

PUBLIC HEALTH GIS NEWS AND INFORMATION

March 1999 (No. 27)

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

Selected Contents: Conferences (pp. 1-2); (pp. 6-8); Special Reports (pp. 8-9); GIS Update (pp.10-15); Website(s) of Interest



News from GIS Users (pp. 2-6); GIS Outreach Lectures (pp. 9-10); DHHS and NCVHS (p.15); Final Thoughts (p.16)

I. Public Health GIS (and related) Events

SPECIAL CDC/ATSDR GIS LECTURE: "Dead versus Live Graphs: A Basis for New Interactive Exploratory Data Analysis (EDA) Techniques," David Desjardins, Statistical Research Division, U.S. Bureau of the Census, March 31, 1999, NCHS Auditorium, 2:00-3:15 P.M. Sponsored by NCHS Cartography and GIS Guest Lecture Series and CDC/ATSDR's Behavioral and Social Science Working Group [see abstract this edition; Envision is available to offsite CDC/ATSDR locations through your Envision Coordinator]

☛ 16th Annual Behavioral Risk Factor Surveillance Survey (BRFSS) Conference, Centers for Disease Control and Prevention, May 5-7, 1999, Minneapolis, MN [Contact: Behavioral Surveillance Branch at (770) 488-5292 or see <http://www.cdc.gov/nccdphp/brfss>]

☛ A New York Academy of Sciences Conference, "Socioeconomic Status and Health in Industrial Nations: Social, Psychological and Biological Pathways," National Institutes of Health, May 11-12, 1999, Bethesda, MD [See announcement this edition]

☛ Twelfth Annual GIS Conference, "The Internet and GIS: Exploring New Mapping Opportunities," Towson University, June 1-4, 1999, Baltimore, MD [Contact: Jessica Haddock at voice (410) 830-3887 or email jhaddock@towson.edu]

☛ 1999 National GeoData Forum, U.S. Department of the Interior, June 7-9, 1999, Washington, D.C. [See: www.fgdc.gov]

☛ 9th International Symposium in Medical Geography, "An Agenda for the Geography of Health and Health Care in the Next Century," June 18-23, 1999, Montreal, Canada [Contact: Jean Pierre Thouez at voice (514) 343-8054 or email thouezj@ere.umontreal.ca]

☛ 33rd National Immunization Conference, Centers for Disease Control and Prevention, June 22-25, 1999, Dallas, TX [Contact: Joe Beaver at voice (404) 639-8212 or email jhb5@cdc.gov]

☛ Nineteenth Annual ESRI International User Conference, "Geography at Work," July 26-30, 1999, San Diego, CA [See: www.esri.com/events/uc]

☛ National Conference on Health Statistics, "Health in the New Millennium: Making Choices, Measuring Impact," National Center for Health Statistics, CDC, August 2-4, 1999, Washington, D.C. [Contact: Barbara Hetzler at (301) 436-7122, ext. 148 or see: www.cdc.gov/nchswww/nchshome.htm]

☛ Joint Statistical Meetings of the American Statistical Association, "Statistical Science at the Interface," August 8-12, 1999, Baltimore, MD [See: www.amstat.org]

☛ 11th General Assembly of the International Cartographic Association and 19th International Cartographic Conference, August 14-21, 1999, Ottawa, Canada [Contact: voice (613) 992-9999 or email ica1999@ccrs.nrcan.gc.ca]

☛ 10th Annual Convention of the American Psychological Association, August 20-24, 1999,

Boston, MA [Contact: www.apa.org]

II. News from GIS USERS

(Please communicate directly with colleagues on any issues)

A. General News (and Training Opportunities)

1. From **James Merchant**, Center for Advanced Land Management Information Technologies: In November 1999 the American Society for Photogrammetry and Remote Sensing (ASPRS) will publish a special "theme" issue of the journal Photogrammetric Engineering and Remote Sensing (PE&RS) dealing with "GIS/LIS in State and Local Government." A few of the articles will be invited (for example, Lisa Warnecke has agreed to provide a lead article). However, we are also seeking contributed manuscripts. Papers dealing with applications of GIS/LIS, GPS and related technologies (especially remote sensing) at state and local levels are sought. Papers dealing with the following are especially encouraged: unique and successful case studies of applications; review papers that address an area of applications (e.g., public health); papers dealing with administrative, political, economic or institutional matters, and; basic research that addresses issues related to state and local applications of GIS. Guidelines for authors are available at the ASPRS web site (<http://www.asprs.org>) or can be found in any issue of PE&RS. {Contact: Jim at voice (402) 472-7531 or email jm1000@tan.unl.edu}

2. From **Daniel Exeter**, University of Auckland (NZ): The participants at last years GIS in Public Health conference at San Diego may remember my poster presentation, "VIS~EASE" regarding the visualization of disease distributions. I have since completed my MA thesis, which discusses using Network Analysis as a means of modeling disease, examines different visualization techniques for describing different spatial and/or temporal patterns, and builds on the visualization framework presented at the conference. For those interested in these topics, a copy of the thesis is available in PDF format from <ftp://ftp.geog.auckland.ac.nz/pub/outgoing/dxthesis.zip>. [Contact: Dan at email d.exeter@geog.auckland.ac.nz]

3. From **Ronald Abeles**, National Institutes of Health: "Socioeconomic Status and Health in Industrial Nations: Social, Psychological and Biological Pathways," May 11-12, 1999, National Institutes of Health, Bethesda, MD: There is growing evidence that socioeconomic status (SES) is associated with health in a graded fashion. This effect operates all up and down the SES hierarchy; at each step along the hierarchy, improvements in social status generate improved health. No one SES indicator is key; the association with health occurs with a variety of indicators at both the individual level (e.g., income, education, occupation) and the social level (e.g., neighborhood and community characteristics).

