Engaging Communities to Increase Spatial Knowledge Production in Geographic Research

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Community Geography

• Places explicit emphasis on identifying the spatial thinking and local knowledges emerging from residents’ experiences

• Engages citizen scientists

• Utilizes mixed methods & datasets

• Creates shared knowledge and products
Historical origins

• Bunge’s Detroit Geographical Expedition and Radical Geography

• 1990’s GIS & Society debates

• Public Participation GIS and Participatory GIS

• Critical GIS
Broadening Participation with Community Geography

- Underrepresented communities have historically been disenchanted with academic research

- Potential for community geography
  - Utilize community-driven problem-defining and solving
  - Create findings accessible to non-academic audiences
  - View community residents as active knowledge producers and contributors
Case 1: Community Geography in Atlanta, Georgia
• First community geography and GIS summer undergraduate research program
• 204 applications for 16 slots
CSAW REU

- Neighborhood change
- Urban green spaces
- Air and soil quality
REU Track 2: Urban greenspace and biodiversity preservation

Healthy Urban Forest

Invaded Urban Forest

11/9/2012
Community Defined Research Goals

Invasives
- Maps of nine species
- Field observations to complement anecdotal evidence

Open source database
- Replicable method

Other
- Maps of trails, infrastructure
- Interactive map for website
Immediate impacts

• Smartphone how-to guide
• Trees Atlanta used maps in field for spraying
• WAWA used maps and data for interactive mapping site
• GSU students out in the field
  – GIS, Cartography, and Urban Environment students will conduct further work, pair up with WAWA & Trees Atlanta
Tire Initiative to Reduce and Eliminate Dumping (TIRED of Tires): Atlanta, GA
Tire mapping

- Community residents, GSU faculty and students went out to GPS the locations of tires

- Over 1,600 illegally dumped tires mapped

- Printed maps used to direct cleanup effort
Tire mapping value

- Partnerships formed and citizens learned about illegal tire dumping
- Tire Amnesty Day in Atlanta this spring
- Online map for reporting tire dumping

Illegal Tire Dumping Press Conference: March, 8th, 2012
Case 2: Mapping Campus Mapscapes at Temple University
Temple University

- 25,000 undergrads
- Demographics
  - 18.9% African American
  - 8.8% Asian
  - 3.5% Hispanic
  - 57.3% White
  - 11.5% other
Research Questions

1. How do Philadelphia youth view campus spaces?

2. What might these views look like in a GIS-based analysis of campus space at the individual and aggregate level?

3. What is the relationship between the socio-spatial perceptions of youth and their STEM aspirations?
Research Design

Administered a pre- and post-mental mapping exercise to youth at Temple University during a 6-week intensive program on “building Information Technology Skills” July-August 2012
Research participants

- 43 youth from the School District of Philadelphia
- Ages 14-18
- 100% identified as African American
- 21 Female; 22 Male
Sample Result

**Pre-Exercise**

- Draw a star at the center of campus.
- Draw a line around the boundary of campus.
- Draw lines to show the pathways you most frequently use to cross campus.

What areas are you familiar with on campus?
Circle these areas in green and label the area with the type of activity you do there.

What areas do you avoid on campus?
Circles these areas in red and label the area with the reason you avoid the place.

**Post-Exercise**

- Draw a star at the center of campus.
- Draw a line around the boundary of campus.
- Draw lines to show the pathways you most frequently use to cross campus.

What areas are you familiar with on campus?
Circle these areas in green and label the area with the type of activity you do there.

What areas do you avoid on campus?
Circles these areas in red and label the area with the reason you avoid the place.
Preliminary Results

How do Philadelphia youth view Temple campus?

– As part of their neighborhood!
  • Attend events (graduation, science fair)
  • Walk through campus on way to school
  • Purchase food on campus

– An option for college

Why no?
• Close to home
• Looking for a change

Why yes?
• Close to home
• Good school
• Programs from interest

Would you attend Temple for college?

