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Urban Environment: From Latin America to California

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UC GIS Week
Tuesday, November 19, 2024
3pm-4pm
Urban Environment: From Latin America to California

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All right, welcome everybody to our final session for day one of UC GIS week. We've got an excellent slate of three presentations in this last block, all focused around the urban environment from Latin America to California. Our first presenter will be Elena Stacy from UC Berkeley. And she will be presenting migration and structural transformation, the case of Mennonites in Latin America.

Elena, take it away.

Migration and Structural Transformation: The case of Mennonites in Latin America

Speaker: Elena Stacy - UC Berkeley

Abstract:

Using novel geospatial data on Mennonite colonies in Latin America and satellite night lights data, I study the effects of the introduction of the colonies on structural change in a host country. I find that on average, colony establishment attracts increased growth nearby, and de-growth far away from colonies. The results suggest that the colonies, which present persistent shocks to agricultural productivity, may induce a reallocation of human and economic activity in the host country.

Transcript: Video Transcript: 0:33

Okay, let's see if I can get this share.

All right, great. Can everyone see my screen okay?

Yes. Awesome.

Okay, great. So I'm gonna be talking today about a project that I've been working on, on migration and structural change,

which concerns Mennonite migration in Latin America.

So just for a quick overview of who the Mennonites are.

So the Mennonites are an ethno-religious group belonging to the Anabaptist sect of Christianity. And they tend to migrate at the community level in an enclave within their ethnic group. They tend to specialize in agriculture and they have a low propensity of transforming into other sectors of the economy for cultural reasons. So that means as the rest of the economy might develop away from traditional agricultural economies,

the Mennonites' ethnic enclaves are going to tend to continue to practice agriculture.

And the Mennonites, so if you're not familiar with the Mennonites, they're quite similar to the Amish in that they often wear plain clothes and don't have a very high adoption of technology and kind of keep to themselves and are quite insular.

And so there is heterogeneity across Mennonite settlements in terms of how much they might participate with the surrounding market.

And in the case of Latin America, Mennonites were typically historically encouraged to migrate into the nation by the government and given a lot of religious freedoms in exchange for their agricultural productivity that they would be bringing to the nation during historical nation building.

This is coming at a time in which we're observing Mennonite colonization continuing to expand into many lower and middle income countries that have a large amount of land resources available with which the Mennonite colonies might be able to engage in agriculture and sort of have privacy and be able to practice their religion freely. So this is happening in Suriname, Peru, Angola, the Democratic Republic of the Congo, Ethiopia, and many other parts of the world. So that's just kind of a quick introduction.

To the Mennonites relevant for this project.

And then, so here's a quick map that shows you sort of how the Mennonites have flowed into Latin America throughout history. So you see them first coming over from Canada in the 1920s to Mexico and Paraguay and kind of continuing to expand within Latin America from those initial destinations

that they went to and continuing through the 2010s and to today. So this is almost a 100 year long, or this is over 100 year long migration at this point.

So in the news right now, Mennonites are sort of being attributed to the growth of the agricultural sector and some infrastructure in the parts of the world that they're moving to in Latin America.

And so in some cases, people believe that the Mennonite colonies have brought new crops and lots of productivity to the agricultural sector in a new market.

But at the same time, the Mennonite colonies are also sort of coming into the news for bringing environmental destruction to these areas, for clashing with indigenous populations and kind of going beyond the boundaries that they have initially set and potentially causing additional deforestation,

crop fires and things like that. And so what this project aims to do is to focus on one specific country that has been affected by this migration in a very strong way, which is Belize. So in Belize, 3% of the population are ethnic Mennonite, and 70% of all of the arable land in Belize is owned by ethnic Mennonites. And ethnic Mennonites also produce 95% of all of the chicken, 80% of the rice, the corn, the sorghum and the beans in Belize.

So this is sort of a small country that epitomizes this kind of development strategy that some governments in Latin America have taken to encouraging migration by Mennonite enclaves in exchange for development of their agricultural sector.

So my specific research questions, a broad question that I'm asking is how does agricultural colonization by outside groups affect native development paths? That is the development paths of the people who are already living in that country. And I'm specifically asking what the impact of Mennonite settlement in Belize is on the spatial allocation of and on the composition of native human activities. So some examples of this could be population growth, how much growth is happening and in which parts of the country.

Agricultural labor shares, how many people are working in farming versus in some other sector?

How much of the land has been deforested in that native area? How is that land being used? And what's the current quality of the environmental resources as a result of this settlement?