Although the existence of this gradient is well established, less is known about the mechanisms by which this occurs. The objectives of this conference are to examine the data on SES and health and, more broadly, on social ordering and health in humans and animals; to explore some of the pathways by which SES may influence health; and, examine policies which could address the social inequalities associated with the SES gradient. The conference will bring together some of the best known experts in neurobiology, psychology, public health, epidemiology, occupational medicine, and other fields for discussion and exchange. [Contact Ron at NIH's Office of Behavioral and Social Sciences Research, at voice (301) 594-5943 or email Ronald_Abeles@nih.gov]

4. From **S. Vandevander**, UCGIS: The University Consortium on Geographic Information Science (UCGIS) will hold its fourth annual retreat in Minneapolis, Minnesota from June 23 to 26, 1999. The theme of this summer's retreat is "Application Challenges for GIScience: Implications for Research, Education, and Policy". We will focus on a set of challenging GIScience applications judged to be important in the quality of life in our communities, ranging from the local to the global. We will explore each application in terms of UCGIS educational and research challenges, and for its policy implications. We propose to examine the following topics: 1. Crime Analysis; 2. Emergency Preparedness and Response;

3. Transportation Planning and Monitoring; 4. Public Health and Human Services; 5. Urban and Regional Planning; 6. Planning and Monitoring Community Parks & Open Space; 7. Involving the Public in Solving Community Problems; 8. Other applications considered indispensable by the UCGIS membership. [Contact: S. Vandevander at email [svandevander@geo.wvu.edu]

5. From **Cynthia Warrick**, Coordinator 1999 HBCU GIS Summer Faculty Workshop (Call for Funding Partners): As you know, the Advanced Historical Black Colleges and Universities (HBCUs) GIS Summer Workshop will take place in Accra, Ghana this year, as part of the African-American Summit. The GIS Workshops and panels are included in the Summit Program and we are very excited about that. Funding, however, has been slow, so it looks like we may only be able to bring 3 HBCU faculty to participate, unless your agencies come through soon. The Introductory Workshop will take place at the Fish & Wildlife GIS Training Center in Shepardstown, WV. We will select 10 to 12 faculty from HBCUs that have not participated in the past, in order to broaden the program's scope. We are encouraging (and will solicit ESRI support) that previous participants conduct GIS workshops for faculty and students at their universities to expand the GIS use on their campuses. In fact, I am coordinating, with assistance from BLM, a GIS workshop for faculty at Howard's School of Architecture & Planning. The Intro workshop will take place on June 14-19th; and the Advanced is May 15-22.

Because the dates are earlier this year, we need your agency contributions by April. Please remember that this workshop is eligible for funding through your Office of Small & Disadvantaged Business, as doing business with HBCUs. Therefore, a grant mechanism is not needed; only a purchase order for "training" is required. Your contribution of \$5,000 or more will be greatly appreciated. Please contact me or Lee De Cola, USGS, if you have any questions. [Editor: This is an important opportunity to advance your agency's role in support of GIS for an outstanding HBCU GIS training program; Contacts: Cynthia at voice (202) 806-4919 or Lee at (703) 648-4178]

B. Technical News

6. From **Tom Richards**, PHPPPO CDC (Trends in GIS/A Model Sampling Plan for Selecting Sentinel LHDs): For those interested in trends over time in GIS, the following report is of potential interest: Warnecke L, Beattie J, Kollin C, Lyday W. "Geographic Information Technology in Cities and Counties: A Nationwide Assessment. Washington, DC: American Forests, 1998. For those in NACCHO, a courtesy copy most likely could be obtained from the National Association of Counties (since Winifred Lyday is one of the authors, and works for the National Association of Counties). For others, copies can be purchased (cost about \$30) from either American Forests (<http://www.amfor.org>) or from ESRI (tel: 1-800-447-9778). Examples of information included are: for a sample of 200 cities and counties, the use of GIS has increased from 40% in 1992 to a predicted 87% by the end of 1997; ESRI products such as ARC/INFOo and ArcView dominate the local government market; and a breakdown on the various types of departments within local government departments that are using GIS (most frequent users are planning departments, public works, and utilities).

For those interested in developing a model sampling plan for selecting sentinel LHDs, the methods used to select the sample of 200 cities and counties also might be of potential interest. For example, Beale Codes were used to measure urbanization of counties; and samples focused on cities over 100,000; cities 25,000 to 100,000; counties greater than 50,000; and counties less than 50,000. Townships were excluded. [Contact: Tom at voice (770) 488-3220 or email tbr1@cdc.gov]

7. From **Kristen O'Grady** U.S. Bureau of the Census (FGDC Framework): The Framework Introduction and Guide is an excellent text for those getting started with the National Spatial Data Infrastructure (NSDI) as well as describing "best GIS practices" to share common data. The framework is a collaborative effort to create a widely available source of basic geographic data. It provides the most common data themes geographic data users need, as well as an environment to support the development and use of these data. The

framework's key aspects are seven themes of digital geographic data that are commonly used; procedures, technology, and guidelines that provide for integration, sharing, and use of these data; and institutional relationships and business practices that encourage the maintenance and use of data. The framework represents "data you can trust"--the best available data for an area, certified, standardized, and described according to a common standard. It provides a foundation on which organizations can build by adding their own detail and compiling other data sets. This document (with embedded slide show) may be found at <http://www.fgdc.gov/framework/frameworkintro/guide/>. [Contact: Kristen, FGDC Social and Cultural Demographic Data Subcommittee Administrator, at voice (301) 457-1056 or email kogrady@geo.census.gov; Editor: Note also the 1998 Reports on NSDI Implementation can be found at http://www.fgdc.gov/98_nsdireports/nsdireports.html]

8. From **Philip Bouton**, National Association of County and City Health Officials: EPA conducted meetings on how to bring Landview to local medical and public health communities, on February 18-19 [1999 Medical Communities Stakeholders Meeting]. Selected agenda items included: Demonstration of Environmental and Public Health Community Profile System (Dr. John Pine, Louisiana State University); Defining the Data Needs of the Community Health Profile System and Discussion of the Interview Form (Carolyn Scott, Facilitator); and Next Steps-Piloting the Prototype (Diane Sheridan, EPA, Office of Pollution Prevention and Toxics). [For the agenda, list of invitees, project fact sheet, and draft Personal Environmental Health Exposure and Environmental Health Exposure Forms, contact Diane at sheridan.diane@epamail.epa.gov]

C. Internet News

9. From **Allison Bingham**, CT Children's Medical Center: Our website is under construction but we will be featuring some of our health services and epidemiological-related thematic map coverage on this website as the hospital's website redesign is up and

running. Our mapping services have included such topics as child care and school readiness, lead toxicity and anemia in Hartford, population projections for 3 year olds using child immunization data by school district in Hartford and related attributes, infant mortality, prenatal care, and birth rates by neighborhood in the City of New Haven, maps of children with special health care needs serviced by our hospital throughout the state of Connecticut to name a few, and maps featuring different aspects of our statewide 211 Infoline services - where demand exists by town and where services are located. We're currently working with the State Board of Education on a large mapping project to digitize school districts statewide and will be developing a thematic map series to look at child health issues by school district. All of these projects are available for showcasing using ARCVIEW or exported into various forms including MIF, JPEG, or GIFF. [Contact: Allison, Child Health Data Center, at voice (860) 545-0968 or email abingha@ccmckids.org]

10. From **Jay McAuliffe**, Office of Global Health, CDC: The Office of International and Refugee Health, DHHS, is asking us to review issue papers that will be taken up at the PAHO meeting on Planning and Programming, March 25-26, to provide comments to the representatives at that meeting from DHHS. One of the documents, SPP32/10, is on Geographic Information Systems in Health (see <http://www.paho.org/english/ags/agsspp32.htm>). Feel free to share this with others in CDC/ATSDR that you feel may be interested in reviewing the document as well. Please send any comments you have on this document to Lou Valdez, by March 12, with a copy to me. [Contact: Copy to Jay at voice (770) 488-1072 or email zfc7@cdc.gov; comments to Lou at email Mvaldez@osophs.dhhs.gov]

