

Application of Geographic Information Systems (GIS) for Cancer Surveillance

Program Director's Meeting
May 15, 2007

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National Program of Cancer Registries Atlas: Background

- Georeferenced data
 - Healthy People 2010
 - Potential clusters
 - Spatial associations
 - Program/Policy
- Expand upon previous work
 - NCI
 - <http://cancercontrolplanet.cancer.gov/atlas/index.jsp>
 - <http://statecancerprofiles.cancer.gov/map/map.html>
 - USCS
 - <http://www.cdc.gov/cancer/npcr/uscs/>
 - Pennsylvania State



National Program of Cancer Registries Atlas: Goals

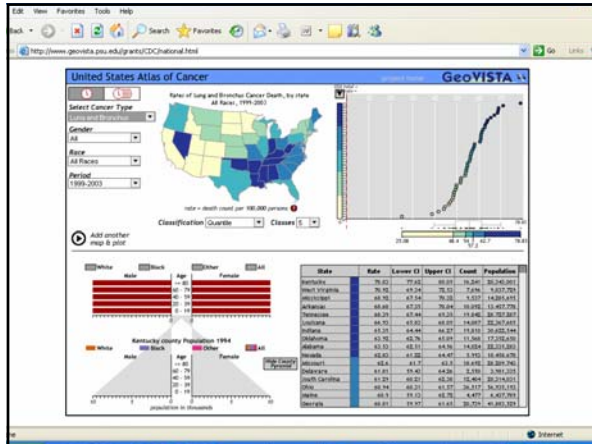
- Design and develop a model GIS/Atlas
 - Construct a usable interface
- Phased approach
- Provide documentation
- Training
- Dissemination of model
 - State-specific applications
 - Division and Center applications





National Program of Cancer Registries Atlas: Status


- Subset analyses
 - Incidence and mortality data
 - Cancer type, year, gender, race
 - Data classification
- Map, plots, tables
- Websites
 - <http://www.geovista.psu.edu/grants/CDC/>
 - <http://www.geovista.psu.edu/grants/CDC/national.html>







- ## National Program of Cancer Registries Atlas: Project Status/Timeline
- Transfer of documentation and software (April 2007)
 - Conduct internal usability testing (Summer 2007)
 - Modifications to incorporate incidence data (Summer 2007)
 - Incorporate modifications suggested through usability testing (Summer 2007)
 - Develop documentation (Fall 2007)
 - Post to USCS website (Winter 2007)
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- ## National Program of Cancer Registries Atlas: Next Steps
- Development of additional applications
 - Incorporation of additional data layers
 - Development of county-level applications for state programs
 - Conduct usability testing and incorporate modifications
 - Training and software distribution
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- ## National Program of Cancer Registries Atlas: Next Steps
- Availability to State Partners
 - Software shell
 - Enhancements
 - State-specific needs
 - Socioeconomic status variables and other demographic variables to evaluate health disparities
 - Grade
 - Stage
 - Animation
 - Data Modeling/Smoothing
 - Expansion
 - DCPC
 - Center
 - Others
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- ## Web-based Geoserver: Rationale
- Consolidating resources
 - Centralization of resources
 - Standardization of practices
 - NPCR/USCS
 - DCPC
 - CDC Enterprise-GIS
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- ## Web-based Geoserver: Background
- FY07 approval of a three-year project to develop a geocoding server for NPCR partners.
 - The server will be developed with NPCR program partners and NAACCR geocoding best practices.
 - The server will provide a centralized and standardized service consolidating resources.
 - Evaluate the performance and cost-effectiveness of this solution.
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Web-based Geoserver: Best Practices

- State experience
- NAACCR GIS Committee
- Confidentiality and data transmission
- Additional applications
 - Socioeconomic status indicators



Web-based Geoserver: Status

- Proposal for Division FY07 pilot
- Coordinating with NCPHI
- Coordinating with other Divisions and Centers



Web-based Geoserver : Project Milestones

- Collect information of NPCR geocoding system requirements and best-practices from selected pilot programs.
- Obtain and evaluate commercial and open-source geocoding systems.
- Design and develop methods for protecting confidentiality and privacy of cancer cases.
- Evaluate performance, cost-effectiveness, and ability to meet CDC-Enterprise requirements.



Web-based Geoserver : Project Milestones Continued

- Compare several different geocoding algorithms and street databases to provide insights as to whether the NPCR web-portal system is useful.
- Describe the relative strengths and weaknesses of commercial and open-source solutions.
- Begin development of geocoding server.



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