



## Citizen Mapping and Environmental Justice: Internet Applications for Research and Advocacy

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Additional Credits: Though this presentation is my own, the written work, under development, is a collaborative product with Tony Stallins, FSU Geography, Richard Gragg, Shereitte Stokes IV, and Elijah Johnson, Center for Environmental Equity and Justice, Environmental Sciences Institute, Florida A&M University



1. Web 2.0 & Citizen Mapping

Case Study: Tallahassee, FL 2.

3. Future Use and Misuse



1.

## Web 2.0 & Citizen Mapping



# Web 2.0 & Citizen Mapping



Google earth



geocommons



Microsoft  
Photosynth



ArcGIS Online  
Maps and Apps for Everyone

These are the Web 2.0 examples we know and love – and some of the Cartography 2.0 equivalents



Concepts in Citizen Mapping

**Cartography 2.0**

Digital map design, collaboration, and spatial data accessibility made possible by expanding interoperability and social communication via the web. Cartography's first mode spanned hardcopy map production to more site-constrained digital map production. For this second version, digital map production has become more distributed and fluid because of open source software and cartographic tools available through the web.

**Citizen sensors**

The concept that spatial data collection can be enhanced by drawing from a larger, non-expert population of collaborators. Citizens may provide information during a time of crisis or as part of a more planned cartographic enterprise. Collection of GPS coordinates, photographs, and location-specific descriptions can be collated for visualization.

**Mashup**

A web-based mapping application that mixes data from two or more sources. Aggregation of data facilitates the diversification of cartographic visualization and communication. A mashup, for example, might combine the location of child care centers available from one online mapping website with the location of hazardous waste facilities obtained from another website.

**Metadata**

Data about data. To be reliable, geographic data should be accompanied by documentation that describes what the data represent, the means by which the data was collected, who collected and distributed the data, the timestamp of its collection, and the information needed to position the data spatially in a coordinate system, projection, and datum.

**Neogeography**

The expanding non-expert application of geographical techniques and data made available through the web. Where once sophisticated mapping tools were available only to experts, neogeography is undergirded by a technology that allows non-experts to participate in a dynamic cartographic culture.

**Open source**

Freely available software that has been designed, developed, and distributed through a collaborate network of users. Source code is available for users to customize for new uses.

**Web 2.0**

Web design that enhances online data exchange, collaboration, and equitable levels of accessibility and participation. Whereas the first generation web was designed for data access and viewing, Web 2.0 promotes more diversity in the possibilities and outcomes of data exchange.

There is a good deal of jargon in this area – it's worth reviewing a few concepts



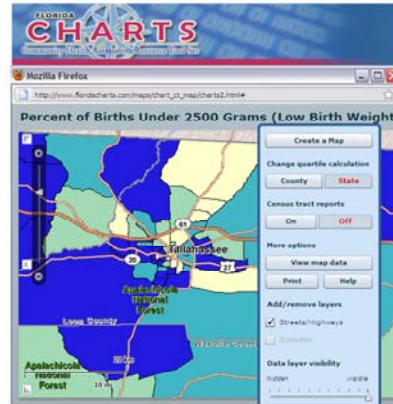
# Open Data Collection



There are a number of good sources of wiki-style, as well as crowd-sourced, data sets



# Transparency & Open Data



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Government transparency and data access are also opening up



# Open Data Analysis



## PySAL

The GeoDa Center released PySAL 1.0 on August 1, 2010. PySAL is an open source library of tools for spatial analysis (see figure) written in Python.

About PySAL  
Download PySAL 1.0

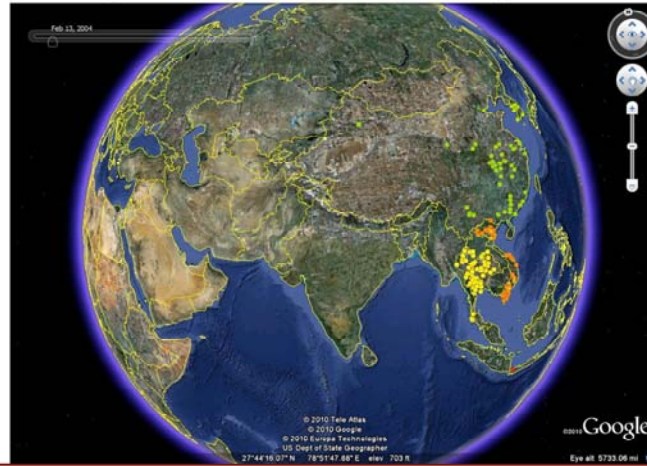


In addition to data, software and analysis tools are becoming more diverse and accessible, in terms of their low cost, and training materials provided over the internet





