysis capabilities. RCAGIS features include the ability to create crime hotspots and ellipses, support for digital orthophotos, linkage analysis, incident report generation, and map layout creation tools. RCAGIS was developed with Visual Basic and ESRI's MapObjects. All of the Visual Basic source code for RCAGIS is available for download free of charge at the GIS staff's webpage: <http://www.usdoj.gov/criminal/gis/rcagishome.htm>. A fully

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2000 (No. 37)

3

functional 'test' version of RCAGIS is also available with fictional test data. Please see the RCAGIS download page for details on using the test version of RCAGIS. [Contact: Alex at email [criminal.gis@usdoj.gov](mailto:criminal.gis@usdoj.gov)]

### B. Department of Health and Human Services

#### **Agency for Health Care Research and Quality**

**5. Small Conference Grant Program-** Conferences in amounts of up to \$50,000 per conference to create health services research agendas, develop consensus around research methodological issues and disseminate the research to help shape health policy: This Program is intended to complement and promote AHRQ's core research by providing a mechanism for Agency stakeholders and others to (1) develop health services research agendas and identify strategies and mechanisms for studying them, (2) discuss and develop consensus around health services research methodological and technical issues, (3) disseminate health services research information for formulating or evaluating health policy, managing health care programs, and using or purchasing health services, and (4) develop partnerships with stakeholder organizations and build their capacity to participate in research activities and use the results of health services research. [See: Agency for Health Care Quality and Research at <http://www.ahrq.gov/fund/grantix.htm>]

#### **Agency for Toxic Substances and Disease Registry**

6. ATSDR hosted an **October 11 GIS seminar** in Atlanta, by ATSDR staff, that addressed the following: Topic 1. Using ArcView interactively in public meetings-Memphis Depot, by John R. Crellin, senior environmental epidemiologist, Division of Health Assessment and Consultation's Superfund Site Assessment Branch. The presentation demonstrated how ArcView can be used to present environmental and demographic data interactively to the public. This technique facilitates discussion about a situation and allows the public to have specific questions addressed. Information about the Memphis Depot Superfund Site in Memphis, Tennessee, which is a closed military supply depot, was used as an example. Topic 2. Analysis of the 1998 Water-Distribution System

Serving the Dover Township Area, New Jersey: Field-Data Collection Activities and Water-Distribution System Modeling, by Morris Maslia, research hydrologist and environmental engineer. This investigation was conducted to help examine an elevated incidence of childhood cancers by ATSDR and the New Jersey Department of Health and Senior Services. [Contact regarding this seminar: Jerry Curtis, NCEH, at voice (404) 639-1790 or email [gbc1@cdc.gov](mailto:gbc1@cdc.gov); the study by Maslia et al has been published: Maslia, M.L., Sautner, J.B., Aral, M.M., Reyes, J.J., Abraham, J.E., and Williams, R.C. 2000. Using water-distribution system modeling to assist epidemiologic investigations. *ASCE Journal of Water Resources Planning and Management*, 126(4):180-198]

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

7. The **Eighth Biennial Symposium on Statistical Methods**, co-sponsored by CDC, the Agency for Toxic Substances and Disease Registry, and the Atlanta Chapter of American Statistical Association, will be held January 23-24, 2001, in Atlanta, Georgia. A short course, "Introduction to Mixed Models for Longitudinal Studies," will be offered January 22, along with the symposium. Presentations will include modeling and analysis of complicated data structures, issues related to sparse and massive data sets, data collection and storage, and use of software for exploratory and automated techniques. [Registration and additional information about content of the symposium is available at <http://www.cdc.gov/od/ads/sag>]

8. The Office of Genetics and Disease Prevention Guest Speaker Series announces "**Screening for Genetic Susceptibility to Cancer: Experience with Breast and Colon Cancer**," to be presented by Peter T. Rowley, Division of Genetics, University of Rochester Medical Center, on November 16, 2000. It will be held at Koger Davidson Bldg., Room 2060B, from 1:00-2:00P.M. [Contact: Rita Collins at voice (770) 488-3235 or email [rnc5@cdc.gov](mailto:rnc5@cdc.gov)]

9. The Office of Global Health is pleased to announce that CDC and ATSDR have developed a new global health strategy entitled, ***Working with Parthers to Improve Global Health: A Strategy for CDC and***

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2000 (No. 37)

4

*ATSDR*. [The Executive Summary is reproduced in Section VI., this edition, and the full text document is available at <http://www.cdc.gov/ogh/pub/strategy.htm>]

10. The Human Resources Management Office, CDC, announces the following training opportunities offered through the **CDC Corporate University** via satellite. These presentations are live from the 128th annual American Public Health Association Meeting in Boston. (a) Health Disparities: Contributions from Social and Physical Environments, November 14, 2000, 2:30-4:30pm EST and (b) CDC on the Move Against Disparities: Program Highlights, November 15, 2000, 2:30-4:30pm EST. Location: Learning Resource Center, Stanford Building, Koger Office Park, 2960 Brandywine Road. These events are available via Envision. Contact your local envision facilitator to make arrangements for viewing at your site.

11. **Tim Clary**, ASPH research fellow at NCHS, Office of Research and Methodology, is currently using GIS to help NCHS improve its national sample survey methods of minorities. Using ArcView, Tim has produced preliminary maps based on 1990 census data showing which counties contain the largest percentage of individual ethnicities nationwide and which counties have the greatest percentage of residents who are of certain ethnicities. The project will then be refined to a smaller geographical unit and updated with 2000 census data. [Contact: Tim at voice (301) 458-4643 or email [telary@cdc.gov](mailto:telary@cdc.gov)]

12. Web sites on confidentiality issues recommended by **Alvan O. Zarate** (Confidentiality Officer, National Center for Health Statistics) in his October 25 presentation "Disclosure Risk and Disclosure Limitation," in Atlanta to CDC include: 1) Checklist on Disclosure Potential of Proposed Data Releases at: [http://www.fcsn.gov/docs/checklist\\_799.doc](http://www.fcsn.gov/docs/checklist_799.doc); 2) Confidentiality and Data Access Committee's Website at <http://www.fcsn.gov/cdac/index.html>; 3) OMB "Report on Statistical Disclosure Limitation Methodology" at <http://www.fcsn.gov/working-papers/wp22.html>, and 4) American Statistical Association Privacy and Confidentiality Website at: <http://www.his.com/~kzyzl/>. [Contact: Al at voice (301)

458-4601 or [aoz1@cdc.gov](mailto:aoz1@cdc.gov) as to the availability of this PowerPoint presentation]

12. NCHS is pleased to announce its **13<sup>th</sup> Annual Geography Awareness Week** commemoration, November 28, 2000, with a presentation that will appeal to all GIS Users and especially those with an interest in GIS, earth science and the human interface (see Section V., this edition, for details). We welcome you to be part of this long-standing mapping and geospatial tradition at NCHS. The program is open to all.

[Editor: For those of you who missed our GIS program on October 24 ("LandView: A Federal Geographic Data Viewer"), by **Jerry McFaul** and **Sarah Gerould**, USGS scientists, the LandView software is free for download at [www.rtk.net](http://www.rtk.net) and includes a county of your choice. The new LandView IV will be released in November as CD-ROM DVD. The October 24 program was dedicated to the memory of **Anita Burney**, former HRSA staff member and GIS consultant, who promoted GIS use for minority health issues and the American Public Health Association. [Contact: Chuck Croner at [cmc2@cdc.gov](mailto:cmc2@cdc.gov)]

13.. The interagency instructional team of **Chuck Croner** (DHHS), **Fred Broome** and **Jon Sperling** (Census Bureau), conducted GIS workshops at the **CityMatCH Urban MCH Leadership Conference 2000**. This is the second consecutive year the team has instructed. The workshops are attended by State and local public health practitioners and researchers, many of whom return to initiate GIS in the work setting. ArcView GIS software was used for the workshops. "We also had the opportunity to tour Space Imaging's satellite center in Denver," writes Chuck. "The satellite circles the globe 14 times per day, or once every 98 minutes; it is a powerful experience to be in the command room as you observe the satellite's path, and the changing view of earth, in real time." [Contact: Chuck Croner at [cmc2@cdc.gov](mailto:cmc2@cdc.gov)]

### Health Resources and Services Administration

14. HRSA Updates **Health Professional Shortage Area (HPSA)** Information: Updated lists of designated primary medical care, mental and dental health professional shortage areas can be found in the Sept. 15

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2000 (No. 37)

5

Federal Register. Current HPSA data also can be found at <http://www.bphc.hrsa.gov/databases/newhpsa/newhpsa.cfm>. This site is updated weekly. The lists identify geographic areas or groups of people that are most in need of receiving primary health care services and assistance. The data is as of July 31, 2000, and includes 2,706 primary medical care, 661 mental health and 1,178 dental HPSAs. Federal programs use HPSA designations as prerequisites to applying for assistance, such as the National Health Service Corps' Scholarship and Loan Repayment programs, administered by HRSA's Bureau of Primary Health Care. Several projects managed by the Health Care Financing Administration also use HPSA designations, including the Rural Health Clinics and Medicare Incentive Payment programs. [For more information on HPSAs, contact BPHC's Division of Shortage Designation at (301) 594-0816 or visit <http://bphc.hrsa.gov/dsd/dsd11.htm>]

### National Institutes of Health

14. From **Virginia Cain**, Office of Behavioral and Social Sciences Research (Promoting Health- A New IOM Report): Americans spend over \$1 trillion each year on health care, yet US citizens rank among the least healthy of people living in industrialized nations. And despite recent breakthroughs in efforts to map the human genome, the outlook for improving the nation's health will not improve unless greater resources and effort are devoted to addressing behavioral and social factors that account for the majority of disease, disability, and death in the United States, according to a new Institute of Medicine (IOM) report.

