Podcast Transcript: Community-Engaged Research Leads to Soil Cleanup

[Theme music]

Ashley Ahearn (Narrator): You're listening to Environmental Health Chat – a show from the National Institute of Environmental Health Sciences that explores the connections between our health and our world.

I'm Ashley Ahearn.

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In the mid-1900s Atlanta, Georgia was home to a lead smelting industry that has left toxic fingerprints on certain parts of the city to this day.

And as is so often the case, low-income communities of color have borne the brunt of that legacy of pollution.

But Rosario Hernandez didn't know that when she bought a little house on Atlanta's West Side. It was a fixer-upper in a neighborhood that had seen better days.

Rosario Hernandez: But I saw this cute little house, like a bungalow style. Had no front door, no back door. All the wiring was ripped out, the plumbing ripped out, and it had a for sale sign on it. And somehow, I saw a potential in that little house.

AA: Rosario moved in and started restoring the house. And she got into gardening.

RH: Just growing basic things, tomatoes and peppers. And little by little, it kept growing and growing and growing. And I got really good at it. You know, through YouTube videos, through books, I took a few classes.

AA: She got to know her community and realized she wasn't alone in her gardening enthusiasm.

RH: And next thing you know I'm driving by and I see someone putting together this small community garden. So I said – how can I be part of this? So here I am, at 60 years old, reinventing myself as an urban farmer!

AA: The organization behind that community garden is called Historic Westside Gardens. It's a nonprofit that promotes urban gardening and healthy food production in a community that has long struggled with access to fresh fruits and vegetables.

Now, Rosario is the executive director of Historic Westside Gardens – and she's busy.

RH: Now more than ever people want to have a garden. Now more than ever, young folks are coming out and saying can you teach me how to grow some of this, that, and the other? And I'm like, absolutely! Right now, we have four community gardens, we're building another pocket garden this weekend. And we have about 100 home gardens where we put the gardens in their

home and come back every month help them with harvesting, help them with planting, help them with insect control.

AA: A few years ago, Rosario met Eri Saikawa, an associate professor in the environmental health sciences department at Emory University.

Eri and her Ph.D. student, Sam Peters, wanted to work with Historic Westside Gardens to test the soil in Rosario's neighborhood for possible contamination. They had some funding from NIEHS, and they were worried about people in the community being exposed to lead from the smelters. Lead is a neurotoxin that can affect neurological and behavioral development in children.

Eri Saikawa: We know that there have been about 11 lead smelters in Atlanta. And it seems to have been that in area, potentially because it was a Black neighborhood, that there was a dumping of the waste in the neighborhood.

AA: With Rosario's help, Eri and her team of students made house calls to meet people in the community and ask if they would permit them to take samples of the soil in their yards and gardens.

ES: And then we were able to work with Historic Westside Gardens to sample the soil together and look at where the residential gardens are located and where the community gardens are in the neighborhood. So, we were able to sample 11 residential lots and also the five community gardens that they have in the neighborhood, along with the three background sites.

AA: The results were upsetting. The soil in most of the gardens had lead levels that were too high to safely grow food, according to the University of Georgia. Out of the 11 lots they sampled, three had lead levels well above EPA screening standards.

Rosario's property was one of those lots. She still remembers when Sam Peters, Eri's Ph.D. student, called to share the results.

RH: And he says, well, Rosario, your garden is one of them that has high levels.

AA: Rosario's neighborhood is dotted with pieces of slag. It's a rocky industrial byproduct of lead smelting that contains other metals that can harm human health, besides lead.

RH: And I didn't know what slag was. So you know, we looked it up, I took a piece to the science fair that Emory was doing. And EPA confirmed that the lead was coming from those pieces that were all around – small pieces on my front yard, all over the field next to me. And then across the street, there were mounds of it.

But the most heartbreaking part was that I have three grandchildren that were here with me, that played outside, that didn't wash their hands, that would pick up the pieces of slag and throw them at each other's feet, because they're kind of like spiky, almost like a lava rock.

AA: Rosario's daughter took the grandkids to get tested and found they had elevated blood led levels.

So, Rosario went from an urban gardening activist to an environmental justice activist. She was determined to fight for her community to get the attention and cleanup help it needed. Eri Saikawa found her passion inspiring.

ES: As a scientist to see her go through that emotional process and really be that champion for the community – it's something that I really admire. And that's what drives me to be able to contribute, even for a little bit, to be able to do something for the community.

AA: Eri worked with Rosario and Historic Westside Gardens to share their results more broadly with the community.

ES: We really had to figure out what would be the best way to convey the message and the science and what can they really do about it. And so, we created materials to go over what we found. And then we told them about the situation, about the high levels that we were finding, and it really became a Q&A session. And so that actually led to having an event with Historic Westside Gardens to have more residents bring their own soil samples to make sure that this is not prevalent issue in the neighborhood.

AA: The community was concerned. People wanted to know where the contamination had come from, what were the health risks, and what could be done about it. Eri said that part was hard – she's not a doctor and couldn't answer all the questions – but she was able to get her data in front of the people who could help.

In fact, it was her research – in collaboration with Rosario and Historic Westside Gardens – that got the attention of the U.S. Environmental Protection Agency.

The EPA stepped in to expand testing for lead throughout the community and has since declared Rosario's neighborhood a Superfund Site and placed it on the National Priorities List for cleanup.

Eri received a grant from the EPA to study potential exposures and health outcomes in the community. She and her team will be gathering soil and house dust samples, as well as biological samples like saliva, blood, and urine from children there to try to find ways to keep them safe.

ES: I still believe that knowledge is power and without it we are not able to act on it. So, I would like to think that by knowing that this is so prevalent, we're able to work towards a more protective society. And so to be able to work with the community members that are really impacted and trying to make a positive change, I think that is so important. And I feel that scientists can have a role in that, even if that's very small.

AA: Now the EPA is working with Rosario Hernandez and other property owners in her neighborhood to remove the contaminated soil and slag and bring in clean soil so it's safe to play and garden there once again.

But Rosario says some people were initially hesitant about participating in the cleanup. They didn't trust the government and were worried about gentrification and losing control of their community. Rosario stepped up. She was one of the first to sign on with the EPA for cleanup at her property.

RH: And so I said to EPA – let my house be the first house. And I had 22 garden beds in the backyard. I had plum trees that would produce so many plums, and I would sell them and make good money and make plum jam. We even made plum wine one year. I let them just take everything. You know, even thinking back, I was just crying. Because I have worked so hard to create this beautiful garden and in a minute it was gone. But they kept their word, they brought in new soil. They gave me some new garden beds, they replaced my plum trees. And yeah, that's already been over three years.

AA: It's been a long journey – and there's a lot more cleanup work to be done in Rosario's community – but she says she's grateful for her collaboration with Eri Saikawa and her Emory University students.

RH: If it isn't for organizations like Emory, if it isn't for certain people that just stand up and pick up that torch and are willing to be advocates for others, nothing will change. We will continue to live in a cycle of unhealthy living. So, I really respect what all the students are doing. And they do it out of love.

AA: For folks who want to start an urban garden – check out the safe urban gardening resources linked at the bottom of the webpage for this episode.

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I'm Ashley Ahearn. Thanks for listening to Environmental Health Chat.