# Open Data Analysis



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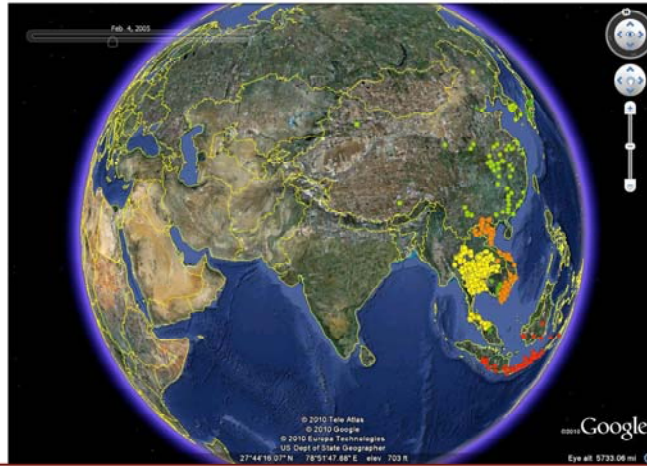
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This is Declan Butlers Avian flu dataset, published online by Nature, that shows H5N1 over time



# Open Data Analysis



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# Open Data Analysis



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# Web 2.0 & Citizen Mapping

*S. Sen et al. / Habitat International 27 (2003) 595-611*

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Fig. 8. Gandhinagar, Yerawada. The grey-shaded houses have their own water. The black squares are common water points. Even the houses with the water points exactly at their door step have their own connections.

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This Sen et al. of the Pune Slum Census in India is a classic example of community involvement in mapping



# Uses in Public Health

## THE SOCIAL MEDICINE PORTAL

An Alternative to Corporate Health

## USING GOOGLE EARTH AS AN INNOVATIVE TOOL FOR COMMUNITY MAPPING

June 24th, 2008 by bromadoc



Sources of Food and Exercise around the Montefiore Comprehensive Health Care Center; Legend: Red cross = Comprehensive Health Care Center. Grocery cart = Grocery Store (n=10). Fork and Knife = Restaurants (n=16). Red dot = Fast Food outlet (n=32). Yellow dot = Bodegas (small variety stores, n=44). Green tree = Exercise site (n=11). Note the old Yankee stadium on the lower left of the map.

<http://www.socialmedicine.org/2008/06/24/community-health/using-google-earth-as-an-innovative-tool-for-community-mapping/>



Case Study: Tallahassee, FL 2.



## Tallahassee Case Study



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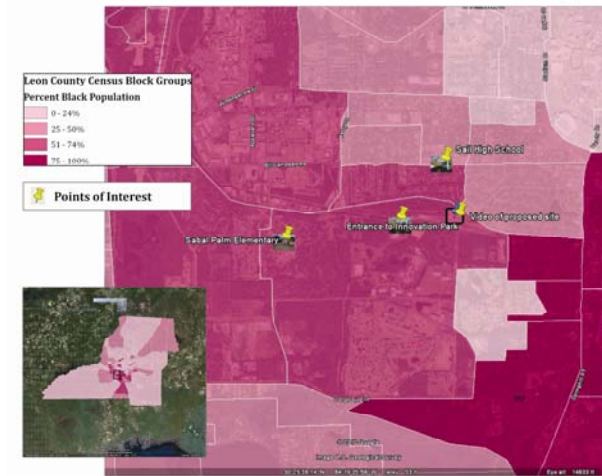
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1) Interested participants learned to use a GPS, and link photos, videos, and newsfeeds on Google Earth – this example was focuses on a proposed bio-mass plant to be built



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2) Even some analysis was conducted using data from the web





## Tallahassee Case Study

Friday, January 23, 2009

Tallahassee biomass plant withdrawn

By Bruce Ritchie

A Georgia company says it has decided to withdraw a proposed biomass electric plant on Florida State University land in Tallahassee that had raised ethical questions about FSU President T.K. Wetherell and his wife's involvement in the company.



The Biomass Gas & Electric LLC project was to be located on 21 acres of FSU land in southwest Tallahassee. Wetherell's wife, former Florida Department of Environmental Protection Secretary Virginia Wetherell, said last year she was a partner in the company.

Result: the plant was not built – of course, it was way more than Web 2.0 tools that led to this – it was the work of stakeholders – residents, NAACP, local physicians, city planners – that led to this result. Maps don't solve problems, ... but they can help.



3.

## Future Use and Misuse



## Uses...

- Mechanisms for community collaboration
- Decreasing barriers to access
  - Data
  - Software
  - Analysis
- Compelling visualizations



## ...Misuses

- Limits to representation
- Problems with availability of complete metadata, such as accuracy reporting
- Challenges in finding causality
- Inequity in access, know-how, and time



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Thank you.