*Promoting Health: Intervention Strategies from Social and Behavioral Research*, an IOM report sponsored by the Robert W. Woodruff Foundation and others, states that little of the nation's health research efforts and resources have been devoted to disease prevention and health promotion efforts. Behavioral and social science research, including research to understand how to promote behavioral change and create healthier environments, is the key to helping people enjoy longer, healthier lives, according to the report. The report develops a series of recommendations that address the fundamental forces in our society that are primary determinants of health

and disease, and go beyond a consideration of specific diseases as it recognizes that these fundamental social forces affect virtually every disease. The report will be available at [www.nap.edu](http://www.nap.edu). [Contact: Barbara Kivimae Krimgold, Academy for Health Services Research and Health Policy, at voice (202) 292-6711 or email [bkrimgold@ahsrhp.org](mailto:bkrimgold@ahsrhp.org)]

15. From **Dan Grauman**, NCI: An enhanced version of the "Atlas of Cancer Mortality in the United States, 1950-94" ([www.nci.nih.gov/atlas](http://www.nci.nih.gov/atlas)), released by the National Cancer Institute (NCI) in December 1999, is currently in the final stages of review. The enhanced version of the Web site, which has undergone extensive usability testing by NCI's Web Design and Usability Branch, is not only an interactive version of the book, but also a resource that enables the user to create customizable maps and graphs by controlling certain parameters. The user will also be able to link to a variety of national and international-related Web sites for additional cancer-related resources and databases. The enhanced site will consist of four major components: (a) an interactive version of the book (developed by Information Management Services, Inc., Rockville, MD-[www.imsweb.com/](http://www.imsweb.com/)) with text, graphics, and data download capabilities; (b) a module (developed by MapInfo Corporation, Troy, NY-[www.mapinfo.com/](http://www.mapinfo.com/)) enabling the user to create multiple maps (with animation) for approximately 40 cancers at three geographic levels (county, state economic area, and state) with zoom capabilities; (c) a module (developed by Corda Technologies, Orem, UT-[www.corda.com/](http://www.corda.com/)) for creating interactive charts "on the fly" corresponding to the maps; and (d) links to related national and international resources. [Contact: Dan at email [dan\\_grauman@nih.gov](mailto:dan_grauman@nih.gov)]

### Substance Abuse and Mental Health Services Administration

16. From **Eric Goplerud**: I am putting together the beginning of a behavioral health GIS for the Substance Abuse and Mental Health Services Administration (SAMHSA), and would like to get connected to other GIS users in DHHS, so that we can use common platforms. [Contact: Eric at email [egopleru@samhsa.gov](mailto:egopleru@samhsa.gov)]

C. Historical Black Colleges and Universities (HBCUs) and Minority Programs

17. "Other priority activities for the Subcommittee include building long-term relationships with institutions such as Historically Black Colleges and Universities (HBCU's) and the Hispanic Serving Institutions (HSIs). Two working teams were formed to collaborate with these institutions." [See: October issue of the newsletter for the CDC/ATSDR Behavioral and Social Science Working Group (BSSWG), Professional Liaison Priorities for the Coming Year, at <http://intranet.cdc.gov/bsswg/pdfs/NEWS1000.PDF> or contact **Indu Ahluwalia**, Committee Chair, at voice (770) 488-5225]

18. The American Sociological Association (ASA) and the Consortium of Social Science Associations (COSSA) co-sponsored a Congressional briefing on "**How Neighborhoods Matter: The Value of Investing at the Local Level**," on September 25<sup>th</sup>, Rayburn House Office Building. Experts shared their research findings about neighborhoods, and how and why neighborhoods matter above and beyond the individual attributes of the people who live there. Speakers addressed such questions as how neighborhood conditions are intertwined in producing health-related risks, how neighborhoods connect to different patterns of school achievement in children and youth, and how discrimination affects the quality of life and even the costs of living in neighborhoods. [Contact: Johanna Ebner at voice (202) 383-9005, ext. 320, or email [ebner@asanet.org](mailto:ebner@asanet.org); Editor: Relatedly, the hierarchy of household, neighborhood, community and societal contextual effects, on human disease outcome, is the key theme of the Institute of Medicine's new report (see News Item 14 above)]

19. **National Historically Black Colleges and Universities Health Services Research Network:** The National HBCU Health Services Research Network promotes opportunities which increase the capacity of HBCUs to develop and conduct quality health services research which addresses the health needs of African Americans and other underserved populations in the health services arena. The Network provides a forum for the discussion of critical health issues pertaining to

these populations. [For more information, see <http://www.geocities.com/hbcuhealthnet> or contact Audrey Burwell, NCHS, at email [aburwell@cdc.gov](mailto:aburwell@cdc.gov)]

20. **HHS Directory of Health and Human Services Data Resources:** The HHS Directory of Health and Human Services Data Resources is a compilation of information about virtually all major data collection systems sponsored by the U.S. Department of Health and Human Services (HHS). The Directory was developed under the auspices of the HHS Data Council, which serves as the department's senior internal data policy body and advises the Secretary on a variety of data policy issues. The directory updates and expands upon the 1995 HHS Directory of Minority Health and Human Services Data. Additional data systems are included in this update, and more extensive information about each data system is provided. The Directory of Health and Human Services Data Resources was produced for policymakers, administrators, researchers, and the public as a reference document on data resources within HHS. This document is available on HHS's home page on the Internet at <http://aspe.hhs.gov/datacncl/datadir>]

21. **Minority Research Infrastructure Support Program (M-RISP, Agency for Health Care Research and Quality):** The intent of the research infrastructure program is to strengthen the research environments of minority institutions through grant support to develop and/or expand existing capacities for conducting research in all areas of health services. Minority students will benefit from participation in projects as research assistants and will be encouraged to pursue careers in fields related to health services research. The average AHRQ M-RISP grant is \$300,000 direct costs per year plus negotiated F&A. The infrastructure core component of most M-RISP grants average \$50,000 per year, direct costs. Individual Investigator projects average \$50,000 per year, direct costs. Support is limited to three years for the first-time application. The core, infrastructure component of an M-RISP grant is renewable for intervals of up to five years. Competitive renewals are permitted so long as new Individual Investigators of subprojects are supported by the program. Individual Investigators who participate in

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2000 (No. 37)

7

subprojects on the M-RISP grant should not expect more than a total of six years of support through the M-RISP program. [See: Agency for Health Care Quality and Research at <http://www.ahrq.gov/fund/grantix.htm>]

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

22. From **George Yocher**, Delaware GIS 2000 Committee: The Delaware GIS 2000 Conference will be held Friday, November 17, 2000, at the Dover Sheraton Inn and Conference Center, Dover. A one-day extravaganza of Geographic Information is planned. Sponsored by the Delaware Geographic Data Committee, and the University of Delaware's Institute for Public Administration, the conference includes keynote speaker C. Dana Tomlin, The University of Pennsylvania, as well as six breakout sessions, a poster session, and displays by GIS vendors. [See: [www.state.de.us/planning/gis2000](http://www.state.de.us/planning/gis2000)]

23. From **Angela Queste**, School of Public Health, Bielefeld University (Report from the Meeting 2000 of the German Working Group on Medical Geography): From October 6-7, 2000, the Working Group on Medical Geography in the German Society for Geography met in Remagen, Germany. During this meeting the combination of medical geography and Public Health was the main issue. There were some presentations containing GIS-applications in the context of Public Health. Topics included the use of GIS to: identify geographically isolated hospitals that should be supported financially to cover the supply of hospitals to rural areas; to build up information systems for drinking water protection; to detect epidemics caused by drinking water hazards, and; the use of GIS for different projects in environmental health in an Institute of Public Health. [See <http://www.tfh-berlin.de/~kred/akmedgeo> or contact Angela at email [angela.queste@uni-bielefeld.de](mailto:angela.queste@uni-bielefeld.de), Faculty of Public Health, University of Bielefeld, Germany]

24. From **Rachel Boba**, Police Foundation: I would like to announce the release of the report "Geocoding in Law Enforcement," which is an update of the previous report "Address Based Geocoding." This report was produced by the Police Foundation's Crime Mapping Laboratory with a grant from the COPS office. The

report is a great resource for those individuals just beginning to map or those being trained in crime mapping. It describes the procedures for basic geocoding and uses examples specific to law enforcement. The report is in PDF format and is available by requesting it from Rachel [Contact: Rachel, Director, Crime Mapping Laboratory, at voice (202) 833-1460 or email [rboba@policefoundation.org](mailto:rboba@policefoundation.org)]

25. From **Zvia Segal Naphtali**, The Graduate Center/CUNY (New GIS web course for Health Care Professionals Using ArcView at <http://campus.esri.com/coursecatalog/>): The primary goal of this course is to provide students with a variety of examples and exercises demonstrating the many uses of GIS for health care and human services delivery planning. In particular, students will learn how to use ArcView GIS to: examine public health indicators and trends (low birth weight and teen births) to facilitate disease monitoring and management (AIDS, asthma, tuberculosis, lead poisoning); handle emergency response (locate the firehouses and hospitals nearest the scene of the World Trade Center bombing); evaluate the geographic pattern of health care and human services facilities in relation to need (inspect the spatial distribution of heart disease rates and major hospitals with hi-tech equipment); examine patterns of utilization of services (the rates of "Ambulatory Care Sensitive" hospitalizations and pediatric asthma); evaluate accessibility and barriers to delivery of services to children eligible for Child Health Plus, Medicaid patients, and the indigent and uninsured, and; perform site selection for health care and human services facilities. [Contact: Zvia, Data Manager, New York City Nonprofits Project at voice (212) 817-1899 or email [znaphtali@gc.cuny.edu](mailto:znaphtali@gc.cuny.edu)]

26. From **Reno Fiedler**, Scientific Technologies Corporation(STC): STC was an invited guest speaker on the uses and benefits of GIS in the fight against Bioterrorism at four of the five regional meetings hosted by the **Bioterrorism Preparedness and Prevention Program at the CDC** over the last summer. The intent of these meeting was to increase the awareness and to promote collaboration of Public Health officials in this area. Meetings were held in

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2000 (No. 37)

8

Philadelphia, St. Louis, Atlanta, Denver, and San Francisco. A fictitious scenario of a covert terrorist attack using the biological agent that causes pneumonic plague was used to discuss the various aspects of such an event among the participants from many different organizations and agencies. STC contributed by generating maps that visually represented the scenario. These maps demonstrate the opportunities and possibilities that this technology carries in the area of preparedness and prevention, detection and surveillance, incident management, and communication. The full presentation can be found in STC's Bioterrorism Resource Center at [http://www.stchome.com/bio\\_presentations.htm](http://www.stchome.com/bio_presentations.htm) [Contact: Reno at voice (520) 202-3333 or email [Reno\\_Fiedlerhttp](mailto:Reno_Fiedlerhttp)]

