



Ethics in GIS & Community Mapping

Edis Sánchez, Heather Sloan, Theresa Quill
IU Bloomington, GIS Day 2021



MAPPING THE PUBLIC SPHERE

GIS WEEK @ IU SERIES / NOV 5 - 17

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MAPPING THE RACIAL AND GEOSPATIAL LIFE & DEATH OF THE COVID-19 PANDEMIC



AN IDAH SPEAKER SERIES LECTURE WITH

DR. KIM GALLON
PURDUE UNIVERSITY

WEDNESDAY NOVEMBER 17 / 4:00 PM EST / ZOOM

Land Acknowledgement

We wish to acknowledge and honor the Indigenous communities native to this region, and recognize that Indiana University Bloomington is built on Indigenous homelands and resources. We recognize the Miami, Delaware, Potawatomi, and Shawnee people as past, present, and future caretakers of this land.

Introductions

Theresa Quill, Map & Spatial Data Librarian, IU Bloomington

Edis Sánchez, Anthropologist/Arts Advocate,
Santo Domingo, Dominican Republic

Heather Sloan, Media & Maps Assistant, IU Bloomington

Professor Edis Sánchez is a leading educator, performer, and scholar of Dominican folkloric music. He teaches music and folklore classes at the National Conservatory of Music and the Autonomous University of Santo Domingo (UASD), Dominican Republic. He has fulfilled several arts-related roles in the Dominican government, including as Director of the Department of Folklore (DINAFOLK) and Director General of Community Outreach for the Dominican Ministry of Culture. His Master's thesis covers traditional instrument-making practices in Dominican percussion, with a specific focus on artisans' knowledge of forest materials. His book, *La Música Folklórica Dominicana*, enshrines his encyclopedic knowledge of the topic. He is recognized as one of a handful of masters of Dominican folkloric drumming, and he has longstanding relationships with drum builders and performers representing all major folkloric genres of his country.

Workshop contents and sequence

- Community mapping and PPGIS
- Mapping folkloric music and deforestation in the Dominican Republic
- Government and community interactions
- Ethics and the data cycle: questions to consider
- Specific projects: small-group discussion & share-out
- Locations and specificity: technical strategies for protecting information
- Past, present, and future: research as relationship
- Q & A

Geographic Information Systems (GIS), spatial data, and digital mapping

Most digital maps we regularly use contain different kinds of data.

Spatial data (locations, eg., coordinates)

+

Attribute data (information about locations)

can be combined using a **Geographic Information System** (e.g., ArcGIS, QGIS) to create a **digital map** that provides information about a location beyond just “where it is.”

But what IS “community mapping”?

Other terms: Participatory Mapping or GIS (PPGIS),
Volunteered Geographic Information (VGI)



Child-led mapping in India

Bloomberg CityLab



Young mapmakers sketch out the changes they would like to see in their communities. *Courtesy of Humara Bachpan*

<https://www.bloomberg.com/news/articles/2015-02-19/by-making-hand-drawn-maps-of-their-slums-in-india-kids-are-influencing-urban-planning-policies>

Some maps you may know

The screenshot displays the OpenStreetMap interface. At the top left, the 'OpenStreetMap' logo is visible next to navigation buttons for 'Edit', 'History', and 'Export'. On the top right, there are links for 'GPS Traces', 'User Diaries', 'Copyright', 'Help', 'About', 'Log In', and 'Sign Up'. A search bar is located on the left side of the map area. A 'Welcome to OpenStreetMap!' pop-up window is overlaid on the left, containing the text: 'OpenStreetMap is a map of the world, created by people like you and free to use under an open license. Hosting is supported by UCL, Fastly, Bytemark Hosting, and other partners.' Below this text are two buttons: 'Learn More' and 'Start Mapping'. The main map shows the Caribbean region, including parts of North America, the Caribbean Sea, and South America. Labeled islands and regions include Jamaica, the Turks and Caicos Islands, the Dominican Republic (with departments like Artibonite and Ouest), Haiti (with Cap-Haitien), and Puerto Rico. Major cities such as Kingston, Santo Domingo, San Juan, and Ponce are marked. A scale bar in the bottom left corner shows 100 km and 50 mi. The bottom right corner contains the copyright notice: '© OpenStreetMap contributors | Make a Donation. Website and API terms'.