So just for some background on how we might think about in agricultural shock affecting the subsequent development of rural versus urban population growth and economic growth of different sectors, there's a first wave of literature that sort of saw a agricultural productivity increase as allowing people to move out of agriculture and grow other sectors. And then there was a second wave of literature that found that increasing agricultural productivity could actually lead to specialization into agriculture

and inhibit urbanization and urban growth in an economy. And then there's kind of a new wave of literature that's saying, well, it depends on a lot of things including the specific nature of

those productivity changes and also how humans are spatially reallocating themselves. So my paper would hope to contribute to this literature by helping to disentangle the spatial component and the compositional components of this structural transformation story through a specific type of shock to agriculture which is the introduction of Mennonite colonies into a country.

Okay, so I'm using some data on Mennonite colonies that was put together by some geographers, Lipolaine de Woro et al in a 2021 paper where we can see 228 ethnic Mennonite colonies throughout Latin America. And within Belize, there are 13 of those. I know when they were established and how big they are. I also have nightlight data to characterize growth and I have population data to characterize population growth. And then I have human settlements within Belize which are non-Mennonite settlements.

And so for now, the only outcomes that I'm looking at are nightlights and population but I'd like to add in additional land use outcomes

as I continue to work on this project.

And so here's a quick look at the Mennonite colonies and the non-Mennonite settlements in Belize. So the Mennonite colonies are going to be the shades of blue and the non-Mennonite human settlements of Belizeans are going to be the yellow polygons. So you can see there is a really large share of Mennonite colonies in Belize, especially when compared to the other human settlements in Belize that are in yellow. You can see Belize is quite sparsely populated.

This is kind of all these empty areas without human settlements are gonna be extremely rural, underdeveloped areas.

And so you have these huge swaths of Mennonite colony areas throughout Belize. And the color shading here is just to illustrate to you when those colonies were established. So the darker ones were kind of established earlier, closer to the late 1950s and the lighter ones are popping up in the modern day.

So what I do is I, for every human settlement in Belize I calculate its distance to their nearest Mennonite colony. And then I just categorize those based on whether you're very near to a Mennonite colony,

you're middle of the road near Mennonite colony or you're very far away from a Mennonite colony, very high distance. And I do this using simple straight line distances and then again, using road distances. And I compare my results for each version of this.

So the results of a simple, just a bin scatter showing the averages looks like this. So for light intensity, what we're seeing here on the X-axis we have year, number of years since your nearest colony was established. And on the Y-axis we have your average light intensity. What we see is that the first tercile, those human settlements that are the closest to Mennonite colonies are seeing a sharp increase in their light intensity after a Mennonite colony is

established nearby. And places that are farther away from Mennonite colonies are actually getting darker.

It looks a little bit different for road distance but you're still kind of seeing this same pattern.

And then I redo this again for population mean and population sum in each human settlement. And similarly find that it appears that these human settlements are increasing in population after Mennonite colonies show up and they are either trending flat or maybe even decreasing a little bit after Mennonite colonies show up if they're farther away.

And so these are just simple means. There is no controls here, but I'm still hoping to kind of go from here and do some further analysis. But I did run regressions with time fixed effects and find similar results as well. But moving forward, what I would like to do is generalize this empirical strategy to the pixel level rather than the human settlement level so that I can extend this analysis to potentially more geographies besides just Belize because there are eight or nine affected countries throughout Latin America.

And I'd like to redefine the treatment of Mennonite colony exposure in terms of all of the Mennonite colonies within the country instead of just your nearest Mennonite colony because your nearest Mennonite colony is a kind of rudimentary definition of how affected you are by the Mennonite colonization.

And then taking into account that those colonies are coming in at several different time periods throughout history. And then I'd like to add in some geographic controls to consider idiosyncratic geographic trends, preexisting urban clusters and things like that.

So the next steps on this project will be to keep working on that analysis, generalize it to the pixel level, add in some additional countries, and also take a look at a lot more of these really interesting outcomes such as urban versus rural population density, land use classifications, and some of those environmental outcomes like deforestation, NDVI, crop yields, and et cetera.

Okay, so that's all I have for now and I'm happy to take questions. Thank you.

Thank you so much, Elena. I was not aware of the Mennonites in Central and South America. That's really fascinating to me. And yes, please put your questions in the chat and then we're gonna address them at the end of our three presentations.

Oh, got it. Our next presenter is Veronika Vucetic of UCLA and she will be presenting on invisible urban geographies, cartographic approaches to visualizing anti-homeless topography in Venice, California.