11. **Michael R. Meuser**, Mapping for Community Right-To-Know: I've just completed a prototype Web Map project of multiple toxic point sources in Santa Cruz and Santa Clara County. You may read about this and view the interactive maps at: <http://www.mapcruzin.com/allfacmap.htm>. I did this

as an exercise in beginning to visualize the potential of being able to map a fuller set of point sources than TRI provides - something more like the EPA Chemical Accident Prevention and Risk Management Planning (RMP) if and when it becomes available. Also, again when and if the data is available from EPA, the Cumulative Exposure Project (CEP) data could be added to the Web Maps. We could then see the toxic point sources that are most likely to be the cause of the toxic air concentrations provided by the CEP data. For more on CEP and RMP go to: <http://www.mapcruzin.com/rtkmornews.htm> [Contact: Mike at meuser@mapcruzin.com]

12. Editor (**1999 National GeoData Forum**): At the February 24, 1999 FGDC Steering Committee Meeting, John Moeller (FGDC Staff Director, USGS) discussed the upcoming 1999 National GeoData Forum: Making Livable Communities a Reality. The Forum will be held June 7-9, 1999 in the Washington DC area. The focus of the Forum will be on Livability Communities and the importance of effective use of geographical information to citizens and decision makers. The Forum will include many important officials from government, academia, and the private sector. The Forum will be structured for presentations, demonstrations, workshops, and will conclude with a Policy Roundtable. Both Mr. Moeller and Dr. Schaefer (Department of the Interior) emphasized the opportunities of the GeoData Forum for continued progress and developing the NSDI. All agencies and organizations are encouraged to participate in this important gathering. Information about the GeoData Forum can be found On-line at <http://www.fgdc.gov/99Forum/>.

D. CDC ATLANTA GIS NEWS

13. From **Janet Heitgard**, ATSDR: The next meeting of the CDC Atlanta GIS Users Group is scheduled for Tuesday, March 16 at 9:00 a.m. in Conference Room A, Building 33, Executive Park. The room is reserved for two hours. [Contact: Janet Heitgard at voice (404) 639-0602]

[Editor: A small group of CDC staff who use GIS in Atlanta met informally on February 2, 1999, in

order to talk about what they are currently doing in GIS and where they would like to go in the future. One of the topics of discussion was that the current pricing structure for GIS software and Internet servers appeared to limit wider use. Thus, a question of considerable interest was whether there might be some way for CDC to negotiate a group site license and/or a "academic institution" lower pricing structure for GIS products. Jerry Curtis, NCEH, mentioned that ESRI reports there are at least 100 copies of ArcView alone at CDC.

Along these lines, the group also concluded that additional information would be helpful on three basic questions: 1) what types of GIS software are currently in use within CDC, and how many copies are there; 2) what types (and how many copies) of GIS software are needed over the next year, and; and 3) what is the organizational/management structure for GIS activities within the various CIOs (for all locations). The group is working on a survey instrument for CDC/ATSDR GIS Users.]

Also, in response to a question on the availability of inhouse GIS training, Virginia Lee, ATSDR, reports that ATSDR has available a 2-day short course "Introduction to GIS for Non-users," in addition to a course on ArcView. The course offered for nonusers, in October, 1998 at Executive Park), followed the below outline:

DAY ONE: 1:00-1:30, WELCOME AND INTRODUCTION (Bill Henriques)- **Objective:** To provide the participants an overview of the course work that will be covered in this class, what will be expected as a class participant, and what we intend to accomplish during the two days of the course.

1:30-3:00, INTRODUCTION TO GIS-LECTURE (Melissa Massaro)- **Objective:** To provide participants a basic working knowledge of geographic information systems (GIS) and a basic understanding of the terms used in GIS. Materials: Handouts, a Glossary of Terms. A list of learning resources (books, papers, and Internet web sites).

3:10-5:00, INTRODUCTION TO BASIC GEOGRAPHIC AND CARTOGRAPHIC CONCEPTS IN GIS (Kevin Liske/Andy Dent)- **Objective:** To provide participants a basic working knowledge of

geographic and cartographic foundations for GIS, including such topics as map scale, map projection, and the properties of geographic features. Materials: handouts, glossary, list of learning resources (books, papers, and Internet web sites).

DAY TWO: 8:00-9:00, GEOGRAPHIC DATA SOURCES AND THEIR USES (Paul Calame)-

Objective: Introduces participants to data available for incorporation into a GIS. Lecture will focus on available spatial and environmental data, including using the Internet for sources of data. Materials: Handouts with definitions, resources, and explanations 9:00-10:05, ACQUIRING AND USING DEMOGRAPHIC DATA IN GIS (Janet Heitgerd)- **Objective:** Introduces participants to TIGER and Census data available from ATSDR's Spatial Analysis Activity (SAA), clarifies what Census terms mean (i.e, block, block group, tract) and how to acquire useful portions of the census data set. Materials: Handouts with definitions, resources, and explanations.

10:15-11:00, ACQUIRING AND USING HEALTH OUTCOME DATA IN GIS (Ginny Lee)- **Objective:** Discuss the availability of morbidity/mortality data, their sources, uses and potential limitations. Materials: Handouts with definitions, resources, and explanations. 11:00-12:00, BASIC GIS FUNCTIONS: WHAT IS WHERE? AND WHY IS IT THERE? (Melissa Massaro)- **Objective:** To allow participants a better sense of database management within a GIS, geographic searches, descriptive statistics and spatial analysis.

1:00-2:30, USING GLOBAL POSITIONING SYSTEMS (GPS) TO OBTAIN COORDINATE DATA (Kevin Liske)- **Objective:** To provide participants with an overview of GPS, emphasizing their use in health assessments and exposure investigations. Lecture on basic concepts, and then a demonstration and discussion conducted outside the building. Materials/ Handouts from Trimble navigation and terms incorporated into glossary.

2:40-3:45 THE USE OF GIS IN EXPOSURE ASSESSMENT (Paul Calame)- **Objective:** To demonstrate the use of GIS in exposure assessment through the use of a case study of a chlorine spill.

3:45-4:30, THE USE OF GIS FOR PUBLIC HEALTH

ASSESSMENTS AND HEALTH STUDIES (Andy Dent)- **Objective:** To demonstrate the use of GIS in identifying areas of contamination and study participants.

4:30-5:00, SAAG INTRANET MAPSERVER (Paul Calame)- **Objective:** To demonstrate the latest ways in which GIS has been used on the Internet to disseminate information.