27. The United States Army Medical Research Institute of Chemical Defense (USAMRICD) presents its second annual satellite broadcast, December 5, 6, and 7, from 12:30P.M.-4:30P.M. EST, on the **Medical Response to Chemical Warfare and Terrorism 2000**. This live, interactive, three-day satellite broadcast will inform and educate health care professionals and first responders serving the military, and supporting civil defense/domestic preparedness programs about chemical agents and the proper medical responses in the event of intentional or accidental chemical agent exposure. It will also discuss battlefield management, decontamination of casualties, and personal protective equipment. Discussions on antiterrorism will be integrated throughout. The program will feature discussions with world-renowned scientists, researchers, clinicians and counter-terrorism experts. The year 2000 production will combine the best of last year's broadcast with exciting updates and cutting edge science, diagnostics, and therapeutics. The course is targeted to clinical health care professionals but is appropriate for all personnel involved in the management and care of persons exposed to chemical agents. [See: <http://registeramerica.net/cccd2000/>]

### III. GIS Outreach

*[Editor: All requests for Public Health GIS User Group assistance are welcome; please 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 or ATSDR]*

☞ From **Steve Davis**, Oklahoma Department of Mental Health and Substance Abuse Services: I'm a new participant on the Public Health GIS Users Group listserv and hope to find others in Oklahoma and/or in the behavioral health field who are interested in using GIS in their work. I'm the Director of Evaluation and Data Analysis. We collect a lot of information about clients and providers that would be more useful and easier to use for planners and evaluators if it were correlated with other geography-based information and presented in a graphical and mapping format. I would like to learn what others are doing with this type of data. [Contact: Steve at voice (405) 522-3813 or email [sdavis@odmhsas.org](mailto:sdavis@odmhsas.org)]

☞ From **Mark Egbert**, Colorado Department of Public Health and Environment: The department has been doing some preliminary work with SaTScan (<http://dcp.nci.nih.gov/BB/SaTScan.html>), a free download from the National Cancer Institute. One of the projects we have been working on uses birth certificate data to look for clustering of low weight births (less than 2500 grams) across the entire state. Recently, the department has started geocoding all birth records (according to the mother's residence). Geocoded birth records have made this type of analysis much more feasible.

SaTScan requires ASCII files as input-the case file (representing individual cases), the population file (representing the total population), and the coordinates file (representing unique spatial units). There are some additional input files and other input options, based on the type of model you wish to run. Initially, we chose to only look at data from 1990. We are using total births for the population file, and low weight births for the case file. We experimented with different spatial units (the coordinates file). After trying to use 1990 Census Block Groups as the spatial unit, we decided that making a uniform grid across the entire state, and assigning the birth data to a particular grid cell, was the best approach for this type of project. We are still experimenting with grid sizes-since the population and case data is very unevenly distributed. The preliminary results have been encouraging. We would appreciate comments from anyone else who is using SaTScan for a similar type of project. [Contact: Mark, GIS Coordinator, at voice (303)692-2246 or email



mark.egbert@state.co.us]

✉ From **Thomas Nehrbass**, City of Milwaukee: I'm an intern at the Nonprofit Center of Milwaukee, where we have a contract with the City of Milwaukee Health Department. We're providing assistance in GIS and other database support. We are also trying to find contacts with other municipal/county health departments that have a GIS analyst as a full time staff member to find out more about their database implementation, typical duties, etc. [Contact: Tom at email Nehrbass@csd.uwm.edu]

✉ From **Donald Albert** and **Mark Leipnik**, Sam Houston State University: We are in the process of soliciting short case studies (2-3 pages doubled spaced and a table or figure) for a book entitled, "Implementing GIS in Law Enforcement." If you have case studies that use GIS to analyze crime, we would be interested in considering them for inclusion in our book. Please send a two to three sentence description of your case study to email dp\_albert@yahoo.com by November 15.

#### IV. Special Reports ENVIRONMENTAL JUSTICE, GIS, AND THE SELECT STEEL CASE

**Eric C. Tassone** and **Lance A. Waller**

Department of Biostatistics, Rollins School of Public Health, Emory University, Atlanta, GA

Over the past 20 years society paid increasing attention to how pollution and other environmental impacts affect minority and low-income populations. One significant publication in this regard was 1987's *Toxic Waste and Race in the United States* by the Commission for Racial Justice of the United Church of Christ.

**This report showed increased proportions of racial minorities in ZIP codes containing one or more toxic waste sites, compared to ZIP codes containing no such waste sites, and is often cited as the genesis of the environmental justice (also called "environmental equity" or "environmental racism") movement.**

Currently, the Environmental Protection Agency (EPA) defines Environmental Justice (EJ) as the "fair

treatment for people of all races, cultures, and incomes, regarding the development of environmental laws, regulations, and policies." [See <http://www.epa.gov/swerosps/ej/aboutej.htm>].

Concerned about such issues, President Clinton issued Executive Order 12898 ("Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations") on February 11, 1994. [See <http://www.epa.gov/swerosps/ej/html-doc/execordr.htm>]. This Executive Order requires every federal agency to "analyze the environmental effects, including health, economic, and social effects" of federally-sponsored programs. Consequently, all agencies receiving federal funds must perform EJ assessments of the impact of their work.

On February 5, 1998, in an effort to enforce Executive Order 12898 and to effectuate the goals of the definition of EJ, the EPA issued *Interim Guidance for Investigating Title VI Administrative Complaints Challenging Permits* (the "Interim Guidance"; see PDF file, <http://www.epa.gov/civilrights/docs/interim.pdf>). This document, as its title suggests, interprets environmental justice in light of Title VI of the Civil Rights Act of 1964, as amended, 42 U.S.C. §§ 2000d et seq. ("Title VI"; see PDF file, <http://www.epa.gov/ocrpage1/docs/42usc2000d.pdf>). Additional authority cited by the EPA in formulating the Interim Guidance were the EPA's implementing regulations, 40 C.F.R. Part 7, [see PDF file, <http://www.epa.gov/ocrpage1/docs/40p0007.pdf>], and Executive Order 12898.

The EPA's Interim Guidance, though heavily criticized as vague and ambiguous, and formulated without much consultation of outside stakeholders [see <http://www.epa.gov/ocempage/nacept/titleVI/titlerpt.html>], presented a clear change from previous EJ policy: Under Title VI, an aggrieved party could prevail in an EJ complaint by showing that they were subject to a "disparate impact," rather than having to prove that they were the victim of "intentional" discrimination. This approach closely follows general interpretations of discrimination under Title VI specified in Executive Order 12250 [see PDF file, <http://www.epa.gov/civilrights/docs/eo12250.pdf>] (issued by President Carter) and a subsequent memo by Attorney General Reno [see PDF file, <http://www.epa.gov/civilrights/docs/tab15.pdf>]. Decision makers often evaluate claims of

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2000 (No. 37)

10

“disparate impact” based on data from ostensibly objective sources, such as the U.S. Census. Increasingly, GIS methods appear as tools for tasks such as evaluating the demographics of allegedly affected populations.

The EPA’s first opportunity to use the Interim Guidance in evaluating an EJ complaint arose in the so-called Select Steel case. In June of 1998, Father Phil Schmitter and Sister Joanne Chiaverini of the St. Francis Prayer Center (the “complaining parties”) alleged EJ violations of Title VI arising from the proposed construction and operation of a new facility by the Select Steel Corporation of America (“Select Steel”) in Flint, Michigan. The proposed facility was a steel recycling mini-mill which would have produced 43 tons per hour of specialty steels. The Detroit News [<http://detnews.com>] observed that the proposed facility could have created 200 jobs. The EPA’s Office of Civil Rights (“OCR”) [<http://www.epa.gov/ocrpage1/index.htm>] accepted the Select Steel complaint for investigation in August of 1998.

The complaint alleged, among other allegations, that the Michigan Department of Environmental Quality’s (“MDEQ”) issuance of a Clean Air Act Prevention of Significant Deterioration permit to Select Steel for the proposed steel recycling mini-mill would lead to a discriminatory impact on minority residents. The complaint referred generally to the “unfair and disparate burden” of pollution that would allegedly have been borne by “a group of minority . . . people.” Specifically, the complaint claimed “the vast majority of the people within 3 miles of the proposed site are minority Americans and will be burdened with a disparate impact of pollution in an already deeply polluted area.”

The EPA alluded to such demographic composition analyses in two of its five basic steps in the Interim Guidance’s framework for determining disparate impact. In “Step 1: Identifying the Affected Population” the EPA stated that “proximity to facility” would be a factor in determining the affected population. In “Step 2: Determining the Demographics of the Affected Population” the EPA used the phrase “within a certain proximity” of a facility. But never did the Interim Guidance quantify or further elucidate what “proximity” meant.

Because the Interim Guidance provided no set definition of proximity, groups in favor of or opposed to the proposed Select Steel facility could make plausible-yet-contradictory claims about the demographic composition of the people who would potentially be affected by the proposed plant, and they did. For example, parties in favor of the proposed Select Steel facility took contention with the complaining parties’ analysis of the demographic composition of the people who would be affected by the facility. David Masito, a journalist writing for the Detroit *News*, reported a study that purportedly showed “Census tracts within a mile of the plant are overwhelmingly white.” [See <http://detnews.com/1998/metro/9808/27/08270155.htm>]. Masito later reported the results of MDEQ’s demographic analysis, also based on a one-mile radius, which showed that the area was over 90% white, compared to Michigan’s 17.6% minority population. [See <http://detnews.com/1998/metro/9810/30/10310006.htm>]. Detractors of the complaint presented these studies as evidence against the complaining parties’ claim of disparate impact.