(In)Visible Urban Geographies: Cartographic Approach to Visualizing Anti-Homeless Topography in Venice, CA

Speaker: Veronika Vucetic - UC Los Angeles

Abstract:

Using Venice, CA as a case study, the lightning talk will cover the ways our urban environment is shaped to exclude unhoused people from public spaces. First, examples of physical additions to the urban topography—through the use of sleep-deterrent benches, sidewalk planters, fences, and illegally painted red curbs—will be shown to exemplify the easily visible cases of anti-homeless methods of exclusion. Next, the talk will cover a case study of Venice, CA, and its proliferation of parking restrictions that deliberately restrict overnight parking and parking of oversized vehicles through the Los Angeles Municipal Code 80.69.4. This will use the results of a mapping project conducted with volunteer field data collectors to visualize the ways the urban topography is being cultivated to increasingly exclude unhoused people from communities through invisible legal barriers that penalize those in poverty. The talk will end by emphasizing the importance of using cartographic methods to make visible the components of the urban environment targeting unhoused peoples that are often invisible to housed members of the community.

Transcript: Video Transcript: 14:29

Hello everyone, good morning. Good afternoon, I should say. I am a fourth year undergraduate student at UCLA and for my lightning talk, I'm gonna cover invisible urban geographies through a cartographic approach to visualizing anti-homeless topography in Venice, California.

To begin, some important points to establish as I discuss the urban. Urban topography includes features of an urban landscape beyond just natural landforms. It also includes anthropological structures such as infrastructure, roads, and buildings.

Urban space is not just about its physical attributes but also includes social relations and interactions between people, rules, regulations, expectations, modes of inclusion and exclusion. These are all dynamics of urban space and a part of its everyday functioning. The social dynamics of urban space feature inclusion and exclusion practices that regulate the type of behaviors considered to be accepted and encouraged within the socio ecosystem.

Social hierarchies are embedded into the urban topography and otherized groups of people on lower rungs of various axes of social categories.

Here are some examples of visible anti-homeless topography that we are likely all aware of. Benches that have railings or spikes to keep people from sleeping on them. Planters used to beautify the city and occupy space where homeless encampments frequently pop up. Illegally red painted curbs used to limit parking of our recent campers. These are all visible physical attributes present in the urban topography.

Aside from these physical attributes to the urban topography that target and house people and exclude them from public space, there are also invisible mechanisms that do the same work. If you're not someone that is unhoused yourself or studying urban poverty, it can be very easy to miss. In particular, municipal codes that outlaw the use of public space are ways that urban

topography is cultivated to exclude on house people from the public eye. This is the focus of my presentation today as I use Venice, California as a case study to make visible this anti-homeless topography and the struggles on house people face traversing and surviving in the city.

Under the mentorship of Samuel Lipsker, a UCLA sociology PhD candidate, I worked with the council district 11 coalition for human rights group to map the proliferation of this municipal code 80.69.4 that outlaws the overnight parking of oversized vehicles. We wanted to make visible these parking restrictions and examine its impact in targeting unhoused people who live in their vehicles. People that violate this restriction are hit with parking tickets and eventual vehicle impoundment, more fees for those already financially struggling and pushing them to lose their last forms of shelter and eventually end up on the street. Rather than create more safe parking areas for people living in their vehicles, the local government focuses on lining the streets with these parking restrictions to continue to banish poor people from public spaces and the urban ecosystem.

Each volunteer from the CD11 coalition for human rights group was given a neighborhood within our study area of Venice to visit and document the parking restrictions. They noted the parking regulation, where they began and where they ended. As field data collection is an especially strenuous task and our need for utmost accuracy, audits were conducted for the more tedious streets or anywhere I felt needed to be checked and were completed after the initial round of data collection. I spent months inputting this data into the QGS software line by line, street by street, and included the start and locations of these parking restrictions.

Here is a finished map of our project. The red lines are the parking restrictions outlawing parking of oversized vehicles overnight between the hours of two to 6 a.m. The green lines are parking restrictions that outlaw parking at any time, which is especially important to include in this visualization because Venice, California has a lot of alleyways that appear on the base map as normal streets. As you can see, our study area of Venice is becoming increasingly inaccessible for those living in their vehicles. There are very few places where people can park overnight without receiving a ticket, and even those streets are fleeting as council members continue to pass more motions.

These parking restrictions that do not apply to house members of the community are easy to overlook and ignore. They are especially invisible to the urban topography aside from signage. However, for an unhoused person living in their vehicle, their urban topography is filled with these types of restrictions, red tape, and hostility. Please note that this project also included more information on parking restrictions, such as metered parking and hourly restrictions. This is a much more simplified version of the map for sake of visual simplicity in this presentation.