DAY THREE: 8 : 0 0 - 9 : 0 0 , COMMUNICATING ENVIRONMENTAL HEALTH ISSUES USING GIS OR IMPROVING RESPONSE TO CITIZENS WITH UNDERSTANDABLE MAPS AND DATA. (John Mann)- **Objective:** To demonstrate the use of GIS as a query system for addressing citizen's concerns.

9:00-10:00, USING GIS TO ADDRESS A PUBLIC HEALTH CHALLENGE (Andy Dent)- **Objective:** Using the London cholera epidemic of 1854 and Dr. John Snow's landmark map as a backdrop, participants will be introduced to advanced GIS methods including address matching/geocoding, creating a point theme from coordinates, and proximity analysis.

10:00-11:00, SELECTING A GIS (Bill Henriques)- **Objective:** To provide participants with information on the types of programs available and the system requirements and some discussion of cost and other issues e.g., offering a basis on which to select a GIS.

11:00-11:30, DISCUSSION OF GIS ISSUES (All Instructors)- **Objective:** To provide and explanation of issues that are important to consider in assuring spatial accuracy, how basemaps and attribute maps are created in a GIS from databases and other sources, (e.g. generating attribute maps from lat/longs, transforming AutoCAD files, projections and conversions, electronic transfers of data such as FTP or e-mail, etc.).

11:30-12:00, SESSION WRAP-UP AND EVALUATION [Course Contact: Virginia Lee at voice (404) 639-6056 or email cvl1]

III. GIS Outreach

(Editor: All solutions are welcome and will appear in the next edition; 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 **Vishnu-Priya Sneller**, NIP CDC: I came across an article where they applied "Kriging" method to predict spread of influenza during a single season in France: Carrat F and Valleron A.J. Epidemiologic mapping using the "Kriging" Method: Application to an influenza-like illness epidemic in France. *Am J. Epidemiology* 1992; 135: 1293-1300. I am contemplating proposing a similar approach to describe influenza activity in the U.S. However, before I rush to write a concept I would like a review of this paper from as many as have the interest and time. If there is a better geographical approach than Kriging, please tell me why this is better. I would use 2 different data sources: one for 'flu-like illness reports that Carrat & Valleron used in their paper and the other from the WHO collaborating laboratory network. The latter may not have the address of the case and I am not sure whether the address of the reporting laboratory would be appropriate. Viewing the maps together may provide further insights into influenza-related illnesses. Thank you all in advance. [Contact: Vishnu-Priya Sneller, Epidemiologist, at voice (404) 639-8257 or email vbs6 @cdc.gov]

✉ From **Kate MacQueen**, NCHSTP CDC: I am working on a paper on defining and operationalizing 'community' for public health. In it, we identify 5 dimensions that appear to have both empirical and theoretical validity. We have labeled one of those dimensions "locus" because it centers on identification with a place, location, or settings. The other dimensions include joint action, social ties, shared perspective, and diversity. I am briefly reviewing analytic & methodological approaches that can be used to operationalize the dimensions, and would like to include a couple of paragraphs on GIS and SDA. I have some very technical papers by Luc Anselin and some very general articles/websites that tend to focus on the software, neither of which really speaks to the public health dimension. Would you be able to point me toward some public health-oriented publications that effectively illustrate the value of the approach for

addressing community-level problems? [Contact: Kate, Research Anthropologist, HIV Vaccine Unit, Epidemiology Branch, Division of HIV/AIDS Prevention, at voice (404) 639-6152 or email kmm3 @cdc.gov]

✉ From **Sarah Greening**, Cardiff, UK: I wondered if anyone could give me advice- I am working with ward boundary data for Wales from 1991 at the moment but these changed significantly in 1996. I have the opportunity of a little end of year money to update my boundary data. My usual source of data does not have any updated ward boundary data available and so I have gone to another company (Dataview Solutions) to ask for a quote. They say that they update their ward data each year and so it is available and they are getting back to me with a price. They mentioned that 'postcode sector' boundaries contain virtually the same number of households and are cheaper to purchase-I hadn't heard of anyone using these in the health-GIS field-Is there a reason for this? [Contact: Sarah, Research Fellow/CROPS Project Manager, Evaluation Unit, Breast Test Wales at email sarah. greening @velindre-tr.wales.nhs.uk]

Early response from **Peter Halls**, York, UK: In the UK, PostCode Sector boundaries delimit the 'XY4 6' zone of postal delivery addresses. They may be co-terminus with electoral wards, but the purpose of the PostCode is to enable the delivery of mail. It is true that a Sector contains about the same number of delivery points as there are habitations in a ward...but that is really where the similarity ceases reliably. Which you should use depends upon the nature of your data. If your data are recorded in units of electoral wards, then electoral wards you must use...similarly for PostCode Sectors- although if you have individual addresses you can easily aggregate. Wards will be co-terminus with local authority boundaries...PostCodes may not be relied upon in this respect. You may, of course, need to use both. One thing to watch: PostCodes are not static. As population changes, PostCodes will be changed more quickly to reflect the changes than boundaries dependent upon Act of Parliament. When using PostCodes, you may still not be comparing like with like over time-especially if you

are working with an area of expanding or contracting population. [Contact: Peter at pjh1@york.ac.uk]

Early response from **George Yocher**, Delaware Division of Public Health: I'm writing from the States. I assume your postalcode sectors are similar to our postal ZIP Codes. ZIP codes have been used for geographic areas of analysis, especially by marketing companies. Marketing companies have amassed large amounts of information based on ZIP codes. Insurance companies (health and otherwise) sometimes use the ZIP demographics for their internal analysis. Why ZIP codes are so widely used by different industries I'm not sure but I think it goes back to direct mail marketing. The post office had the boundaries with ID code (ZIP code) and the delivery system. The marketing companies had an easy time fitting into the scheme.

ZIP codes are not the greatest geographic area for analysis because: They are designed by the post office for ease of mail delivery, not because of underlying demographics. The boundaries can change from year to year especially if the population of an area is growing. Census boundaries (or other political boundaries) change every ten years or even less frequently. ZIP codes can cover a large area. Census areas are usually much smaller than a ZIP code area. Because of this large area, it's possible to have a very heterogeneous population in a ZIP code. Eg. the west side of a ZIP maybe high income, while the east side low income, hence the average income of the ZIP is a poor variable to characterize the ZIP. Some ZIPs are just for postal boxes at the post office. They do not represent any geographic area. One cannot always assume that people using postal boxes are living in the nearby area.