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Next Steps

• Aggregate data on boundaries, familiar areas and avoided areas through map overlay
• Compare pre- and post-maps to identify changes in perceptions
• Link socio-spatial perceptions to STEM aspirations
Case 3: Community Geography at a Community Based University
Chicago State University

• Located on Chicago’s far South Side
• Predominately Black Institution (PBI)...not an HBCU (Historically Black College and University)
• 71% female, 79% African-American
• 44% of students live (and generally, are from) within 5 miles of campus.
• Median Age of undergrads: about 27; almost half are part-time
Geography Program

• MA; certificate in GIS; certificate in Community Development

• 2012: 20 of 30 CSU graduate students Geography are African-American, 2 others black African nationals (total 73%)

• NSF: in 2009 only 104 black grad students in Geography in the entire US (2% of total)

• Small undergrad major (4 students)
CSU Neighborhood Assistance Center

• Provides technical and research assistance to neighborhood based, community, and economic development organizations.

• Applies discipline specific skills to the solution of neighborhood problems and acts to increase the level of service to the community by the university.

• The main goal of the NAC is to foster self-reliant community development.
Neighborhood Assistance Center - Background

• Started by Fred Blum, longtime Geography chair---had a focus on community service
• Begun through a “Communiversity” grant from US Dept. of Housing and Urban Development in mid-1990’s
• Became supported through CSU state appropriated funds in mid-1990’s
Roseland-Pullman Urban Agriculture Network

• Began in April 2010
• Monthly meetings of about 8-25 people, including reps from 4-10 community gardens/urban ag. Sites across the South Side (mainly in the CSU area)
• “Lions Club Model”
• Link to resources
• Chances for policy feedback
The Chicago Food Systems Collaborative

- Kellogg Funded Project from 2002-2006 (had met since 1999)
- Mixture of Community Activists from 5 organizations, Academics from 4 disciplines (geography, anthropology, sociology, nutrition) 4 universities
- Partnership was extremely flexible.
- Working primarily in the Austin neighborhood of Chicago’s West Side.
Market Basket Study

• Looks at the price and availability of a standard list of foods at community stores.
• Studied Austin and Oak Park
• Starting with our original list, we drove every shopping street in the area looking for stores—total store population was 156. 134 included in the study. Others either were not open, had no food on the list, or refused us entry (just 4 stores).
• Data collection completed by eight student-community member teams
The Food List

• Based on the USDA Standard List from the Thrifty Food Plan
• Designed to feed a family of four at a minimal nutrition level for a week
• Added foods chosen by the community and nutritionist (Sweet Potatoes, Greens, Corn Meal, Baby Food, Tub Margarine)
• Added questions about organic availability and produce quality
Availability of Fresh Fruits and Vegetables in Food Markets

Austin

11+ Fruits/Vegetables
- Corner Grocer (3)
- Non-Chain Supermarket (3)
- Chain Discount Supermarket (2)
- National Chain Supermarket (1)

5-10 Fruits/Vegetables
- Corner Grocer (17)
- Chain Drug/Chain Conv. Store (2)
- Liquor Store w/ Food (2)

1-4 Fruits/Vegetables
- Corner Grocer (12)
- Liquor Store w/ Food (1)

No Fruits/Vegetables
- Corner Grocer (18)
- Chain Drug/Chain Conv. Store (5)
- Liquor Store w/ Food (16)

Distance from stores offering 5 or more fruits and vegetables (population)
- Within 1/4 mile (77,733)
- 1/4 - 1/2 mile (37,434)

Data based on a survey of 14 fruits and vegetables

Sources: Chicago Food Systems Collaborative, 2000 Census, ESRI, ArcGIS StreetMap USA, and Northeastern Illinois Planning Commission
September 2004 - Chicago State Univ. GIS Lab, Darrell Moore
Concluding Thoughts

• Why community geography?
  – Broad and immediate societal relevance
  – Contributes to the science of broadening participation
  – In demand and fundable