Cartographic methods allow for this invisible topography to be made visible. This is especially important in advocacy for unhoused rights and challenging the local government's method of exclusion for impoverished communities. This municipal code 80.69.4 deliberately targets people that live in their vehicles and can lead to many people losing their last forms of shelter.

Please keep in mind that unhoused people may also be veterans, disabled, elderly, people of color, single parents, et cetera, and these factors can make survival in the urban environment extremely difficult and dangerous. It is important to use cartography in ways that aid these targeted communities and bring to light the struggles they face traversing an urban topography systemically made to exclude them. After all, unhoused people also have a right to the city.

Thank you all for listening to my talk today and special thanks and credit attributed to my mentor, Samuel Lusker and Peggy and the CD11 Coalition for Human Rights team for their guidance, assistance, and support during the project. If you feel the need to reach out for more information, I have my email listed there and the email for the CD11 for Human Rights.

Thank you so much, Veronika.

We are now going to move into a closely aligned topic with a team from UC San Diego led by Julie Wartell on the Homelessness Hub at UC San Diego, using GIS to understand a complex issue.

The Homelessness Hub at UC San Diego: Using GIS to understand a complex issue

Speaker(s): Julie Wartell, Haven Lo, Patricia Estaris, & Lily Keefauver - UC San Diego

Abstract:

The Homelessness Hub at UC San Diego's mission is to advance collaborative, equity-focused research, education, and policy on housing and homelessness. Our GIS/Data Team includes post-doctoral fellows and undergraduate students. The portal is powered by Esri's ArcGIS Hub with a focus on supporting and assisting policymakers and researchers using spatial data, maps, and analysis. We started in early 2020 with a small grant and expanded in 2022 with private funding to become a research lab. In this presentation, we will provide an overview of the Homelessness Hub and highlight a few of our GIS-focused efforts. These include the creation and maintenance of the Hub data and mapping portal, data collection for a homeless encampment spatial model, and the process to create an interactive dashboard that includes over 10 years of monthly counts of people living on the street, in tents, or in cars in Downtown San Diego.

Transcript: Video Transcript: 20:44

Actually, thank you. And I am ready to go, but my three undergraduate students were just getting out of class and I was told we wouldn't start before 3.30. So they should be here any minute, but I don't know if you want to maybe have some questions for the first two and then we can follow up in a few minutes.

Sure, I don't see why not. And we already have some great questions in the chat. So I see a few for Elena. Can you say more about pursuing level of pixel analysis? How does this report out or what can you interpret or what conclusions can you make from analysis at the pixel level?

Yeah, great question. So what my analysis is currently doing is taking some summary level statistics within a polygon that represents a human settlement and then seeing how those summary statistics change

as a result of Mennonite colony establishment. And what the pixel level approach would do is essentially instead take that unit of analysis and change it into a square pixel of that is just like representing an arbitrary point in space rather than a human settlement. And so that would allow us to essentially predict what happens to any space

as a result of this Mennonite colonization. And it's no longer dependent on the geographic administrative boundaries that are drawn by the government. And so oftentimes those boundaries don't speak to each other very well across countries. In a place like Belize, there's only 13 municipalities and one city, not very many towns. So doing analysis at the town or village level is a little bit of a limitation and doing things in terms of pixels or essentially square grids can help that be more generalizable. So essentially it'll be the same as what I'm doing now except instead of towns, I'll be using little squares on a map.

Hope that answers your question.

And there's another question for you from Eva asking if you have a suggested workflow for your month.

Oh, this is a tough one. So I guess the workflow that I've used here is essentially to find a series of spatial data sets that are representative of the features that I'd like to analyze

and then go ahead and convert those into a data set that I can use and manipulate. So what I would recommend doing is essentially finding,

like I said before, geographic administrative boundaries for the location that you'd like to analyze and then thinking about what the unit of analysis, like spatial unit of analysis you'd like to use. Is it a pixel? Is it a town?

And then pulling that data together

is kind of the place to start analyzing those things.

I'm seeing another question, but I don't...

Yeah, there's a question from Liam. Have you thought about how to include the potential growth of colonies into your analysis? I'm thinking about how you could potentially identify or analyze maybe faster growing colonies if they have more influence.

Mm-hmm, yeah. So at this time, I'm observing colony boundaries at one point in time. So it's a snapshot of the colony boundaries.

Recognizing the fact that over time, those colonies might have gotten bigger or smaller, most likely bigger. And that's not something that I'm really taking advantage of at all because I would need to construct new data to observe the size changes in those colonies. And I don't have that at this time. But one thing I would like to do is to incorporate the size of the colony into the analysis, like you're suggesting essentially,

a larger colony is probably going to have a bigger effect than a smaller colony. And that's something that I am planning to include in my next iteration.