However, inspection of 1990 census data reveals that all three seemingly-contradictory statements regarding the population composition are correct. The proposed site was northeast of Flint, and slightly outside the city’s primary concentration of minority population. As a result, one- and two-mile buffers around the site contain a predominately white population, while a three-mile buffer begins to include predominately African-American neighborhoods, and neighborhoods with greater population sizes. This example shows the stark reality that even when employing seemingly objective GIS methods, one can select analysis parameters such as a radius defining the affected population to suit the goals of the analyst. (See the EPA’s Select Steel Decision and Investigative Report, [PDF file, [http://www.epa.gov/civilrights/docs/ssdec\\_ir.pdf](http://www.epa.gov/civilrights/docs/ssdec_ir.pdf)] for complete information and for other demographic characterizations based on additional radii).

Later in 1998, the EPA analyzed the Select Steel complaint and concluded that it must fail, but this determination was not based in any way on the characterization of the affected population. Rather, the EPA concluded no “adverse impact” existed since the

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2000 (No. 37)

11

potential emissions were in compliance with the relevant laws for each type of substance. The EPA found no “impact,” and therefore did not reach the issue of whether the “impact” would be “adverse.” Consequently, the EPA’s ruling in Select Steel shed no light on proper GIS methods for determining an affected population. Specifically, the EPA did not decide which radius or radii, if any, should be used in determining who lives “in the vicinity” of the facility. Despite the EPA’s ruling, Select Steel eventually abandoned the Flint location, citing uncertainty and conflict surrounding its proposal.

In June 2000, the EPA issued a revised Interim Guidance [PDF file, [http://www.epa.gov/civilrights/t6dft\\_inv\\_guide\\_june2000.pdf](http://www.epa.gov/civilrights/t6dft_inv_guide_june2000.pdf)]. The revised Interim Guidance contains much greater detail regarding many aspects of the complaint investigation process, including a discussion concerning characterization of the affected population but with considerably less attention given to the distance-based proxies for exposure mentioned in the original Interim Guidance.

**Many GIS analyses of environmental justice maintain the use of buffered areas to stratify the population into exposed and unexposed groups. Many problems plague such methods, including using distance as a proxy for exposure. But most troubling is the creation of the exposed/unexposed dichotomy, which, as the Flint example illustrates, may easily be tailored to conform to the goals of the analyst.**

An alternative approach takes the population’s self-identification into census-based race categories as strata and estimates exposure distributions for each stratum. Since most analysts would use the same set of racial strata, such analyses may be less easily manipulated than dichotomizing by user-defined exposure buffer radii. Also, Title VI, which provides the underlying legal basis for such an EJ complaint, specifically concerns comparisons between racial groups, and therefore meshes more easily with the “stratify-by-race” approach than with the “stratify-by-exposure” approach. Finally, methods for such an analysis exist, such as in Waller et al. (1997, 1999), and are consistent with the type of comparisons statisticians

and econometricians typically make. [Author contacts: Eric at [email etasson@sph.emory.edu](mailto:etasson@sph.emory.edu) and Lance at [lwaller@sph.emory.edu](mailto:lwaller@sph.emory.edu)]

### REFERENCES

-Waller, L.A., Louis, T.A., and Carlin, B.P. (1997) Bayes methods for combining disease and exposure data in assessing environmental justice. *Environmental and Ecological Statistics* 4, 267-281.

-Waller, L.A., Louis, T.A., and Carlin, B.P. (1999) Environmental justice and statistical summaries of differences in exposure distributions. *Journal of Exposure Analysis and Environmental Epidemiology* 9, 56-65.

-PDF file of slides for presentation based on the Select Steel case (including maps of the site location and census demographics) at <http://www.sph.emory.edu/~lwaller/flint.html>.

### Technical Talk

“Deduplicating” Address Records in a Database for Sample Selection and Research

**Situation:** A commercial vendor has a customer sales database with about 100,000 records. Individual customers can be listed multiple times (e.g., one customer can make multiple purchases, and a new record was added for each purchase). In addition to the customer's name, the sales database includes the street address, city, and ZIP code for each customer. This address information has not been address standardized. An epidemiologist would like to survey a random sample of an unduplicated list of customers. Is Coding Accuracy Support System (CASS) certification a potentially important preliminary step in geocoding and what software solutions exist that can be used to CASS certify and deduplicate (purge the duplicate) standardized street address records?

**Background:** One of the factors that influences the “success rate” of geocoding is that the geocoding software must match the “machine readable street names to be geocoded” with the “standardized machine readable street names used on the reference base street map.” A question that perhaps someone from the Bureau of the Census TIGER files might be able to answer is: How does the Bureau of Census assign standardized machine readable street names to the Bureau of Census TIGER files? And, are the

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2000 (No. 37)

12

standardized machine readable street names on the Bureau of Census TIGER files the same as (or very similar to) the standardized machine readable street names that are produced by US Postal Service CASS certification? If both the US Bureau of Census TIGER files and the US Postal Service CASS certification are using the same "machine readable street names", then an argument might be made that staff in state and local (and federal) public health agencies that enter case name and street address information into any public health agency electronic data bases should routinely—and immediately after entering the data—use CASS certification software to double check that the entered information is "CASS certified" (as a preliminary first step to help achieve Healthy People Objective 2010 Objective 23-3 e.g., to "increase the proportion of all major national, state, and local health data systems that use geocoding to promote nationwide use of geographic information systems (GIS) at all levels"); See also the discussion in Challenge 1, Address Information, in: Yasnoff WA and Sondik EJ. *Geographic Information Systems (GIS) in Public Health Practice in the New Millennium. J Public Health Management Practice* 1999; 5 (4): ix-xii.

**US Postal Service Coding Accuracy Support System** (See URL site [http://new.usps.com/cgi-bin/uspsbv/scripts/content.jsp?D=10843&B=Address\\_Quality&A=B&U=X&U1=B&U2=H](http://new.usps.com/cgi-bin/uspsbv/scripts/content.jsp?D=10843&B=Address_Quality&A=B&U=X&U1=B&U2=H)): The Coding Accuracy Support System (CASS) improves the accuracy of carrier route, five-digit ZIP, ZIP+4, and delivery point codes that appear on mailpieces. CASS is offered to all mailers, service bureaus, and software vendors who want to evaluate their address-matching software and improve the quality of their ZIP+4, CRIS, and five-digit coding accuracy. This process is graded by the United States Postal Service's National Customer Support Center (NCSC), and the results returned to mailers in order to provide useful diagnostics for correcting deficiencies. CASS enables the Postal Service to evaluate the accuracy of address-matching software programs in three areas: (1) ZIP+4 delivery point coding, (2) carrier route coding, and (3) five-digit coding. CASS allows vendors/mailers the opportunity to test their address-matching software packages and, after achieving a certain percentage of compliance, to be certified by the Postal Service. CASS does not

measure the accuracy of ZIP+4 delivery point, five-digit ZIP, or carrier route codes in a mailer's existing files. CASS enables mailers to measure and diagnose internally written, commercially-available, address-matching software packages. The effectiveness of service bureaus' matching software can also be measured. There are two stages in the CASS process: Stage I, which is optional, and Stage II, which is required for certification.

**STAGE I-A Test With Answers.** CASS Stage I enables businesses with address-matching software to test their software against test addresses provided by the Postal Service. The CASS file contains approximately 100,000 test addresses extracted from the City State and ZIP+4 Files with samples of all types of addressing used around the country. (Some test addresses have been changed for test purposes, and not all records have valid ZIP+4 Codes or valid addresses.) Customers can evaluate the accuracy of their address-matching software by applying the correct carrier route, five-digit, and ZIP+4 Codes and by comparing the applied codes with the correct codes provided by the Postal Service.

**STAGE II-A Test Without Answers.** CASS Stage II also contains approximately 100,000 test addresses that are extracted and presented in the same makeup and mixture as Stage I—only no answers are provided. Customers use their address-matching software to apply the correct codes. Match rates using CASS-certified software vary greatly depending on address hygiene, the quality of addresses used, and the timeliness of the customer database update applications. An address with an incorrect ZIP+4 Code, carrier route code, five-digit ZIP Code, or an address with no ZIP+4 Code can contribute to delays in processing mail. To be CASS-certified, participants must pass with a minimum score of 96% for ZIP+4, 100% for delivery point coding, and 98% for carrier route and five-digit. CASS certification is valid for six months. Certified vendors are published periodically in postal documents.

**Potential Solutions:** ([http://www.freelancetech.com/Products\\_Postalsoft.htm](http://www.freelancetech.com/Products_Postalsoft.htm)): DeskTop PostalCoder from First Logic combines address correction, database management and merge/purge features. PostalCoder is CASS certified and offers discounts for both multi-years and multiple users. An updated CD ROM (for CASS certification) is provided every two months. One

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2000 (No. 37)

13

(1) Year Subscription and Maintenance: \$1295 (Win 95/98 or NT), Renewal price \$995, Current Version: April 2000 (ver. 6.10f); <http://www.smartersoftware.com>: Address Pro 3.0 (costs \$595 per year) is designed to provide CASS certification, but does not include the "de-duplication" (purge duplicate record) features. However, Microsoft Access can be used to automatically delete duplicate records from a table. In Microsoft Access, you create a copy of the structure of the table that contains duplicates, make primary keys of all the fields that contain duplicates, and then run an append query from the original table to the new table. Because fields that are primary keys can't contain duplicate records, this procedure produces a table without duplicate records; <http://www.tpsnet.com/software/dtake.htm>: Double Take Merge/Purge Price: \$2,995 specializes in deduplication; Also <http://www.dataflux.com>: SAS Institute has acquired DataFlux Corp., a Raleigh, N.C.-based developer of data cleansing software tools that increase the accuracy and usability of corporate databases. SAS will extend its offerings with the addition of DataFlux's proprietary Blue Fusion technology, which helps companies and organizations to standardize data in formats such as those required by U.S. Postal Service (USPS) certification programs and integrate data from outside sources. Blue Fusion also identifies and eliminates duplicate records and redundant data.

\*\*\*\*\*

### Technical Talk: Cartograms and Considerations

C. Virginia ("Ginny") Lee, ATSDR, reminds us that cartograms are value-by-area maps that are drawn so that the internal enumeration units are proportional to the data. Cartograms have an advantage in that no categorization is needed in drawing the cartogram. There are 2 forms of cartograms: contiguous and noncontiguous. In contiguous cartograms, the units remain adjacent to one another allowing one to maintain boundary and orientation relationships. This allows the user to preserve the shape of the original study area more easily. In the noncontiguous cartogram, the boundary relationships are not kept. Most programs use this technique because it is easy to construct and scale the cartogram. The shapes of the individual units can be maintained.