ZIPs can be useful in that everyone knows what ZIP they live in; some might know their election district; very few people, if any, know their Census area. This makes it easy for presentations using geographic analysis. I do know that Fulton County, Georgia, used a marketing approach using ZIP codes to characterize the community. With marketing data they found out where the high alcohol sales were, high cigarette sales, etc., and used the information to plan health programs. I think using some postal code market data with an overlay of census boundary demographics

can provide very useful analysis for health programs. The problem for the public sector (the health department) is paying for the market data. You can find more info on ZIP codes at: <http://www.oseda.missouri.edu/uic/ZIP.resources.html>. This site explains ZIP codes and the problems very well. [Contact: George at email GYocher@state.de.us]

IV. Special Reports

(Submissions are open to all)

❖ **ATLAS OF RESPIRATORY DISEASE MORTALITY, UNITED STATES: 1982-1993**, Kim, J.H., Division of Respiratory Disease Studies, National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention: Preface-The *Atlas of Respiratory Disease Mortality, United States: 1982-1993* presents maps showing geographic distributions (by health service area) of mortality associated with selected respiratory conditions that together represent nearly all respiratory diseases. For categories of traditional occupational lung diseases mapped in this atlas (i.e., the pneumoconioses, including coal workers' pneumoconiosis, asbestosis, silicosis, byssinosis, and other unspecified pneumoconioses), nearly all cases are attributable to hazardous occupational exposure. NIOSH has previously published maps showing geographic distributions (by county) of pneumoconiosis mortality in the United States [see Work-Related Lung Disease Surveillance Report, DHHS (NIOSH) Publication No. 96-134, 1996].

For other respiratory disease categories mapped in this atlas, cases frequently occur in the absence of hazardous occupational exposure, and smaller proportions of cases—much smaller for some disease categories—are therefore considered attributable to occupational exposure. Nevertheless, for each of the disease categories mapped in this atlas, occupational causes have been documented. The author hopes that the geographic patterns of respiratory mortality presented in this atlas will stimulate and aid further study of occupational etiologies of a variety of respiratory diseases, not just those traditionally referred to as occupational lung diseases.

❖ **BEHAVIORAL RISK FACTOR ATLAS**, Hahn RA¹, Heath GW², Chang MH¹, Behavioral Risk Factor Surveillance System State Coordinators. Cardiovascular disease risk factors and preventive practices among adults—United States, 1994: A behavioral risk factor atlas. *MMWR Surveillance Summary* 1998;47(SS-5):35-69. **Abstract:** **Problem/Conditions.** Cardiovascular disease (CVD), including coronary heart disease (CHD) and stroke, is the leading cause of death in the United States, and state rates of CVD vary by state and by region of the country. Several behavioral risk factors (i.e., overweight, physical inactivity, smoking, hypertension, and diabetes mellitus) and preventive practices (i.e., weight loss and smoking cessation) are associated with the development of CVD and also vary geographically. This summary displays and analyzes geographic variation in the prevalences of selected CVD risk factors. Reporting Period: 1994 (1992 for prevalence of hypertension).

Description of System: The Behavioral Risk Factor Surveillance system (BRFSS) is a state-based, random-digit-dialing telephone survey of noninstitutionalized adults, aged greater than or equal to 18 years; 50 states and the District of Columbia participated in BRFSS in 1994, and 48 states and the District of Columbia participated in 1992. **Methods:** Several different analyses were conducted: a) analysis of state risk factor and preventive practice prevalences by sex and race (i.e, Black and White); b) mapping; c) cluster analysis; d) correlations of state prevalence rates by sex and race; and e) regression of state risk factor prevalences on state CHD and stroke mortality rates.

Results: Mapping the prevalence of selected CVD risk factors and preventive health practices indicates substantial geographic variation for Black and White men and women, as confirmed by cluster analysis. Data for Blacks are limited by small sample size, especially in western states. Geographic clustering is found for physical inactivity, smoking, and risk factor combinations. Risk factor prevalences are generally lower in the West and higher in the East. White men and White women are more similar in state risk factor rates than other race-sex pairs; White

women and Black women ranked second in similarity. State prevalences of physical inactivity and hypertension are strongly associated with state mortality rates of CVD.

Interpretation: Geographic patterns of risk factor prevalence suggest the presence (or absence) of sociocultural environments that promote (or inhibit) the given risk factor or preventive behavior. Because the risk factors examined in this summary are associated with CVD, further exploration of the reasons underlying observed geographic patterns might be useful. The BRFSS will continue to provide geographic data about cardiovascular health behaviors with a possible emphasis on more data-based small-area analyses and mapping. This will permit states to more adequately monitor trends that affect the burden of CVD in their regions and the United States. Mapping also facilitates the exploration of patterns of morbidity, health-care use, and mortality, as well as the epidemiology or risk factors. Finally, by identifying those segments of the population with high levels of these risk factors and lower levels of the preventive health practices, public health personnel can better allocate resources and target intervention efforts for the prevention of CVD. [¹ Division of Prevention Research and Analytic Methods, Epidemiology Program Office, ² Division of Adult and Community Health, National Center for Chronic Disease Prevention and Health Promotion]

V. NCHS Cartography and GIS Guest Lecture Series

(This section may include literature citations, abstracts, syntheses, etc., and submissions are open to all)

“Dead and Live Graphs: A Basis for New Interactive Exploratory Data Analysis Techniques,” David Desjardins, Statistical Research Division, US Bureau of the Census, March 31, 1999, NCHS Auditorium, 2:00-3:15P.M.: **Abstract:** The purpose of this seminar is to highlight the important differences between "dead" graphs and "live" graphs. Live graphs are the fundamental components of the new interactive Exploratory Data Analysis (EDA) techniques currently being taught in ongoing courses by the author. To highlight the role of live graphs, the author will discuss his "EDA Plan of Attack". This

plan of attack is likened to battlefield tactics used by the military -- wherein the unique features of planes, tanks, and artillery are used in combination with a defined strategy to gain an objective. By using a combination of the best features of a number of graphic types (box plots, scatterplots, etc.)--in combination with the interactive features of our SAS Insight and JMP software (animation, brushing, dynamic color assignment, etc.)--hidden features of the data can quickly be revealed. (Indeed, a key aspect of the author's EDA class is to teach the use of these techniques--to give subject matter specialists a fundamental understanding of the nuances of their data--as opposed to our conventional statistical techniques that simply edit "outlier" data.) This seminar will include an interactive demonstration with these techniques.

“American FactFinder,” U.S. Bureau of the Census (date to be announced): [Editor: As we go to press, I have invited a presentation on this latest Census Web tool. Public release for the American FactFinder is scheduled for later this month. You should be able to access it at www.census.gov/dads/www. American FactFinder will be made available through several releases in 1999 and 2000 with progressively increasing functionality and data. Data from the 1990 Census of Population and Housing and the American Community Survey will be available in the first release in the winter of 1999. Data from the Census 2000 Dress Rehearsal and the 1997 Economic Census will be released on a flow basis. In the spring of 1999, advanced query functions will disseminate data from the 1990 Census Public Use Microdata Files. More functions will be added to support Census 2000 data dissemination. The tool will provide public access to unrestricted (confidentiality cleared) Census databases and include a choropleth mapping function.