And Amy asks you if you could speak to the agricultural practices that they leaned towards, monoculture or polyculture within a single community. And are these products going into the local economy?

Yeah, so it does depend on the colony. The larger colonies are typically looking like a large agricultural operation that's going to lean towards cash crops,

intensive, not necessarily one single crop, but you're looking at your typical soy, dairy, beef, chicken,

would be the large crops that were happening within those colonies. And then a smaller colony, that's even more sort of traditional and insular would be looking something more like subsistence-oriented agriculture that would be more like a polyculture within the community. And that's another thing that I would really like to exploit as an area of heterogeneity in the analysis. Great question.

And we've got a question for Veronika from Lupe.

Lupe asks if you were going to potentially add some of the hostile architectures to your map, like the bus stops without shade, public spaces with extra bright lights, things like that. Thank you for the question. I've definitely had discussions with people part of the CD11 Coalition for Human Rights about adding more data. They've specified that they would like more data on like illegally red painted curbs and outside dining that has taken away from available parking areas.

It becomes a little bit more difficult when it comes to getting that data because so much of it is reliant on like field collection. And a lot of the volunteers for CD11 are a lot older and technological.

They're not more, they need, they struggle with technology sometimes, which has made the process of collecting field data a little bit difficult. They prefer to write on like physical paper maps rather than uploading or typing into like a Google Sheet.

So in terms of bandwidth for collection of data, we don't really have that at the moment, but I do have plans to transfer our data to ArcGIS where I can make it a more interactive map, make it easier to use and maybe send out the link to communities of unhoused people who may need information of, oh, where can I park and not park?

And aside from that, I also wanna look into like the legality and legal framework surrounding the municipal codes and like take it to a more legal analytical perspective.

And another question for you, Veronika from Thala. Do you know whether the LA municipal code applies to LA County at large or the city proper?

I believe right now it's the city proper. It's passed via motions for like the different city council districts.

And if you live in the LA area, I've seen them in my own neighborhood pop up and they haven't been a huge thing in the LA area until recently, same with the municipal code 4118. They've really ramped up passing these sometimes in sweeping motions and sometimes quasi legally.

So yeah, I'm not sure. It definitely could be expanded to the County, but that would have different County frameworks for passing those.

And it looks like our group is here for our final presentation. So we'll resume with these questions at the end after Julie's group present.

So two, the Homelessness Hub at UC San Diego and using GIS to understand a complex issue.

Excellent, thank you very much. And thank you all for the great presentations beforehand. And like you said, this is very similar in terms of the issue and we'll get into it. So I'm Julie Wartell. I am a faculty member and researcher at UCSD. And with me today, I have three of our awesome undergraduate students, Patricia, Lily and Haven. So I'm gonna start it off and kind of give an overview of the Homelessness Hub and what we've been working on and let Patricia, Lily and Haven dive in to some of the projects that they have been working on as part of our team.

So who are we and what do we do? The Homelessness Hub was initially started in 2020

and actually Amy Work as one of our Zoom hosts here was a key person that helped us start that. And it really got started when some fellow faculty members were part of a research group. So there was a semi-organized group of any researchers affiliated with the university in San Diego County were meeting every quarter. And just talking about the research they were doing, et cetera. And one day I got a call from one of those researchers and she said, can you put on a map all of the homeless encampment calls from the city of San Diego? So I did and I sent it and I guess everyone said, wow. And she said, can you put the parks and bus stops? And I did that and no one, none of these researchers that had been meeting had really looked at data spatially around homelessness in San Diego County prior to that. So we applied for and received a small grant in the middle of 2020.

And it really just started the first couple of years was kind of putting together data, getting the word out that we were looking for data, we could help create data, et cetera. And then in 2022, in the summer of 2022, we got some private funding. Super fortunate that we were able to, we now have four faculty members, only one full time. Three of us are part time teaching and part time research.

And then we have three postdocs. So for two years, one and a half to two years and then six to eight undergraduate research assistants. So we have four undergraduate research assistants as part of my team, which is the GIS data team that we're gonna focus on today.

The idea was initially, again, that we started by just being really a GIS portal or hub using Esri's ArcGIS hub. But the idea of expanding was that we do research in addition to just GIS, but of course, GIS at the core of our team. And we're always trying to get the other researchers to think about is there spatial data or spatial analysis that we could contribute. So we have numerous collaborations, both within UCSD, with public health, with engineering and others, as well as external researchers, some more formalized partnerships on existing projects and others with just kind of discussing ideas at this point. So into the future, we hope to do more applied research and more evidence-based and data-informed policy. So really the goal of the overall Homelessness Hub is to use evidence-based and data-informed to help inform policy makers and do real-world applied research.