If you are trying to use the maps for

communication then a cartogram wouldn't be your first choice. Cartograms are difficult for most readers to interpret because they need to be familiar with the geographic relationships of the places that are being mapped. This may not be too hard for U.S. readers if you are using states as your units, but in other places it is difficult. It is especially difficult for noncontiguous cartograms. If you are going to use a cartogram for others to read then:

1. you must maintain the outline shape of the units (states should be their usual shape);
2. you need a geographical inset map showing the geographical relationships between the units; and,
3. the legend should include an area at the low end of the value range

Most software programs fail to do those three things so it is difficult to make an effective cartogram using existing software programs. [Ginny adds: "For a full discussion of cartograms, see *Cartography: Thematic Map Design* by Borden Dent. He was my major professor so the views expressed reflected Borden's teaching on the subject." Contact: Ginny, Chief, Spatial Analysis & Information Dissemination Section, Division of Health Assessment and Consultation, at voice (404) 639-6056 or email [cv11@cdc.gov](mailto:cv11@cdc.gov)]

### **V. GIS and Related Presentations and Literature**

*(This section may include literature citations, abstracts, syntheses, etc., and submissions are invited)*

NCHS Cartography and GIS Guest Lecture Series:  
13<sup>th</sup> Annual Geography Awareness Week Celebration  
**November 28, 2000-** "Gateway to the Earth," by **Barbara J. Ryan**, Associate Director, U.S. Geological Survey. The program will be held at the NCHS Auditorium, 2:00-3:15 P.M., RM1100, Hyattsville, MD; Envision is available to offsite CDC/ATSDR locations and webcast viewing is available to non-CDC staff at URL <http://video.cdc.gov/ramgen/envision/live.rm>. which will become live after 1:30 P.M.  
Abstract: "Gateway to the Earth" is a vision for information management at the U.S. Geological Survey (USGS) which will transform our understanding of the environment. It is an organizing principle, a system for accessing, integrating, managing, and delivering the information assets of the USGS to a wide range of



**PUBLIC HEALTH GIS NEWS AND INFORMATION**

November 2000 (No. 37)

14

users. These assets are the sum total of USGS natural science data, information and knowledge, geospatial, temporal, and textual, regardless of communication media--analog or digital. The cost of developing these assets, which are not static, but continually growing, is currently estimated to be \$20B, yet as an organization the USGS has not effectively exploited the full use of these assets. In order to promote optimal use of these information assets, they must first be integrated. Yet even within the USGS, and certainly within the government, existing systems, processes, practices, and even culture result in dis-integration rather than integration.

Anyone who starts to build a Geographic Information System (GIS) soon realizes there is no one place to go to acquire or access the full range of information assets the USGS, much less the earth and natural science communities, have to offer; a fully implemented Gateway to the Earth will correct that. Access to these information assets must be made easier, both internally and externally. One should have easy and full access to the entire suite of assets, whether one's point of entry is discipline based (biology, geology, geography, or hydrology), theme based (hazards, resources, environment, or information), geospatially based (place name or latitude/longitude), organizationally based (science center, district office, branch or field station), or time based (date, time series).

Historically the USGS has done an excellent job of integrating data and information horizontally as indicated by many national coverages of selected data sets (topography, surficial geology, bedrock geology, aquifers, aerial photography, landuse and land characterization, ecosystem coverage, etc.). Now, these horizontal national coverages must be better vertically integrated. Lastly, Gateway to the Earth needs to have pointers to partner's information, where available.

**“Although the USGS has tremendous amounts of data, measured in terabytes and possibly petabytes, there are many other sources of data and information. Gateway to the Earth is about creating full and easy access to earth and natural science information for addressing the needs of citizens, scientists, resource managers, and policy officials”**

Gateway to the Earth is a coherent set of interfaces that enable diverse users to find, obtain, and use natural science information in ways that are meaningful to them. [Contact: Barbara at voice (703) 648-7413 or email [bjryan@usgs.gov](mailto:bjryan@usgs.gov)]

\*\*\*\*\*

U.S. Bureau of the Census, Statistical Research Division: Annual Human Computer Interaction Seminar Series: **November 13, 2000**- “Zoomable User Interfaces” (Part 3 of 3), by **Ben Bederson**, Director, Human-Computer Interaction Lab, Computer Science Department, University of Maryland. The program will be held 10:30- 12:00NOON, Bureau of the Census, at 4700 Silver Hill Road, Suitland, MD. Abstract: Zoomable User Interfaces (ZUIs) are dynamic contextual information displays that use spatial representations and smooth zooming for navigation. They are 2D displays that use animated zooming to present information in context. Users zoom out for an overview to see related information, and zoom in for more detail. Dr. Bederson will describe his work from the past several years in this area, and describe Jazz, a new tool they are building to support development of ZUIs. Jazz is a Java Open Source toolkit that supports the construction of ZUIs. Professor Bederson will explain the philosophy of ZUIs and describe what they are good for, and what they aren't. He will also discuss the Jazz architecture, and explain how they have built an extensible, maintainable and efficient platform that supports a broad variety of applications. This talk will be presented using Jazz, including demonstrations of several ZUI applications. [Contact: Barbara Palumbo at voice (301) 457-4974]

2000 Joint Statistical Meetings of the American Statistical Association (selected titles): “Accessing Confidential Microdata at Census Research Data Centers,” D. R. Merrell, US Bureau of the Census, Carnegie Mellon U, at email [dmerrell@andrew.cmu.edu](mailto:dmerrell@andrew.cmu.edu); “Role of Individual, Household and Areal Characteristics in Domestic Violence,” J. P. Lynch, American U, at email [jlynch@american.edu](mailto:jlynch@american.edu); “A Weighted Average Likelihood Ratio Test for Spatial Clustering of Disease,” R. Gangnon and M. Clayton, U of Wisconsin-Madison and U of Wisconsin, at email [ronald@biostat.wisc.edu](mailto:ronald@biostat.wisc.edu); “Identifying Disease Clusters

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2000 (No. 37)

15

in Populations with Non-Uniform Density by K Nearest Neighbor Method,” D. Pavlov and R. Kryscio, Department of Statistics, U of Kentucky, at email pavlov@ms.uky.edu; “Nonstationary Spatial Modeling,” D. Higdon and J. Swall, Duke U, at email higdon@stat.duke.edu; “Bayesian inference for nonstationary spatial covariance structure via spatial deformations,” A. Schmidt and A. O’Hagan, U of Sheffield, at email stp98ams@sheffield.ac.uk; “Statistical Analysis of Environmental Data from a Geographic Information System,” Noel Cressie, Ohio State U, ncressie@stat.ohio-state.edu; “Statistical Models of Air Pollution Effects on Mortality in Urban America,” F. Dominici and Scott Zeger, Johns Hopkins School of Public Health, at email fdominic@jhsp.h.edu; “Visualizing Abandoned Hazardous Waste Sites in the United States,” C. Offutt, U.S. Environmental Protection Agency, at email offutt.carolyn@epa.gov; “Visualization of High-Dimensional Data Sets,” R. Sun and D. Carr, George Mason U, at email rsun@gmu.edu; “A Statistical Assessment of an Environmental Justice Complaint in Flint, Michigan,” L. Waller and E. Tassone, Emory U, at email lwaller@sph.emory.edu; “Icosahedron-Based Discrete Global Grid Systems: The Geometry of Recursive Partitions and Spatial Indexing,” K. Sahr, U of Oregon, at email sahrk@cs.uoregon.edu; “Prediction of Incident Cancer Cases in Non-Seer Counties,” L. Pickle, E. Feuer and B. Edwards, National Cancer Institute, at email pickle@mail.nih.gov; “Bayesian Spatial Analysis of Radon Exposure Data from the Iowa Radon Lung Cancer Study, B. Smith and M. Cowles, The U of Iowa, at email brian-j-smith@uiowa.edu. [For the complete program and paper abstracts see: <http://www.amstat.org/meetings/jsm/2000/jsm2000prog/index.cfm>]

### Emerging Infectious Diseases

The **September-October 2000** issue of CDC's journal, *Emerging Infectious Diseases* (EID), is now available at site <http://www.cdc.gov/ncidod/eid/upcoming.htm>. Selected articles include: Antigenic Variation in Vector-Borne Pathogens; Imported Lassa Fever in Germany; *E. chaffeensis* Infection in Coyotes from Oklahoma; Atypical *Chryseobacterium meningosepticum* in Taiwan; Genomics and Bacterial Pathogenesis; Pertussis Infection in Vaccinated Children in Israel;

Non-O157:H7 Shiga Toxin-Producing *E. coli* in Nebraska; Falciparum Malaria in Tourists to the Dominican Republic; *Trichinella pseudospiralis* Outbreak in France; Double Infection with Resistant Strains of *M. tuberculosis*; Medical Examiners, Coroners, and Bioterrorism; Seroprevalence of Human *Hantavirus* Infection in Brazil.

