Podcast transcript: Engaging Youth in Research

[Intro 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.

Today we're going to meet two scientists from California who are collaborating on some interesting research.

Jessica Cabrera: Hi, okay, so my name is Jessica Cabrera. And I am 18 years old. And currently I'm in my final year of high school, I'm about to graduate.

James Nolan: My name is James Earl Shear Nolan. I'm the community science manager at CERCH, the Center for Environmental Research in Children's Health, which is in the UC Berkeley School of Public Health.

AA: These two may seem like unlikely collaborators, but they're part of a community-based participatory research group that has been working in the Salinas Valley of California – where Jessica is from – for more than 20 years.

JC: I actually live in the east side of Salinas. And there's a bunch of fields and farmworkers out here, you know, that's what Salinas is known for, it's an agricultural community. And from my house, it's like a five-minute walk, and you'll be at a field, it's very close.

AA: Jessica's parents and grandparents worked in the strawberry fields of the Salinas Valley.

JC: My grandparents, I remember how they'd always have to wear specific layers of clothing to protect themselves from the pesticides that were being sprayed on the fields. So that was just something I saw firsthand.

AA: Exposure to agricultural chemicals like pesticides and herbicides can affect human health. To better understand that, researchers from UC Berkeley partnered with La Clinica de Salud de Valle Salinas – a local health clinic. Together, they began a long-term study called the CHAMACOS study. Chamacos means "little children" in Mexican Spanish.

JN: That work really started with a cohort of pregnant women and their children and we've been following up with them ever since. So ever since 1999, all the way up until now, really thinking about what exposures they might have in their normal day to day lives, and how those might affect health outcomes and larger trajectories of health.

AA: With funding from the NIEHS and U.S. EPA, the CHAMACOS study has followed hundreds of kids in the community as they've grown up – tracking things like neurodevelopment and behavior, respiratory symptoms, obesity, and other health outcomes.

But the research collaboration has evolved into more than your typical long-range cohort study. Ten years ago, the CHAMACOS Youth Council was formed to engage young people from the community – like Jessica – in *conducting* the research itself.

JC: It wasn't until the youth council that I got to learn science in a welcoming and fun and friendly environment that really opened me up to what science can be. And I got to learn science through, you know, physical application of it.

AA: Youth Council members meet 2-3 times per month for a few hours. They help gather data, process results, and do community outreach around the findings. They get credit towards required community volunteer hours from their school. They also get training on professionalism, PowerPoint presentations, college applications, and some of them can apply for paid summer jobs doing the research.

Jessica joined the Youth Council three years ago, as a sophomore in high school.

JC: And it really made me think of the public health side to science, and how public health and science and people just all correlate and using the science to help people, use it to fix issues at large. And that, to me is really interesting and has made me want to pursue it when I graduate and go on to college.

AA: Jessica and James have been collaborating on what's called the LUCIR study. The study looked at exposure to carcinogens from household cleaning products – and what happened when study participants switched to green products.

More than 80 percent of professional household cleaners in California are Latina.

Jessica helped gather and process data from 50 households in Salinas Valley.

JC: We did two visits. And in the first visit, we used air monitoring backpacks to sample data through the air, and we'd have the participants use their conventional products. And in the second visit, we'd have them we'd give them green cleaning products, and have them do the same thing, you know, clean with the products that are given to them.

AA: They found statistically significant decreases in carcinogens like 1-4 dioxane and chloroform when study participants switched to green cleaning products.

And the research has brought changes in Jessica's own household. Her family has switched to using green cleaning products. But, she says, we're all creatures of habit.

JC: The best we can do is to encourage people to make the conscious decision to switch to a better decision that may benefit the overall health. And you know, it's better for the environment. And all we can do is inform, right? And hope that people switch.

AA: So how do you get through to more people to change their behavior? Well, Jessica and the other members of the Youth Council came up with an idea…

JC: Last summer we worked on creating multiple infographic videos. And I'm really proud of what we made and what the LUCIR team came up with. For the most part, including myself, it was our first time animating, and digitally drawing, and using all this new technology.

AA: They learned to use professional video, animation, and production software and they created several short Public Service Announcements in English and Spanish that were just right for sharing on social media…

In one Spanish version, two women are in the grocery store debating over which products to buy…

[Video clip 1 – in Spanish]

JC: And in the video, we talked about ways to reduce exposure when cleaning, how to opt for green cleaning products, and even came up with a narrative story about how harmful repercussions can come when mixing products together.

In another video in English, it shows two small children playing with toxic cleaning chemicals they find under the sink – and mixing them together.

[Video clip 2 – in English]

JN: You know, if you asked me two years ago, if I thought I'd be involved in an animated PSA series, I'd be like what are you talking about? So, that's another one of the beautiful things about working with youth is that creative, and deeply insightful perspective they bring to thinking about dissemination.

AA: James has dedicated his career to community-based participatory research. Engaging the community in the research – and working with young people like Jessica – is making the science better, he says. The research is more relevant and designed to inspire changes in behavior that make people safer.

Sharing that research with the community is also really important. James and other members of the Youth Council have gotten creative about how to do that – with videos like the ones you just heard – but also murals, zines, even a Spanish radio novella series. James also helps organize public speaking events for youth council members, like Jessica, to talk about their findings with their community.

JC: And I did one in Spanish, where I got to speak to the people of Salinas about ways to reduce exposures and ways to take preventative measures and how to just be safer. And I really feel glad to be an agent of change in my own community and to say that I'm helping people switch to green cleaning, which is overall better for their health, and for the environment as well.

AA (speaking to Jessica): Has your involvement with the study changed your own dreams or hopes for the future?

JC: Yeah, I'm about to graduate high school, and I will want to be pursuing computer science and also plan to double major in public health. And my goal is to create systems for people like housekeepers who don't know the effects of inhaling chemicals, or who don't have the technological means to access information and learn more about it. So, I'd want to create apps and websites that would be user friendly to help spread the information. I want to help make this

access easier for the people and bring it back to my community because this is really what inspires me the most to continue learning and to bring this access back.

AA (speaking to James): How does that make you feel hearing her say that James?

JN: I think that makes the job worth it. It's always so much work, just writing grants and doing the science and the research, and even more making sure that we're doing it in a responsive way and actively incorporating youth perspectives. And to hear a person who has this really clear vision for a very accessible and scalable solution that directly addresses potential health disparities, like Jessica talked about, you know, language challenges, language barriers, and specifically people in her community, the potential for positive impact in their communities is huge. The more people we have doing this kind of work coming from different backgrounds, different cultures, the richer the work, the more robust the findings are, and therefore the more advanced and sophisticated our solutions can be, the more effective.

AA: Since it was created, more than 100 young people have been a part of the CHAMACOS Youth Council and the collaborative research from UC Berkeley's Center for Environmental Research in Children's Health. James told me alums of the Youth Council have gone on to major in environmental science and public health in college. Some have been accepted to masters of public health programs, which James says, only makes him feel a little bit old.

Big thank you to Jessica Cabrera and James Nolan – and congratulations to Jessica on your upcoming high school graduation. Best of luck with your future research!

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

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