Some of the past projects that we've completed already, one of our first projects was working with the San Diego River Park Foundation and the people assisting the homeless, also known as PATH, who works throughout the state, I believe, definitely in Southern California. And that was using Survey123 to set up a little survey for the PATH folks to go into the river park. It was during COVID and the idea was to learn about the people living in the riverbed to help whether it was dealing with COVID, whether it was elderly, disabled. So on the occasional day that we get a bad rainstorm in San Diego, our riverbed floods, much like LA and several other places, that's dry most of the year. So the idea was collecting that census to be able to inform them and help them extra as a storm was coming. That led to a project both with the river park and PATH as well for the Southern California Coastal Water Research Project, also known as SCORP, where we looked at pooping in the riverbed. Their theory was that the homeless were contaminating the riverbed.

And through part of our research, and again, we assisted with creating the survey and collecting and analyzing the data,

we found that that was not the case. We have lots of other contaminations, but it was not where necessarily the homeless were living and using the riverbed.

Two related projects, the Eviction Prevention Collaborative, we created a data collection tool and a dashboard for them. And then the Eviction Moratorium Analysis was using a lot of that data, as well as some additional data around evictions in San Diego County to examine the effect of the moratorium and the different times the moratorium went off between the city and

the county. And then lastly, and we're still working on some articles related to the UC Institute of Transportation Studies, looking at transportation and mobility around affordable housing. So that's more on our housing precarious side versus the homeless side of the research house.

And then what our students are gonna talk about more today, not the first one, the Homeless Services Ecosystem Evaluation is a huge evaluation. We have probably 10, 12 researchers working on that. That only a very small part is GIS or spatial-based. So we have mapped where all the shelters are and where transitional housing is, some of the services, but there are a lot of case studies and a lot of things going on moving parts. We do have one of the first reports that came out is available on our website.

And then what you're gonna about to hear about in a little bit more detail is three projects, the Downtown Partnership Mapping Project, the Homeless Encampment Spatial Model, and then our Homelessness Hub GIS Portal, which contains data maps and more that Haven will talk about. So I'm gonna turn it over to Haven.

Hey everybody. Yeah, thank you, Julie.

So yeah, first of all, I just like to direct everybody's attention to the QR code or the link to the bottom right of this slide. You will find the link to our ArcGIS Hub site,

which we would recommend you to view on your computer or your desktop. So feel free to scan on your phone, but maybe air drop the link to your computer.

And I'll just give everybody about a few more seconds just to take a look. Oh, thank you so much, Christine.

And yeah, so as Julie mentioned,

Homelessness Hub started in 2020 as the hub, as the hub site, as a portal for people for us to disseminate data. And as you can see in the mission statement in the bottom left, we at the Homelessness Hub are very committed to not just collecting data, but also sharing data and empowering our communities with access to high quality data mapping and spatial analysis.

And as you will find throughout our presentation, we are very much reliant on Esri products.

And an ArcGIS Hub site has the functionality of being a very easy way to showcase a variety of Esri products we have on a webpage,

as you can see on the slide. And overall, our hub site is designed to be very easy to use and navigate so that even the person unfamiliar with GIS can easily use our data, look at our maps and look at our story maps, et cetera, and empower their own interests or work.

So here on the slide, we've picked out a few examples of the content that you can expect to see on our sites. So starting from the left, we have story maps. So in this specific screenshot, you can see some student work from our USP curriculum. So we're the Homelessness Hub, housed

under the Urban Studies and Planning Department. Some of our faculty also teach homelessness related classes and their students have created story maps and we can showcase them here as a great way to engage with the audience and engage with the people who are viewing this site and understanding why is the data important. And also we have, as Julie mentioned,

the very foundation of what we started off with, which is the data repository and portal, giving people access to different kinds of spatial data. And we currently have a total of 76 public data sets in the portal, ranging from eviction data to more general stuff like public transit routes. And we are hoping to increase that number as we get access to more and more data and give it to disseminate it with the public.

Firstly, this colorful map you see here is our Make Our Own Map application, which we built using ArcGIS' Experience Builder. It takes some of the public data and layers we provide in the portal as something that users can interact with and so that they can get used to playing around GIS and understanding importance of like, okay, so this is the things that people actually do in the research is like combining different kinds of data sets to identify trends and then become used to what we as a Homelessness Hub do.