### Morbidity and Mortality Weekly Report

Selected articles from CDC's *Morbidity and Mortality Weekly Report* (MMWR): Vol. 49, No. 42- National Diabetes Awareness Month-November 2000; Levels of Diabetes-Related Preventive-Care Practices, United States, 1997-1999; End-Stage Renal Disease Attributed to Diabetes Among American Indians/Alaska Natives with Diabetes-United States, 1990-1996; Folate Status in Women of Childbearing Age-United States, 1999; Notice to Readers: National Epilepsy Month-November 2000; *MMWR Recommendations and Reports*, Vol. 49, No. **RR-11- Building Data Systems for Monitoring and Responding to Violence Against Women** Vol. 49, No. 41- Childhood Asthma Hospitalizations-King County, Washington, 1987-1998; Self-Reported Concern About Food Security-Eight States, 1996-1998; Hospital-Based Policies for Prevention of Perinatal Group B Streptococcal Disease-United States, 1999; Surveillance Summaries, Vol. 49, No. **SS-10- Youth Tobacco Surveillance-United States, 1998-1999** Vol. 49, No. **40-** Outbreak of Rift Valley Fever-Saudi Arabia, August-October, 2000; Measuring Childhood Asthma Prevalence Before and After the 1997 Redesign of the National Health Interview Survey-United States; Enterovirus Surveillance-United States, 1997-1999 *MMWR Recommendations and Reports*, Vol. 49, Number **RR-9- Preventing Pneumococcal Disease Among Infants and Young Children: Recommendations of the Advisory Committee on Immunization Practices (ACIP)**; Vol. 49, No. **39-** Cigarette Smoking Among Adults-United States, 1998; Consequences of Delayed Diagnosis of Rocky Mountain Spotted Fever in Children-West Virginia, Michigan, Tennessee, and Oklahoma, May-July 2000; Notice to Readers: Updated Recommendations From the Advisory Committee on Immunization Practices in Response to Delays in Supply of Influenza Vaccine for the 2000-01 Season; Notice to Readers: Changes in National Notifiable

Diseases Data Presentation; Vol. **49**, No. **38**- Cluster of HIV-Infected Adolescents and Young Adults-Mississippi, 1999; Progress Toward Poliomyelitis Eradication-Ethiopia, 1997-August 2000; Notice to Readers: 2001 Symposium on Statistical Methods: Issues Associated With Complicated Designs and Data Structures; Surveillance Summaries, Vol. **49**, Number **SS-9**: *Surveillance for Vaccination Coverage Among Children and Adults-United States*; National, State, and Urban Area Vaccination Coverage Levels Among Children Aged 19-35 Months-United States, 1998; Vaccination Coverage Among Children Enrolled in Head Start Programs or Day Care Facilities or Entering School; Influenza, Pneumococcal, and Tetanus Toxoid Vaccination of Adults-United States, 1993-1997; Vol. **49**, No. **37**- State-Specific Changes in Singleton Preterm Births Among Black and White Women-United States, 1990 and 1997; Notice to Readers: Prostate Cancer Awareness Month-September 2000; Notice to Readers: Workshop on Cytomegalovirus Vaccine Development; Notice to Readers: Final 1999 Reports of Notifiable Diseases; Vol. **49**, No. **36**- Screening With the Prostate-Specific Antigen Test-Texas, 1997; Update: West Nile Virus Activity-Northeastern United States, 2000; Notice to Readers: Satellite Broadcast on HIV Prevention; Vol. **49**, No. **35**- Early-Onset Group B Streptococcal Disease-United States, 1998-1999; Receipt of Advice to Quit Smoking in Medicare Managed Care-United States, 1998.

#### Other Related Presentations and Literature

##### **Federal Committee on Statistical Methodology**

2000 Statistical Policy Seminar: "Integrating Federal Statistical Information and Processes," November 8-9, 2000, Bethesda, MD. This is the fifth in a series of seminars hosted by COPAFS (Council of Professional Associations on Federal Statistics) for the Federal Committee on Statistical Methodology. The seminar will open with a keynote address by Norman Bradburn, National Science Foundation, and include a luncheon talk on November 9th by Kenneth Prewitt, Director, U.S. Census Bureau. Participants will include federal statisticians, economists, and managers, as well as others in the broader statistical community who share an interest in the quality of federal data.

The seminar will feature twelve invited sessions

related to the theme "Integrating Federal Statistical Information and Processes." These include: Integrating Survey Concepts and Designs; Integrating Policies and Practices for Data Confidentiality; Integrating Approaches to Performance Measurement, Planning, and Reporting; Integrating Comparable Measures of Disability in Federal Surveys; Language Differences and Linguistic Isolation: Measurement Issues and Implications for Surveys; Integrating Electronic Systems for Disseminating Statistics; Understanding and Integrating Economic Data from Disparate Sources; Integrating Geographical Information with Statistical Programs; Best Practices in Contracting for Statistical Surveys; Best Practices for Eliminating Nonresponse in Federal Surveys; Evaluating Approaches to Incentives for Survey Respondents, and; Software Issues for Disseminating Statistical Information on CD-ROM. The following session on geographic information will take place on Thursday, November 9:

##### **Integrating Geographical Information with Statistical Programs: Challenges and Opportunities**

Organizer: **William Iwig**, NASS; Chair: **Ronald Bosecker**, NASS; Speakers: **John Moeller**, USGS, "Overview of the Use of Geological Information in Statistical Programs and the Role of the Federal Geographic Data Committee;" **Fred Broome**, BOC, "Accuracy of Geographical Information: the International View;" **Debra Stoe**, DOJ, "Crime Mapping, Privacy, and Data Confidentiality," and; **Mike Egan**, U.S. Coast Guard, "Emergency Response Information-Guess or GIS." Discussant: **Chuck Croner**, NCHS. [For further information see: <http://members.aol.com/copafs/flier.htm>]

\*\*\*\*\*

Editor: "It appears that John Snow thought geographically, but did not use a map, to discover the likely source of the Broad Street outbreak. Snow's map of the epidemic area was simply the visual representation of a deduction from a theory of transmission developed earlier, which in turn was grounded in a theory of the pathology of cholera as primarily a disorder of the gastrointestinal tract. But, since 1902, when reproductions of his maps began to appear in textbooks of hygiene and public health, our fascination with the map has tended to distort our understanding of his methods. As our survey of the



## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2000 (No. 37)

17

government Broad Street maps has shown, the mere act of seeing data arranged graphically in space yields no new understanding without the support of a pathological theory." See: "Map-making and myth-making in Broad Street: the London cholera epidemic, 1854," *The Lancet*, by Brody, H., Rip, M., Vinten-Johansen, P., Paneth, N. and; Rachman, S., Vol. 356(9223), 1 July 2000, pp 64-68.

### Books and Special Reports

***Spatial Analysis, GIS and Remote Sensing Applications in the Health Sciences***, edited by D. P. Albert, W. M. Ghastlier, and B. Levergood. This new book explores the rapidly expanding applications of spatial analysis, GIS and remote sensing in the health sciences, and medical geography. It will help you understand the feasibility of developing the GIS/RS capabilities of your organization. Important features include: Presents the advantages and disadvantages of numerous GIS, Remote sensing and spatial analytic techniques. Reviewed diseases include birth defects, HIV/AIDS, lead poisoning, leukemia, cancer, lymphoma, hepatitis, and others. Additional topics covered include hazardous waste sites, emergency planning and response, hospital services, family planning, immunization, and more. Contents: Introduction; How Spatial Analysis Can Be Used In Medical Geography; Geographic Information Systems: Medical Geography; Geographic Information Systems: Health Services Research; GIS-Aided Environmental Research: Prospects And Pitfalls; Infectious Disease And GIS; Historical Perspective On The Development; The Integration Of Remote Sensing And Medical Geography: Process and Application; Conclusion, and; Master GIS/RS Bibliographic Resource Guide. [Contact: Skip DeWall at email Skip@sleepingbearpress.com or visit <http://www.sleepingbearpress.com/>]

***Terrain Analysis: Principles and Applications***, edited by J.P. Wilson and J.C. Gallant. Leading experts detail how GIS and related technologies, such as GPS and remote sensing, are now being used, with the aid of computer modeling, in terrain analysis. Continuing the innovative work of Professor Ian Moore, a visionary who saw terrain analysis as a robust method for modeling the large areas and complex spatial patterns

of environmental systems, Terrain Analysis puts into action TAPES, or Terrain Analysis Programs for Environmental Sciences, Dr. Moore's innovative tool for terrain analysis. The book's contributors describe how TAPES are applied to specific geomorphologic problems, explain the algorithms used in current terrain analysis software, and examine the interpretation and use of terrain attributes in predictive models. [See: <http://catalog2.wiley.com/catalog/frameset/1,1783,,00.html>]

***Analyzing Crime Patterns: Frontiers of Practice***, edited by V. Goldsmith, P. G. McGuire, J. H. Mollenkopf and T. A. Ross, Sage Publications, Inc. Part I contains four chapters that provide an overview of mapping and geographic information systems in crime analysis. One chapter outlines the type of data that must be collected and then categorizes several methods used to analyze spatial crime data. Another chapter discusses the integration of crime mapping into the COMPSTAT process used by the New York City Police Department. A third chapter argues that crime data alone rarely provide enough information for an adequate understanding of criminal problems. The fourth chapter indicates that the spatial analysis of crime has broadened understanding of criminal activity, but it has also generated many continuing controversies. Part II has four chapters that describe several methods for identifying and analyzing geographic concentrations of criminal activity ("hot spots"). These include repeat address mapping, exploratory data analysis of crime patterns, the use of kernel smoothing to identify "hot spots," and the utility of standard deviation ellipses for evaluating "hot spots." The four chapters in Part III seek to go beyond identifying "hot spots" by offering various explanations for spatial variation in crime. The single chapter in Part IV evaluates software used to generate spatial statistics. [See: <http://www.ncjrs.org/database.htm>]

## **VI. Related Census, DHHS and Other Federal Developments**

**News from the National Committee on Vital and Health Statistics** [The NCVHS serves as the statutory [42 U.S.C. 242k(k)] public advisory body to the Secretary of Health and Human Services in the area of health data and statistics. In that capacity, the Committee provides advice and assistance to the Department and serves as a forum for interaction with interested private sector groups

on a variety of key health data issues. The Committee is composed of 18 individuals from the private sector, sixteen of whom are appointed by the Secretary of HHS for terms of four years each; with about four new members being appointed each year. Two additional members are selected by Congress]

Two Workgroups of the NCVHS, the National Health Information Infrastructure Workgroup and the Health Statistics for the 21st Century Workgroup, are conducting joint public hearing to solicit opinions from the public, including oral and written testimony, about the issues raised in two interim reports: "Toward a National Health Information Infrastructure" and "Shaping a Vision for 21st Century Health Statistics."