MISSING MAPS

Community-Led · Global · ACTIVE



Project ethics

- Using OpenStreetMap ensures that all data gathered under the project banner will be free, open, and available for use under OpenStreetMap's open license.
- All 'in country' activities, i.e. local mapping and data collection are carried out in collaboration with local people.
- When working locally, people come before the data: if the goal is to map a city there needs to be a plan in place to ensure access to technology and training for those living in that community to continue using the maps after project completion.

FOUNDING PRINCIPLES

#1

REALIZE OPPORTUNITIES:

Location data offers many social and economic benefits, and these opportunities should be realized responsibly.

#2

UNDERSTAND IMPACTS:

Users of location data have responsibility to understand the potential effects of their uses of data, including knowing who (individuals and groups) and what could be affected, and how. That understanding should be used to make informed and proportionate decisions, and to minimize negative impacts.

#3

DO NO HARM:

Physical proximity amplifies the potential harms that can befall people, flora and fauna. Data users should ensure that the individual or collective location data pertaining to all species should not be used to discriminate, exploit or harm. Rights established in the physical world must be protected in digital contexts and interactions.

#4

PROTECT THE VULNERABLE:

Vulnerable people and places can be disproportionately harmed by the misuses of location data, and may lack the capacity to protect themselves. In these contexts, data users should take additional care, act proportionately, and positively avoid causing harm.

#5

ADDRESS BIAS:

Bias in the collection, use, and combination of location datasets can either remove affected groups from mapping that conveys rights or services, or amplify negative impacts of inclusion in a dataset. Therefore care should be taken to understand bias in the datasets and avoid discriminatory outcomes.

#6

MINIMIZE INTRUSION:

Given the intimate and personal nature of location data, users should avoid unnecessary and intrusive examination of people's lives and the places they live in, that would undermine human dignity.

#7

MINIMIZE DATA:

Most business and mission applications do not require the most invasive scale of location tracking available in order to provide the intended level of service. Users should comply with practices that adhere to the data minimization principle of using only the necessary personal data that is adequate, relevant and limited to the objective, including abstracting location data to the least invasive scale feasible for the application.

#8

PROTECT PRIVACY:

Tracking the movement of individuals through space and time gives insights into the most intimate aspects of their lives. In the rare cases when aggregated and anonymized location data will not meet the specific business or mission need, location data that identifies individuals should be respected, protected, and used with informed consent where possible and proportionate.

#9

PREVENT IDENTIFICATION OF INDIVIDUALS:

As an individual's mobile location data is situated within more and more geospatial context data, its anonymity erodes, measures should be put in place to prevent subsequent use of the data resulting in identification of individuals or their location.

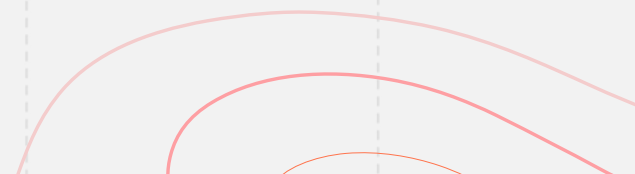
#10

PROVIDE ACCOUNTABILITY:

People who are represented in location data collected, combined and, used by organizations should be able to interrogate how it is collected and used in relation to them and their interests, and appeal those uses proportionate to levels of detail and potential for harms.