And then lastly, we also produce some static maps. So as you can see on the right, these are often standalone maps that the standalone projects are, that the data team has taken on, such as the screenshot highlighting changes in the people enumerated by the San Diego Regional Task Force,

who conducts a annual point in time count of all the people that they see experiencing homelessness.

And this map compares the counts between 2020 and 2024.

And other maps we might have are going to be those taken from research projects that homelessness has published. Also, we have a lot more stuff such as a dashboard, which my colleague, Lily, will speak about later. But for now, we can turn it over to Patricia to speak more about data requests.

Hello, my name is Patricia. I'm an undergraduate researcher for the Homelessness Hub. And I work closely with our postdoc researcher, Zofia Benaroska-Bickel, and she's leading the effort for our Homeless Encampment Model. So this uses an exploratory spatial data analysis, EDSA, ESTA, and estimate a non-spatial regression model, followed by a spatial econometric model. This will include a variety of variables that will help explain homelessness informed by our own research entities, work previous studies and other relevant data resources. So we're currently in the process of working on our model, but I did want to share some tips and tricks that can help when you're working with public data requests and also organizing data files, raw data files. So on the right is an example of a city records request of me requesting encampment reports for the city of Chula Vista. And so one of the first steps to requesting public data is to

confirm if this data has been requested before. Public records usually have an archive where you could look in the search bar of specific requests, and that can also ease the wait time if you're kind of looking to log and compile a bunch of data. When you realize that you have to make a data request, it's good to be very specific in what you want in the formatting and all of that. So firstly, specify the date range for the dataset. As you can see in step two, I put January 1st, 2021 to June 1st, 2024.

Also, it's important to introduce your position and use of the data. I think it's really good if you're a student requesting data, they're more so open to sharing that with you if it's a city entity or organization, and also specify the data format type. So I put Excel or CSV format, and really great is optional to include a similar dataset for reference. So I referenced 311 data that they can look at and kind of format their data similarly too.

Looking back, I would specify the latitude and longitude to ease data cleaning and geocoding. So this is me just reiterating that it's important to be very specific in your data requests, and make sure you're very thorough about these steps. Feel free to screenshot. This was really helpful for me in my data request process.

So in the next step, I'll kind of talk about organizing a lot of data. So far, we had maybe 70 rows of data that we were compiling from the public, also from our own connections, but it's really good to use Google Sheets or like a tabular organization software.

Yeah, we were using Google Sheets here and really established labeling conventions. As you can see, it's kind of tiny, but we use number two to represent the category of all sleeping infrastructures for the data we were collecting. And also we included data specifications such as jurisdiction, polygon, point data, variables, and available formats and years. And this is really good with data organization. And if you're working with other software types, like we're taking a lot of our data and putting it into R. So those considerations are very important to note. Also data attributions, it's very important to give credit where it's due for the institution, the source link. And other helpful information for you is to include the map link and also data quality and use formatting tools like highlighting rows, if you're missing data or make certain comments. And that was really helpful for us in being organized. Just below the table is just an example of how we're continuing to use that naming convention. And that really helps you long-term when you're using a bunch of data files and staying organized. So those are all my tips and tricks. I hope that was a little bit helpful with the limited time we had. And so Lily can take over on our next project.

Hi everyone, my name is Lily. I'm an undergraduate researcher at the Homelessness Hub. And today I'm gonna be talking about the San Diego Downtown Partnership Dashboard, which Julie and Haven had sort of mentioned earlier. So this is a dashboard that exists on our ArcGIS Hub. It shows the geographic locations of people experiencing homelessness from 2014 all the way to 2024. This data originated from enumerators from the Downtown San Diego Partnership, who were on the streets and manually writing in where they saw homelessness people. And then we

digitized that and put that into the staff work. And so on the side, you can also see there are some summary statistics based on what you're viewing in the map. It'll show you how many people total are counted, how many people there are per dwelling type, whether they're an individual in a structure or in a vehicle, and then how many people are counted by month. And this count is not a unique count. So if someone is experiencing homelessness for multiple months, they will be counted for each of those months.

So you can also filter the data depending on what you're interested in. And it's best to explain this through an example. So on the left, I've selected to just look at November 1st, 2022 to November 1st, 2023, and Barrio Logan and just see individuals. And so then the map will show you those points. And then the summary statistics will update based on that. And then when looking at dwelling type, from May 2018 and onwards, the Downtown Partnership staff had counted one person per one individual, 1.75 people per tent, and 2.03 people per vehicle. And this was based on the Regional Task Force for Homelessness and HUD's methodology. And then you can also filter by neighborhood. More areas have been added over time, but in 2023, we had 10 different neighborhoods. And you can see in the photo on the bottom right is just East Village, all the counts from 2014 to 2024.