**The hearings will explore challenges to the development and implementation of a National Health Information Infrastructure (NHII). As envisioned in the interim report, the NHII is the set of technologies, standards, applications, systems, values, and laws that support all facets of individual health, health care, and public health. The broad goal of the NHII is to deliver information to individuals -consumers, patients, and professionals-when and where they need it, so they can use this information to make informed decisions about health and health care.**

The hearings will also seek comments about major trends and issues in population health and their implications for future information needs described in the report, "Shaping a Vision for 21st Century Health Statistics." The report outlines themes that have emerged from national consultations involving health statistics users, public health providers, advocacy groups and health care providers at local, state, and Federal levels. Speakers invited by the 21st Century Workgroup will be asked to discuss specific local and state health statistics needs, specific means for generating private and public cooperation in defining health statistics needs and generating health statistics collaborations. Invited speakers will also be asked to provide specific comments and suggestions on the interim report, particularly as it relates to local and state health statistics needs and private and public cooperation. [Information about the meetings, and the above referenced reports, may be accessed at the NCVHS homepage <http://www.ncvhs.hhs.gov/>]

\*\*\*\*\*

***Working with Partners To Improve Global Health:  
A Strategy for CDC and ATSDR***

**Executive Summary**

(This is the unedited Executive Summary of the new global health strategy by CDC/ATSDR. The full text of the strategy document is available on the Office of Global Health website at <http://www.cdc.gov/ogh/pub/strategy.htm>). In today's world of increasing globalization, the United States continually faces new challenges and opportunities in public health. In response, the Centers for Disease Control and Prevention (CDC) and the Agency for Toxic Substances and Disease Registry have prepared a ***Global Health Strategy***. The rationale for CDC/ATSDR's institutional commitment recognizes a) the increasing influence of determinants arising outside the country on US health; b) the mutual benefits of improving the health of other countries; c) the advantages of sharing US knowledge and public health expertise with international partners; and d) the need to respond to the health consequences of international emergencies. In addition, past and ongoing international work by CDC has provided a strong foundation on which to base its international initiatives.

The CDC ***Global Health Strategy*** defines goals in the following five critical areas of public health:

**Public Health Surveillance and Response**-To strengthen global capacity to detect, investigate, and monitor disease and injury, as well as their causes, and to respond appropriately to problems as they are identified.

**Public Health Infrastructure and Capacity Building**-To work with countries to establish and maintain effective public health systems, including trained workforces and collection and use of essential information for effective public health policies and programs.

**Disease and Injury Prevention and Control**-To collaborate with countries and other international partners in developing, implementing, and evaluating prevention and control strategies to address important public health problems.

**Applied Research for Effective Health Policies**- To assist countries and other global partners to conduct applied research that will provide new information needed to improve the effectiveness of global public health policies and programs.

**Exchange of Information and Lessons Learned**- To

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2000 (No. 37)

19

promote the free flow of accurate technical information on global health problems and to share lessons learned in their control and prevention.

The implementation of this strategy is founded on five approaches. They emphasize that CDC's work will be rooted in sound science, bioethical principles, and local needs; that the primary modality for action will be through partnerships with other institutions; that CDC will engage in those areas that it has established expertise and capability; that long-term relationships with selected countries will be pursued due to the enhanced productivity of such sustained collaborations; and that CDC will assure that it has the workforce and administrative mechanisms required for the full implementation of this strategy.

A set of *Priority Program Areas* has been identified, based on federal commitments, major causes of the global burden of disease, the availability of effective interventions and CDC's comparative advantages. These areas include agency-wide endeavors for surveillance, formation of partnerships, networking, and communications, among others. They also include specific conditions or groups of conditions for which different units within CDC have primary leadership. These include: Emergency Response; Emerging Infectious Diseases; Vaccine Preventable Diseases; HIV/AIDS, STDs, and TB; Non-Vaccine Eradication and Elimination Programs; Reproductive Health; Health Promotion and Chronic Disease Prevention; Tobacco-Use Prevention and Control; Micronutrient Malnutrition; Childhood Lead Poisoning; Toxic Substances and Hazardous Wastes; Occupational Safety and Health, and; Injury.

Corresponding to these Priority Program Areas, a set of *Anticipated Outcomes* describes the results expected from full implementation of this strategy in the coming decade. Among the achievements, they envision:

- Improved country surveillance systems for identifying critical public health problems
- An expanded research capacity generating new knowledge for application to those problems
- A broadened array of global partners with which CDC actively collaborates
- Worldwide eradication of polio and Guinea worm, and regional elimination of measles and lymphatic

filariasis

- Improved immunization coverage and introduction of new childhood vaccines in many countries
- Reduction of HIV infection rates in Africa
- Improved TB cure rates through expanded use of directly observed therapy, short course (DOTS)
- Successful prevention measures leading to reduced malaria infection rates and mortality
- Health promotion programs functioning in the largest countries of the world adopting policies seeking to prevent tobacco use in youth

This *Global Health Strategy* acknowledges the active role CDC must assume to protect the US population and to help fulfill US global health commitments. It also stresses the importance of working in collaboration with partner organizations and of forming new partnerships as needed. Despite the health challenges facing the world at present, CDC believes that the current environment offers important opportunities for making a lasting improvement in global health for the benefit of the United States and the world as a whole.

\*\*\*\*\*

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

*[The Federal Geographic Data Committee (FGDC) is an interagency committee, organized in 1990 under OMB Circular A-16, that 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 17 federal agencies that make up the FGDC (pending DHHS membership) 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>]*

### **FEMA-North Carolina Agreement Signed**

On Friday Sept 15, Governor Hunt and FEMA Director James Lee Witt held a signing ceremony to execute the general agreement [Memorandum of Understanding or MOU] between FEMA and the State of North Carolina for Flood Hazard Information and to make NC a Cooperating Technical State with FEMA. The signing set the stage for a number of actions and for beginning the negotiations on the subagreements. After the signing ceremony the Governor, Director Witt and USDA Deputy Secretary Rominger took a helicopter tour to several towns for additional events and meetings. This

**PUBLIC HEALTH GIS NEWS AND INFORMATION**

November 2000 (No. 37)

20

MOU is a remarkable effort as it shows the high level of cooperation both needed and expected to occur, to address issues critical to the citizens of North Carolina. It also shows the growing recognition of the importance of geospatial information in addressing these issues. [For the full text of the Memorandum of Understanding see: [http://www.fgdc.gov/Fema\\_nc.html](http://www.fgdc.gov/Fema_nc.html)]

**FGDC Press Release, October 21, 1999-GeoData Organizational Initiative Moves Forward:** Fifty geographic information professionals met October 13-15, 1999 in Denver, Colorado to advance an innovative public-private organizational initiative to improve geographic information coordination in the United States. Local, tribal, state, federal, academic, and private sectors were represented. The geodata organizational initiative was one of the recommended actions from the 1999 National GeoData Forum: Making Livable Communities a Reality.

This new organizational initiative addresses the issue of governance of the National Spatial Data Infrastructure. The geospatial community has been trying for several years to conceive of a way to coordinate the activities of the various organizations with a stake in the production, description, delivery, and use of geospatial data. Industry experts estimate that hundreds of millions of dollars are wasted each year due to incompatible naming conventions for geographic features and incompatible schemas for "metadata" that describes data collections; and lack of incentives and procedural models for organizations to share data that they have collected. Solving these and other problems will yield significant savings, expanded capabilities, and much new economic activity.

There appears to be general agreement in the community that what is needed is a governance structure of distributed decision-making and shared leadership. The October meeting focused on discussions with The Chaordic Alliance. The Chaordic Alliance is a not-for-profit formed by Dee Hock to assist in the creation of a new type of organization that balances chaos and order, cooperation and competition through principle-based, non-hierarchical governance structures that make them flexible, open, effective, and durable. Dee Hock is the founder of VISA International, a for-profit, non-stock membership

corporation that processed transactions worth approximately \$1.3 trillion in 1998. VISA International is an example of this new type of "chaordic" organizational structure, though Mr. Hock emphasized that it is not a perfect model for the creation of a new national geodata governance structure.

The geodata community representatives at the meeting agreed to work together in ad hoc teams to conduct preliminary planning for the financing, organization, staffing, and promotional activities for a public-private project to create a chaordic organizational governance structure. The two-year project-to be initiated in late 1999-will work to design the governance structure, with guidance from The Chaordic Alliance. Key objectives include making the governance structure inclusive, democratic, and harmonious with existing efforts and organizations in this arena. Funding will come from both public and private sources. [Contact: **Kathy Covert**, FGDC, at email [klcovert@usgs.gov](mailto:klcovert@usgs.gov); The GeoData Alliance Organizational Initiative is the next logical step in a long and evolving process to "build relationships among organizations to support the continuing development of the NSDI." Over the past 10 years (see history of events at [http://www.geoall.net/brief\\_history.htm](http://www.geoall.net/brief_history.htm)) thousands of people and organizations have contributed their ideas and energy to the challenge of working together across organizational and jurisdictional boundaries.]

\*\*\*\*\*

**FGDC Metadata Trainer Registry (NEW) and Metadata Training Web Calendar**

The Federal Geographic Data Committee (FGDC) is pleased and excited to announce the development of a Metadata Trainer Registry. Metadata training is critical to understanding the importance of metadata and the Content Standard for Digital Geospatial Metadata. From 1994 to 1998, the FGDC staff and partners sponsored or conducted in excess of 150 metadata training workshops. There was also significant metadata training as part of the FGDC Don't Duck Metadata Cooperative Agreement Program. In 1999, the FGDC initiated an effort to create a self-service web portal enabling folks to post and find available metadata training classes. This was accomplished successfully via the FGDC Metadata Training Calendar (<http://www.fgdc.gov/cgi-bin/people/META/WebEvent/>)

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2000 (No. 37)

21

WebEvent). To date, numerous metadata training classes have been posted on the web-based metadata training calendar. Since then, the FGDC has worked to develop an application that enables metadata trainers to self-register\* (see [http://www.fgdc.gov/metadata/toollist/trainers\\_reg.html](http://www.fgdc.gov/metadata/toollist/trainers_reg.html)).