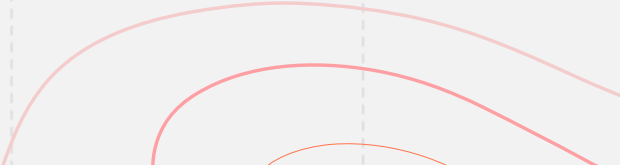
(Draft) BTAA Geoportal Ethics for Establishing and Sustaining Social Justice and Equity Through Geospatial Data and Mapping

In the spirit of the AAG Statement on Professional Ethics, URISA's GIS Code of Ethics, and the many ethical considerations posed by the authors of our collected readings

1. Promote geospatial data and analysis relevant to diversity, equity, inclusion, and access
 1. Address gaps in the availability of certain kinds of geospatial data which prevent efforts to study, analyze, understand, and ameliorate particular injustices
 1. Share and prioritize free and open source geospatial data and technology with the aim of extending geospatial technologies and techniques to those missing or underrepresented in relevant professions and fields of study
 1. Promote GIS and mapmaking practices that serve, represent, and include underrepresented groups, identities, and classes in the interests of diversity, equity, inclusion, and access
 1. Raise critical awareness of how maps, cartographic practices, and geospatial data can be used to threaten or serve underrepresented, vulnerable, or oppressed people and encourage the critical interpretation and use of existing maps and geospatial data
- 

Intro to the DR mapping project: 20 years and counting Phase One

Music/dance emphasis

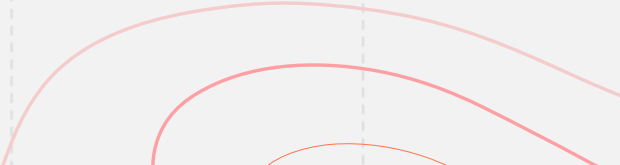
- Second Fulbright grant proposal accepted (early 2000); first one was not. Persistence can pay off!
 - August 2000, moved to Santo Domingo; began attending Edis' folkloric music & dance classes at Universidad APEC; began 10-month-long study and documentation of folkloric genres known to Edis
- 

Students of Professor Sanchez' folkloric music and dance classes at APEC University perform live

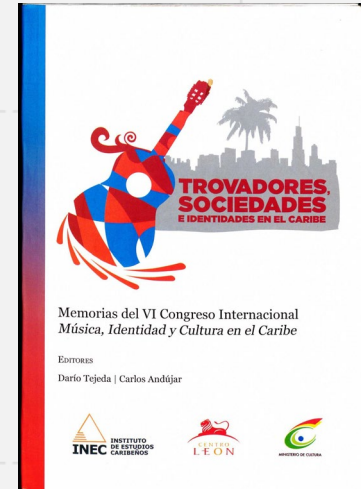
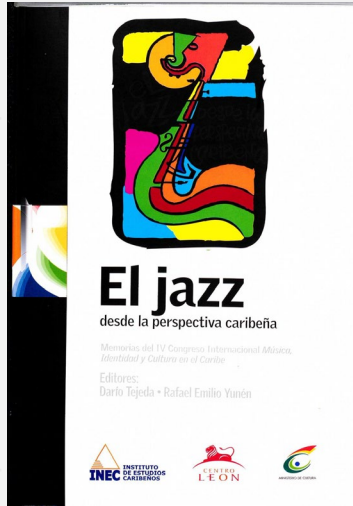


Phase Two

Music and larger social considerations (urbanization, class, race)

- Edis completes Master's in Anthropology (UASD); begins work with Dominican government's Ministerio de Cultura (DINAFOLK); I complete coursework equivalent to a minor in Latin American & Caribbean studies (DePauw)
 - Presentations at MIC conference every other year (Musica, Identidad, y Cultura en el Caribe) on various aspects of Caribbean music and society
 - 2013, first collaborative paper on instrument makers, materials, deforestation, and the unique roles of forests, trees, and drums in African-diaspora Caribbean communities
- 

“MIC” Conference: Music, Identity, and Culture in the Caribbean



2013 to present

- Continued emphasis on music and social concerns
- Developing interest in environmental factors, e.g., deforestation
- Tracing governmental action (or lack thereof) vis-a-vis commercial forestry management, small-scale harvesting restrictions, etc.
- Documentation and preservation of traditional drum-building methods
- Documentation of artisans' changing practices and the motivations for adaptations (e.g., material scarcity, cost, convenience)
- Exploring digital tools, especially mapping, web design, and data visualization to expand methods for doing and presenting research
- Expanding research relationship network throughout region