VI. Related Census, DHHS and Other Federal Developments

Office of Intergovernmental Solutions

[Editor: In Vice President Gore's "Access America Report" he charged the Office of Intergovernmental Solutions with the responsibility of publishing an on-

line intergovernmental solutions newsletter. The newsletter identifies trends and successes in managing information technology around the world and provides highlights from Federal, State, local and international governments, as well as industry and academia. The following excerpts are from *Intergovernmental Solutions Newsletter*, Edition 6, Reinventing Government, Federal Initiatives, February 1999; for the complete report, see <http://www.policyworks.gov/intergov>]

EPA's Brownfields Program Turns Blighted Properties into Community Assets (excerpts), **Marjorie Buckholtz**, National Brownfields Program Coordinator: Across the country, many properties that were once used for industrial, manufacturing, or other commercial uses now lie abandoned due to suspicion of hazardous substance contamination. Fears about potential liability for this contamination keep developers, investors, and lenders from restoring these "brownfields" to productive use. Since 1995, the Brownfields Program of the U.S. Environmental Protection Agency (EPA) has been providing cities, States, and disadvantaged communities with the means to assess, safely clean up, and reuse these properties.

When the City of Emeryville, CA, received a \$200,000 EPA grant, it used some of this funding to develop a Geographic Information System (GIS) to catalyze cleanup and reuse of brownfields. After gathering and analyzing information on more than 500 city properties, Emeryville used the GIS to create a "One-Stop Shop" for potential purchasers and developers. This system provides instant information on soil and groundwater contamination, assessment findings, planning issues, land use/zoning concerns, and ownership histories. The One-Stop Shop can be used to determine needed cleanup levels, cleanup procedures, and institutional control measures for any parcel in the City's inventory. Equally important, this system is available to anyone via the Internet, at <http://198.31.87.56/oss.htm>.

Several of Emeryville's property owners and developers have already used information provided through the One-Stop Shop. The owner of a 10-acre, former valve manufacturing plant used the system to

obtain "No Further Action" status on the property from EPA, enabling the site to be sold for redevelopment into a retail and distribution facility that will generate \$200,000 per year in tax revenue and create 200 jobs. The owner of an idle, five-acre property used the One-Stop Shop to determine assessment and cleanup strategies; and the purchaser of a one-acre, underutilized salvage yard used the system to research adjacent properties for redevelopment into new office space.

The Brownfields Program has 227 Assessment Pilots in place nationwide, each funded up to \$200,000. The strategies developed by these Pilots are not only expected to be replicable by other communities, but to long outlive Federal involvement. Brownfields Assessment Pilots have so far leveraged more than \$1.1 billion from interested developers and investors - a clear indication that these properties are finally being seen as opportunities, rather than liabilities. [For more information on this article, contact Marjorie Buckholtz at EPA's Office of Outreach and Special Projects at voice (202) 260-6153 or e-mail buckholtz.marjorie@epa.gov]

The following are excerpts from the **Draft Provisional Guidance on the Implementation of the 1997 Standards for Federal Data on Race and Ethnicity**, EXECUTIVE OFFICE OF THE PRESIDENT, OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, D.C. 20503, February 17, 1999. Public comment and discussion is invited, and specific input to the report is requested by April 15 [Contact: For the full report or submission of comments, Nancy Kirkendall, Office of Management and Budget, at email 30.Nancy_Kirkendall@omb.eop.gov]. **BACKGROUND-** This part of the report discusses why guidance is needed for tabulating data collected using the 1997 standards, reiterates the general guidance issued in October 1997, provides clarification of several aspects of the new standards, and presents the criteria that were developed for evaluating bridging methods and presenting data.

The Need for Tabulation Guidelines and Alternative Approaches- On October 30, 1997, the

Office of Management and Budget (OMB) published "Standards for Maintaining, Collecting, and Presenting Federal Data on Race and Ethnicity" (Federal Register, 62 FR 58781 - 58790), which are reprinted in Appendix A. The new standards reflect a change in data collection policy, making it possible for Federal agencies to collect information that reflects the increasing diversity of our Nation's population stemming from growth in interracial marriages and immigration. Under the new policy, agencies are now required to offer respondents the option of selecting one or more of the following five racial categories included in the updated standards:

-- **American Indian or Alaska Native.** A person having origins in any of the original peoples of North and South America (including Central America), and who maintains tribal affiliation or community attachment.

-- **Asian.** A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.

--**Black or African American.** A person having origins in any of the black racial groups of Africa. Terms such as "Haitian" or "Negro" can be used in addition to "Black or African American."

--**Native Hawaiian or Other Pacific Islander.** A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

--**White.** A person having origins in any of the original peoples of Europe, the Middle East, or North Africa.

These five categories are the minimum set for data on race for Federal statistics, program administrative reporting, and civil rights compliance reporting.

With respect to ethnicity, the standards provide for the collection of data on whether or not a person is of "Hispanic or Latino" culture or origin. (The standards do not permit a multiple response that would indicate an ethnic heritage that is both Hispanic or Latino and non-Hispanic or Latino.) This category is defined as follows:

--**Hispanic or Latino.** A person of Cuban, Mexican, Puerto Rican, South or Central American, or other

Spanish culture or origin, regardless of race. The term, "Spanish origin," can be used in addition to "Hispanic or Latino."

As a result of the change in policy for collecting data on race, the reporting categories used to present these data must similarly reflect this change. In keeping with the spirit of the new standards, agencies cannot collect multiple responses and then report and publish data using only the five single race categories. Agencies are expected to provide as much detail as possible on the multiple race responses, consistent with agency confidentiality and data quality procedures. As provided by the standards, OMB will consider any agency variances to this policy on a case by case basis.

Based on research to date, it is estimated that less than two percent of the Nation's total population is likely to identify with more than one race. This percentage may increase as those who identify with more than one racial heritage become aware of the opportunity to report more than one race. In the early years of the standards' implementation, there will be issues of data quality and confidentiality related to sample size that may restrict the amount of data that can be published for some combinations of multiple race responses. Over time, however, the size of these data cells may increase. It should be noted that such data quality and confidentiality problems for small population groups also existed under the old standards, where sample sizes prevented presentation of data on certain population groups such as American Indians. The possible multiple race combinations under the new standards, some with small data cells, serve to make such data quality concerns more apparent. Some balance will need to be struck between having a tabulation showing the full distribution of all possible combinations of multiple race responses and presenting only the minimum--that is, a single aggregate of people who reported more than one race.