And a final disclaimer is because these counts are being manually inputted, there is likely some errors in them and likely a risk of having an undercounting the amount of people. And yeah, thank you.

Thank you everyone. And we'll take any questions. I think we have a few more minutes left. I'll stop share.

We do indeed. Let's have a quick virtual round of applause for all of our great presenters in this time slot. Alaina, Veronika, Julie, Haven, Lily, and Patricia, these have all been really fabulous. And I'm gonna pick up the questions where we left off earlier. And first, Amy's got a question for Veronika asks, do you have thoughts on ways to expand your project to other areas? What would have helped in the data collection process?

So the LA Controller's Office actually has done this project to the LA City as a whole. One of the reasons why we chose the study area of Venice was because that part was not included in their data collection. Instead of taking volunteer field data collection, they went a route of scraping city council files, which works to catch most of them, but it can miss some of them that are hidden in other motions or were passed under a specific ordinance, like the ones in the Venice coastal area.

So we don't have any plans because we don't wanna do any like redundant data work that's already being done. Though the LA City Controller's Office has taken down the map that they published earlier this year, I'm not sure why, but they do take on a lot of the data work for unhoused attributes.

Q&A

Thank you. And Kinshata asks, sort of musing, if it would be useful to analyze the hostile landscape and architecture by tax dollars paid to construct these hostile things? Yeah, I think that would be a really interesting way to approach this. I think this has really opened up kind of a whole new world of research for myself. And as things are moving forward, there's a lot of new PhD candidates that are working in like legal aspects of the unhoused crisis.

I think that there are so many ways that you can intersect the proliferation of these municipal codes in correlation to the neighborhoods and environments that they are, where they are more heavily enforced too, in terms of incarceration rates. So it's definitely like a, that would be a great thing to look at. Thank you. And Lupe has a question for the San Diego Homelessness Subgroup.

When is the data for the dashboard updated? Do you all worry about the data potentially getting in the wrong hand, such as police leading to displacement?

I just finished writing as you were asking that, but I will say, so the data has been out there, just not in a very usable format.

The Downtown Partnership, when they go out every month, they actually have paper hand-drawn maps that they are handwriting, scanning in, and then their hand counting according to the neighborhood. So that's what we digitized, we being a group of students, which took many, many hours. We've tried to get the Downtown Partnership to actually use, so every one, two, three, are a tool that we've developed, but they're not interested.

And the second part of that is there is no evidence that police actually are using counts to be proactive or to go do enforcement. Although as part of our spatial model that Patricia talked about, we are looking at, we have gotten through public records data on enforcement actions by the San Diego Police, and going to look at movement of the encampments that were counted by the Downtown Partnership to see if it correlates with enforcement actions by the police.

And it looks like you have a follow-up from Lupe, asking if you all cross-reference with the PIT counts.

We don't do like a one-to-one cross-reference, but we do have, I think within that first, if I remember correctly, the first Homeless Shelter Services Report, we did look at PIT data for the census tracts for Downtown and overlaid it with the month since they're done in January, we just took January and looked at that. There's a lot of research that shows that PIT counts are not very accurate,

which is part of the reason Downtown Partnership is doing it every month, and the San Diego River Park Foundation actually does, they do the PIT count, but they also do a spring and a fall

census living in the riverbed to, again, make sure that they have enough resources and can bring in resources as the numbers go up.

Thank you, and Sala has a question about your dashboard, saying there seems to be a slight decline of reports during COVID. Could this be linked to eviction moratoriums or simply less reporting? Also, is there a specific reason that April, 2023, most recently, had a larger number of reports?

Yes, definitely during COVID, A, we're not out counting, but B, San Diego had a lot of extra shell, emergency shelter beds to ensure, so those lasted for probably six to nine months, I think, the emergency shelter beds, so there would definitely be a dip in count during COVID.

We don't know the April, 2023, that just came up recently too, and we haven't been able to explain that just by looking at the data or anything that we're familiar with.

Thank you so much, and we have about five minutes left if anyone has any final questions. And just a reminder, we do also have a UCGIS Week Slack space, so if you have a great question that comes to mind as soon as we end our Zoom, feel free to reach out to folks there as well and keep the conversation going.

Sounds like people are done. Thank you for hosting GIS Week and having us speak.

Thank you all for being here today. We have two more great days of presentation scheduled, so we hope we will see you all tomorrow and Thursday as well. So I hope everyone has a great rest of their afternoon and happy GIS Week.

Thank you everyone.