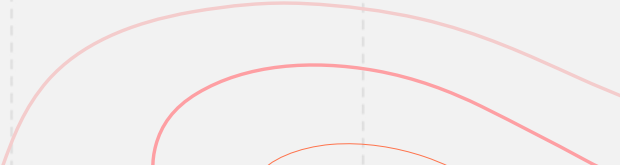
Domitilio Minier, brother of Sixto Minier, building a drum. The Minier family is part of the Brotherhood of the Holy Spirit of the Congos of Villa Mella, also known as *Los Congos de Villa Mella*. Dominican Republic. Photo Credit: Edis Sánchez. Used with permission.

The physical and mental territory of arts work: Thoughts on fostering a lifelong research and performance journey

[Video 1](#)



Additional research considerations

- Making time to build trust in partnership with a community
 - Western academic model can encourage:
 - short-term immersion
 - extractive relationship
 - opaque or incomplete picture of contributed labor (invisible labor)
 - uneven distribution of rewards and future opportunities
 - Some institutions and departments are modifying requirements (e.g., accepting multimedia dissertation submissions); may be an opportunity to explore accepting *process* as progress, too. Relationship building, contributions to community as benchmark phases of research.
- 

Mapping project phases: ethics and the data cycle

- **Building team:** diversity (expertise, perspective, background, language, etc.)
- **Project formulation:** stakeholder input, clarity of objectives
- **Funding:** conflicts of interest, trustworthy funding sources
- **Data gathering; handling and analysis; and mapping:** documentation; metadata; opting in/out
- **Data sharing:** transparency
- **Data storage and management:** access; protection; opting in/out

Mapping project quick -glance

15 minutes to discuss. Groups will share out briefly afterward.

Possible questions:

1. Who is the audience?
2. Who are the creators?
3. What is the message?
4. Is the ethical framework clear (explicitly or implicitly)?