Decennial Census- The Census 2000 questionnaire will provide individuals the opportunity to self-report their racial identity by selecting one or more races. For purposes of Census 2000 only, in an effort to encourage response to this question, OMB has approved the use of a sixth category -- "Some Other Race" -- in addition to the minimum five categories.

This discussion covers preliminary tabulations plans for the six categories of race and the two categories of ethnicity ("Hispanic or Latino" and "Not Hispanic or Latino") and for possible combinations of these racial and ethnic categories. It does not address tabulation plans for detailed groups of American Indian and Alaska Native, Asian, or Native Hawaiian and Other Pacific Islander populations for which information will be collected in Census 2000.

For data from the Census 2000 Dress Rehearsal sites, table shells will be available on the Internet through the Census Bureau's **American FactFinder**. The data user will be able to use the inquiry system in the American FactFinder to obtain table shells filled with data for user-selected geographic areas and for population universes defined by race and ethnicity down to the census tract level. The amount of data on population characteristics available in table shells will be roughly the same as in printed reports in 1990 for counties and for places of 10,000 or more population.

How the 2000 Census Data Can Be Used for Redistricting in 2001- In Census 2000 the major changes to the reporting of data on race and ethnicity are (1) the instruction to "mark one or more" racial categories and (2) the splitting of the "Asian or Pacific Islander" category into two separate categories -- "Asian" and "Native Hawaiian or Other Pacific Islander." Hispanic or Latino origin will be ascertained in a separate question, as in 1990 census.

For the purposes of the 2000 Census Dress Rehearsal, the Census Bureau will provide tabulations of the number of persons who identified with only one of the five individual racial categories or with the residual category ("single race" counts), plus tabulations of the total number of persons who identified with each of the five individual racial categories either alone (e.g., White only) or in combination with any other categories (e.g., White plus any other racial category), referred to as "all inclusive" counts. Both the "single race" counts and the "all inclusive" counts will be cross-tabulated by Hispanic or Latino origin. It should be noted that the "all inclusive" counts will add to more than 100 percent of the population since a person's response

will be counted in all of the racial categories selected. (See Appendix C for more information on Census 2000 Dress Rehearsal prototype redistricting data.)

It is not expected that provision of the redistricting count data in the new format will lead to significant changes in redistricting practices or decisions. The new data categories will not affect the total population counts used for the apportionment of Congress, or for compliance with one-person, one-vote requirements.

Once the Dress Rehearsal data are released and analyzed, there will be more information available about the practical effects of the new standards. It can be expected that the more that the single-count and all-inclusive-count populations share the same residential patterns, the less likely it will be that jurisdictions' redistricting choices will affect those populations differently. Research also has indicated that, at least nationwide, there is unlikely to be a significant difference between the "single count" Black population and the "all-inclusive" Black population. In addition, jurisdictions with substantial Hispanic or Latino populations will have a separate count of all persons identifying themselves as Hispanic or Latino, because ethnicity is collected in a separate question.

Alternatives to the single-race/all-inclusive approach to redistricting data are under consideration. The U. S. Department of Justice has not yet reached a decision on the question of whether advantages would result from the use of one of the allocation methods described in Appendix D for voting rights issues. While allocation does not conform with the criterion that data uses should reflect "congruence with respondent's choice," it would facilitate comparisons with the 1990 census data. (Allocation methods assign an individual's multiple race response to a single race category.)

Some have suggested that an allocation approach would have the advantage of giving redistricting authorities, the states and their political subdivisions, one number to use in making their redistricting choices. Others have suggested that instead it would require states to use and consider three data sets: single-race counts, all-inclusive counts, and the allocated counts. If a decision is made to use an

allocation approach, the Department of Justice would discuss with the Census Bureau the technical feasibility of including matrices using the chosen allocation method in the PL 94-171 data files or producing a special tabulation with such data after the Census Bureau has met its legal deadline of April 1, 2001, for producing the data specified in PL 94-171. The working group would appreciate feedback from users on these issues.

Vital Records and Intercensal Estimates- The revisions to the standards for collecting and presenting Federal data on race and ethnicity pose many challenges to the Census Bureau's Intercensal Population Estimates Program. Because the population estimates are data driven, changes to the program to provide new racial categories will depend upon the availability of data from a variety of sources. Although changes are possible, it will require discussions with data providers and data users, as well as research and analysis of data collected under the new standards, before the Census Bureau can identify the racial categories that can be used in the Intercensal Population Estimates Program.

The 1997 standards present many challenges with two in particular posing the greatest challenge. One is that respondents to Federal data collections, including Census 2000, surveys, and vital statistics registrations, will be allowed to select one or more races. The other is that the Asian or Pacific Islander aggregate category has been split into two categories -- one called "Asian" and the other called "Native Hawaiian or Other Pacific Islander."

Because the intercensal population estimates serve several diverse purposes, exploring the possible outcomes of the estimates process and examining the implications of the new standards are important. The intercensal population estimates are used as controls for many Federal surveys, as denominators for important Federal statistics, and as indicators for important program and policy decisions.

Because the issues raised by the 1997 standards are complicated and diverse, it will take considerable research and experimentation before the Intercensal Population Estimates Program can produce population estimates outputs that fully follow the new

standards.

What is the Intercensal Population Estimates Program?-The Intercensal Population Estimates Program, under Title 13, develops and releases annual estimates of the total population and its demographic characteristics. For the Nation, states, and counties, these characteristics include annual estimates by: Age (single years of age 0 to age 99) and 100+; Sex (Male/Female); Race (White; Black; Asian and Pacific Islander; and American Indian, Eskimo, and Aleut); Hispanic origin (Hispanic/non-Hispanic).

The Intercensal Population Estimates Program currently provides estimates of the total population of functioning governmental units (cities, incorporated places, and minor civil divisions). The Census Bureau is considering expansion of the program to include smaller and more diverse units of geography (such as School Districts), as well as the development of demographic characteristics for functioning governmental units and other smaller geographic units.

The population estimates are used in the intercensal period for funding allocations, as controls for Census Bureau and other Federal surveys, as denominators for vital statistics and other demographic events, and as planning tools for government and private programs.

Denominators for Demographic Events. The National Center for Health Statistics (NCHS) currently uses the national, state, and county population estimates by age, sex, race, and Hispanic origin as denominators to create birth and death rates and to calculate life tables by race and sex. In addition to the use by NCHS, the Centers for Disease Control and Prevention (CDC) frequently relies upon the estimates of population at various geographic levels as denominators for various health related and disease incidence rates. The National Cancer Institute (NCI) uses the county population estimates by age, sex, race, and Hispanic origin as denominators for the various cancer incidence rates released to the public.

Birth and Death Components. In brief, NCHS provides annual counts and distributions of births and deaths by age, race, sex, and Hispanic origin by county to the Census Bureau in a specially developed individual record file of the birth and death events.