**The combination of the training calendar and the metadata trainer registry will enable individuals or organization to find scheduled metadata training and trainers local to them to address their specific metadata requirements. To help develop metadata trainers, the FGDC, along with its partner the USGS/Biological Resource Division and the New Jersey Department of Transportation, has developed a metadata Train-the-Trainer program. To date over 25 individuals have received this training and are making themselves available as metadata trainers to their organization and partners. The FGDC encourages all metadata trainers to register.**

[Note: A list of the self-registered metadata trainers is located at the Metadata Trainers link (<http://www.fgdc.gov/metadata/toollist/trainers.html>) on the FGDC Metadata home page. Please bookmark this page since this list is expected to grow quickly over the next several months. \*To register as a metadata trainer, go to site [http://www.fgdc.gov/metadata/toollist/trainers\\_reg.html](http://www.fgdc.gov/metadata/toollist/trainers_reg.html). For further information on the Metadata Trainer Registry, please contact Rick Pearsall, FGDC Metadata Coordinator at email: [rpearsall@usgs.gov](mailto:rpearsall@usgs.gov)]

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

<http://www.social-medicine.com/jrf/jrf1.html> See report "Inequalities in life and death: What if Britain were more equal?" by R. Mitchell, D. Dorling and M. Shaw. Policies to reduce inequalities in income and wealth, achieve full employment and eradicate child poverty have the potential to prevent more than 10,000 premature deaths each year - including more than a thousand child deaths. A new study for the Joseph Rowntree Foundation into the 'health gap' between the richest and poorest parts of Britain, argues that even a modest redistribution of income and wealth would have a significant impact on mortality rates in the most disadvantaged areas. Researchers from the Universities of Leeds and Bristol used data from every

parliamentary constituency in England, Scotland and Wales to identify areas where the number of deaths of people under 65 is above the national average. This showed that the highest number of 'excess' deaths occur in the poorest areas, and that more children die in areas where child poverty is highest. Innovative uses of cartograms are included.

<http://www.geoplace.com> The September 2000 issue of *Business Geographics* is on lifestyle segmentation. For example, a Fair Housing Act case in a Texas federal court centers around allegations of the misuse of a lifestyle segmentation system to create racial bias in the online home mortgage lending market. Michael J. Weiss first introduced cluster system methodology to the general public with his 1988 book, *The Clustering of America*. In it, he viewed the nation as 40 neighborhood types, or "clusters," based on the Claritas PRIZM segmentation system. In Weiss' recently published book *The Clustered World*, he reveals how the United States has fragmented into 62 different clusters. He also shows how cluster system methodology has affected marketing in the United States and internationally.

<http://www.regeneration.detr.gov.uk/rs/03100/index.htm> The Department of the Environment, Transport and the Regions (DETR), London, United Kingdom, recently released a summary report entitled, "Indices of Deprivation 2000." The Indices of Deprivation 2000 are measures of deprivation for every ward and local authority area in England. It combines a number of indicators which cover a range of domains (income, employment, health deprivation and disability, education skills and training, housing and geographical access to services) into a single deprivation score for each area. The report also summarizes the procedures taken to create the overall Index and provides summaries of the Index at the local authority level. This summary report, the ward level Indices, and district level summary measures can be downloaded here.

<http://www.cdc.gov/ogh/pub/strategy.htm> This is the documentation for a new CDC/ATSDR global health strategy entitled "Working with Partners to Improve Global Health: A Strategy for CDC and ATSDR."

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2000 (No. 37)

22

Readers will find both the full text of the strategy document and a stand-alone executive summary (reproduced in its entirety in Section VI., this edition). Printed copies of either document may be ordered by sending an e-mail to [fbj2@cdc.gov](mailto:fbj2@cdc.gov) and will be distributed in mid-November.

<http://www.pitt.edu/~super1/lecture/lec1291/index.htm>  
“Introduction to the Use of Geographic Information

Systems in Public Health”: For a general discussion on the mapping of health data and confidentiality issues, you may want to visit an online lecture by Elio Spinello, California State University, Northridge, for the Global Health Network Epidemiology Supercourse at the University of Pittsburgh. There are currently 104 lectures in the global supercourse with 1246 faculty already in 104 countries.

### Final Thought(s)

#### The National Spatial Data Infrastructure: New Developments in Crisis Response and Management

**“The National Research Council 1999 Crisis Management Workshop reported that to achieve an impact in the crisis management community, considerable interaction is needed with the information technology research community. The Multi-Sector Crisis Management Consortium is creating the Research Center as a direct response to that report and the needs of the Multi-Sector Crisis Management Consortium”** [See <http://www.ncsa.uiuc.edu/mscmc/mscmrc.html>]

Those in the field of crisis response and management are pushing at the Information Technology (IT) envelope. As our scientific community heads towards a real-time digital earth there are many lessons soon to be conveyed in the timely and efficient deployment of crisis oriented geospatial data. Nowhere is this more evident than in the developments of the new Multi-Sector Crisis Management Consortium (MSCMC) and its new (virtual) Research Center. The MSCMC targets research-critical IT issues to develop next generation advanced IT applications for crisis response and management. More about the Research Center in a moment.

The National Response Center (see “Final Thoughts: One Step Closer to Comprehensive Emergency Management-The U.S. Coast Guard’s National Response Center,” May 2000 Edition), U.S. Coast Guard, leads MSCMC. The communication center for MSCMC is the Alliance Center for Collaboration, Education, Science and Software (ACCESS) in Arlington, VA. NRC also is the nation’s lead agency to respond to national emergencies and disasters. Monthly meetings and special workshops of MSCMC are held at ACCESS.

Supportive supercomputing technologies are about to play an important role in how MSCMC conducts business. The National Center for Supercomputing Applications (NCSA), and its National Computational Science Alliance (Alliance), will provide MSCMC the Access Grid, a collaborative virtual workspace that allows group-to-group, real-time video conferencing over the Internet. NCSA staff, both at ACCESS and the University of Illinois at Urbana-Champaign, will support computational science, data mining, computer visualization and advanced multi-dimensional immersive user interface activities. Alliance partner Argonne National Laboratory is leading the Alliance Access Grid development efforts.

During the next two years the Alliance Access Grid project will prototype a number of Access Grid nodes and use these prototypes to conduct remote meetings, site visits, training sessions and educational events. Capabilities will include: high-quality multichannel digital video and audio; prototypic large-format display; integrated presentation technologies (PowerPoint slides, mpeg movies, shared OpenGL windows); prototypic recording capabilities;



## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2000 (No. 37)

23

integration with Globus for basic services (directories, security, network resource management); macroscreen management; integration of local desktops into the Grid, and; multiple session capability. The Access Grid nodes will also provide a research environment for developing of distributed data and visualization corridors and for studying issues relating to collaborative work in distributed environments.



### The National Technology Grid

The MSCMC Research Center conducts fundamental IT research that has been identified as critical to crisis response and management. The Research Center will operate as a virtual organization led by researchers at consortium member institutions. Projects led by the Research Center are funded by a variety of sources including the NSF Digital Government Program, Consortium participant fees, and other grant opportunities. The Research Center will focus on issues relating to the use of emergency information technologies that compliment the development of the Global Disaster Information Network (GDIN), pursuant to the Executive Order signed by President Clinton on April 27, 2000. Thomas Prudhomme, Research Center Director, and Janet Thot-Thompson, Executive Director, are staff from the National Center for Supercomputing Applications (NCSA).

Another MSCMC objective is to develop a universal website that would serve as a prototype for advanced Web interfaces of the future. It would feature collaborative tools, access to distributed computing sites, and other unique services that are currently unavailable to the crisis management community. As stated by Syed Qadir, NRC Director and Acting Chair, MSCMC, "This organization will nurture a partnership between the public and private sectors that will not only address new ways to plan for, and respond to, crises, but will investigate and recommend how to use cutting-edge technologies to decrease our vulnerability to man-made disasters, including terrorist activities, or natural disasters."

The MSCMC October 18, 2000 meeting, at ACCESS, included a variety of informational and technical presentations. These included: Joseph D. Szwarcop, Director, Committee Support Office, Global Disaster Information Network, **Global Disaster Information Network (GDIN) Brief Overview US-Russia**

**PUBLIC HEALTH GIS NEWS AND INFORMATION**

November 2000 (No. 37)

24

**Demonstrations and Exercise Presentation (<http://www.gdin.org/>)-** These demonstrations were hosted at ACCESS. The United States and Russia participated in a bilateral disaster information exchange exercise from September 20 until September 22. The exercise was a vital first step in the ongoing establishment of the Global Disaster Information Network (GDIN), which is intended to link all emergency management assets via Internet communication; **Lessons Learned from the US-Russia GDIN Exercise**, Captain D "Mike" Egan, Chief, Office of Command, Control and Preparedness, U.S. Coast Guard Head Quarters, Chief, National Response Center; Fred Adler, Director, Washington Operations, RCI, Ltd, The Global Consortium for the HPCC Community, **Conference Summary: First International Global Disaster Information Network (GDIN) Information Technology Exposition & Conference, Hawaii, Oct 9-11 (<http://www.irim-int.com/CONF/GDIN/gdin.html>)-** Explored the needs of participants in government, business, and nonprofit sectors related to emergency management information technologies, their development, and operational use; ***GeoWorlds: GeoSpatial Information Management***, Robert Neches, Director, Distributed Scalable Systems Division, Information Sciences Institute; **GIS Information Integration**, Doug Johnston, University of Illinois, Urbana Champaign, and; **Next Steps**, Moderator: Janet Thot-Thompson, Associate Director, ACCESS.

[Editor: Appreciation is extended to Janet Thot-Thompson, Associate Director, ACCESS, and MSCMC Acting Executive Director, for her kind assistance to me in preparing this report. The next scheduled meeting of MSCMC is November 15, 2000. Janet may be reached at voice (703) 248-0072 or email [jtt@ncsa.uiuc.edu](mailto:jtt@ncsa.uiuc.edu)]

Charles M. Croner, Ph.D., Editor, ***PUBLIC HEALTH GIS NEWS AND INFORMATION***, Office of Research and Methodology, National Center for Health Statistics, e-mail [cmc2@cdc.gov](mailto:cmc2@cdc.gov). While this report is in the public domain, the content should not be altered or changed.

**Please join us **November 28** for the "Gateway to the Earth"  
and 13<sup>th</sup> Annual NCHS Geography Awareness Week Program**

Our Web Page is located at [http://www.cdc.gov/nchs/about/otheract/gis/gis\\_home.htm](http://www.cdc.gov/nchs/about/otheract/gis/gis_home.htm)