Queering the Map

Anti-Eviction Map

Bike Maps

Waorani Resistance

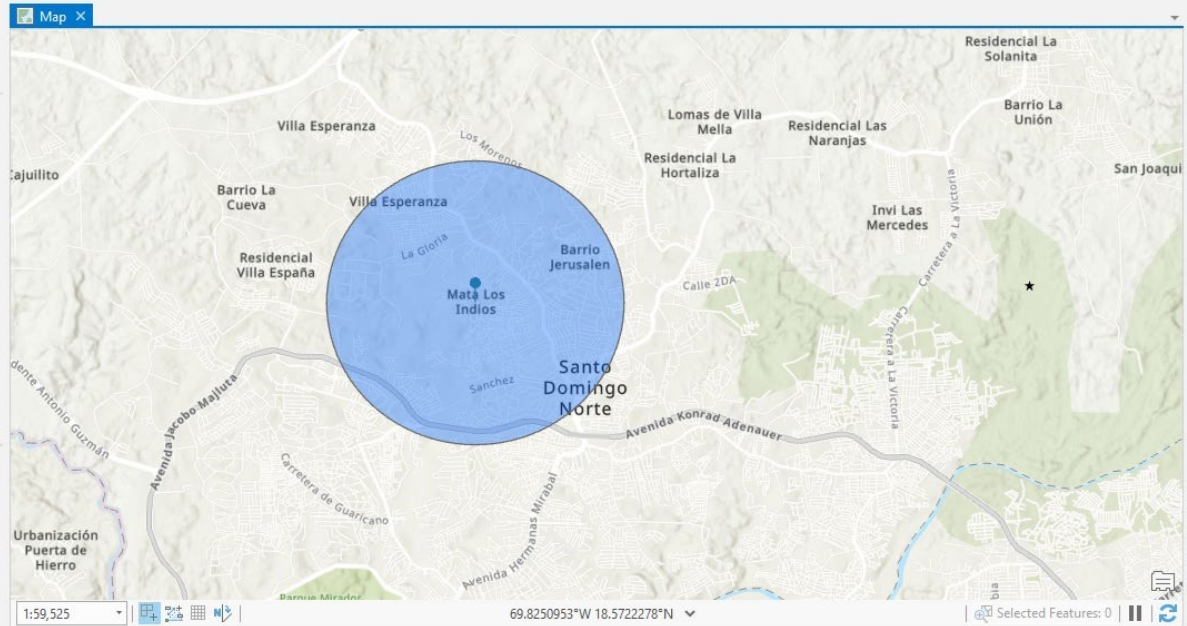
Crowd 2 Map Tanzania

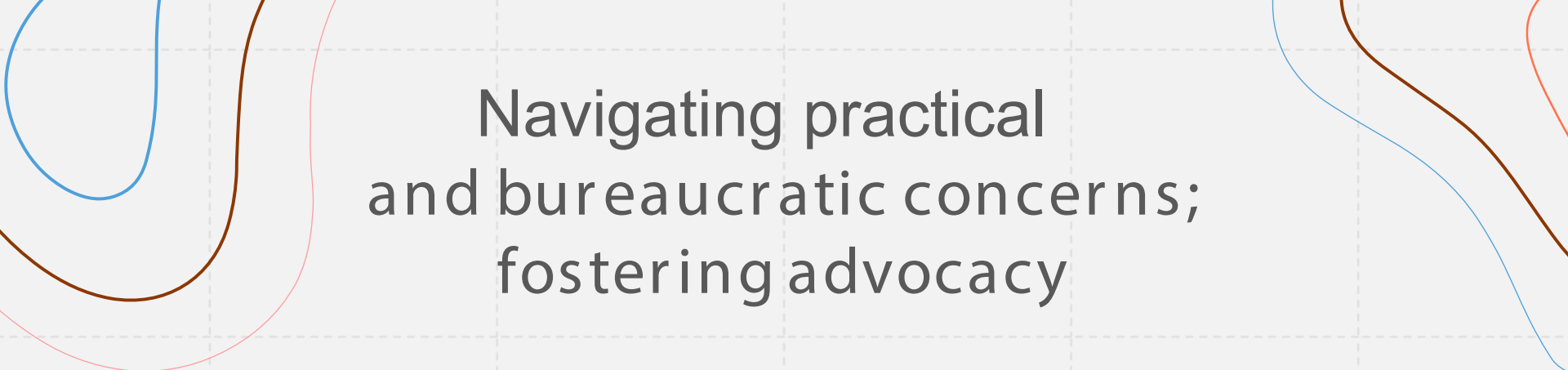
Report - back; return from Zoom rooms

Report-back on small-group discussion with top two or three observations/questions.

Digital mapping and ethics around locations

- Buffers indicate general location but preserve human and forest privacy.
- Community must guide decisions, especially with regard to sacred and/or protected spaces.
- Textual description of a general area can be used instead of mapping for highly sensitive information.





Navigating practical and bureaucratic concerns; fostering advocacy

Video 2

Future of project: Increasing awareness; deepening partnerships; removing barriers

- Website
 - multilingual content and more translations (for wider access)
 - interview excerpts and maps; associated dialogue about content
- Video teaser-trailer for project (useful in seeking funding)
- Plans and wish list for future
 - Improvements in metadata schema: accommodate multilingual content without privileging one language
 - Deepening connections in Cuba, Haiti, Puerto Rico
 - Increased community participation in mapping & web content
 - Documentary film
 - Stable funding for all of the above

Q & A

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THANKS TO:

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Paul Coats, translation, interpretation, captioning

Matthew Champagne, IU Jacobs School of Music, Video/Audio engineering

John Arbuckle, GIMMS Public Services Coordinator

SURVEY:

If you registered for the workshop, you will receive an email with a brief survey. Please help us improve our content and delivery by filling it out. Thank you for participating!



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