These individual records contain the detailed race and Hispanic classifications available from the birth and death certificates collected by NCHS.

The National Vital Statistics System is the basis for the Nation's official statistics on births and deaths (including infant deaths). The data are provided through vital registration systems maintained and operated by the individual states and territories where the original certificates are filed. While the legal authority for vital registration rests with the states and territories, the National Center for Health Statistics (NCHS) is required to produce national vital statistics by collecting data from the vital records of all the states. The NCHS cooperates with the states in developing the standard forms for data collection as well as standard procedures for data preparation and processing in order to promote a uniform national data base. The NCHS shares in the costs incurred by the states through contractual agreements with each state. Under this arrangement, NCHS obtains and publishes vital statistics based on all births and deaths (e.g., 3,891,494 and 2,314,690, respectively, in 1996) occurring in the United States.

Implementation of the 1997 standards on vital records will require changes in data collection and processing systems at all levels of government and very likely will take at least several years to accomplish throughout the United States. In addition to revising computer systems at the state and Federal levels, the electronic software that is used in hospitals to record and report over 90 percent of all births in the United States needs to be converted. Most importantly, the procedures used to collect birth and death data in hospitals and funeral homes will need to be revised and the appropriate staff need to be trained.

It can be anticipated that not all registration areas will implement the 1997 standards at the same time or with complete coverage and compliance at the start. For example, some states may implement the revised race question on birth and death certificates in the year 2000 in order to be compatible with Census 2000, while others may prefer or need to wait until the next revisions of the U.S. Standard Certificates of Birth and Death are implemented in 2002. During 1998 and 1999, the NCHS is sponsoring a committee

of state vital statistics officials and representatives of the relevant professions in a series of meetings to evaluate the entire content and format of the current Standard Certificates. The committee's goal is to submit certificate revisions to the Secretary, Department of Health and Human Services, in July 1999 for clearance by the Department. Implementation by the registration areas is expected to occur in January 2002. Some states have indicated a desire to make changes in the race and ethnicity items at the same time as other changes are made.

Future Direction- The process of developing a set of intercensal population estimates consistent with the 1997 standards will not be an easy one. Until data are available, making any commitments about the probable set of products is impossible. The Census Bureau realizes, however, that many data users need to know its plans in order to make their own program decisions.

To begin this process, the Census Bureau is forming a technical interagency group of key data providers and key data users to address many of the major issues. Members of this group will provide input on: (1) the feasibility of using one consistent set of categories on race across all geographic levels; (2) the feasibility of using population size as the only criteria

for determining which categories by race will have separate population estimates; (3) the minimum cell size below which population estimates will not be produced; (4) the continued development of population estimates by mutually exclusive categories on race; and (5) the use of consistent methodologies for the different categories by race in the population estimates program. This technical group will also examine issues related to data allocation and editing--important factors related to the data consistency issues.

Although detailed data on race from Census 2000 will not be available until mid 2001, during the next few months, the interagency group can address and reach consensus on most of the issues outlined above. Through these discussions with the data providers and data users, the Intercensal Population Estimates Program can begin to form some tentative plans. Although it is too soon to speculate on any outcomes, it is likely that the Intercensal Population Estimates Program will need to be flexible. During the coming decade, as more data become available using the 1997 standards, it is likely that the Census Bureau will continue the expansion of the population estimates program to include additional categories by race.

Web Site(s) of Interest for this Edition

On February 25, 1999, **Gerry Rushton**, Department of Geography, The University of Iowa, presented a talk entitled "Applying the Science of Geographic Information Systems (GIS) to Public Health Theory and Practice: Opportunities and Precautions." Sponsored by CDC/ATSDR's Behavioral and Social Science Working Group (BSSWG), more than 100 persons attended at Executive Park and six offsite locations received the program through Envision. It was a stimulating presentation. The lecture powerpoint slides can be viewed by CDC/ATSDR staff at the NCHS Office of Research and Methodology's GIS Page: <http://inside.nchs.cdc.gov/orm/gisnews.htm>. (parts under construction). An external GIS site is not yet available. Additionally, Dr. Rushton has developed a CDROM, "Improving Public Health Through Geographical Information Systems: An Instructional Guide to Major Concepts and Their Implementation". A Web version of the instructional CD ROM is viewable at <http://www.uiowa.edu/~geog/health>.

**Final Thought(s): Millions Earmarked for Livable Communities Effort
ESRI Launches Solutions Grants Program**

Redlands, California-ESRI, the world leader in geographic information system (GIS) software, announced today the formation of its Solutions Grants Program for local governments. ESRI designed this new series of focused grants to build on the foundation its Local Government Start-up Grant Program established in 1998. Whereas the Local Government Start-up Grants sought to foster the development of spatial databases where none existed, the Solutions Grants, with an estimated value of \$6 million, are intended to enable communities to capitalize on the momentum generated by the societal GIS movement. Each of the grants provides applications, software solutions, data, and training to local governments intent on implementing programs for more livable communities and championing increased public access for the dissemination of information and decision-making power to the grassroots level.

ESRI will disperse the awards within nine different community sectors, and will bundle the grants with software solutions that are specific to each area. ESRI's business partners will also contribute software tools to the packages. There are customized grants for:

Livable Communities: **Law Enforcement**

Livable Communities: **Public Safety**

Livable Communities: Cadastral

Livable Communities: Community Development

Livable Communities: Public Access (Internet)

Livable Communities: Schools

Livable Communities: Public Utilities

Livable Communities: **Environmental Protection**

Livable Communities: **Health and Human Services**

Livable Communities: Library Services

ESRI announced the rollout of the grants at the National Association of Counties' (NACo) legislative conference in Washington, D.C. "With these grants we hope to build on the spirit of Vice President Gore's 'smart growth' initiatives by demonstrating the value of sharing data sets not only within agencies but on a cross-governmental level as well. The power of GIS promises to dramatically change how we and our children will envision the future," said Jack Dangermond, president of ESRI.

ESRI will accept applications for the Solutions Grants from April 1, 1999, through October 1, 1999. All details and application information will be posted at ESRI's Web site (www.esri.com/localgov). The grants will be dispersed at intervals from April 1, 1999, to November 1, 1999, according to Christopher Thomas, ESRI state and local government industry solutions manager. "We are anxious to get this grant program underway as we expect it to have a significant impact on many enterprise GIS projects," Thomas said. [Source: Nancy Sappington at voice (909) 793-2853, extension 1-2198 or email press@esri.com]

Charles M. Croner, Ph.D., Editor, **PUBLIC HEALTH GIS NEWS AND INFORMATION**, Office of Research and Methodology, National Center for Health Statistics <cmc2@cdc.gov>. Copyright Notice: This report is in the public domain but its contents are not to be altered or changed without prior written approval of the editor.

Countdown to the next Public Health GIS Millennium