

Towards a Sustainable Earth

A World of Difference: Environmental Justice, Sustainability, and Greening the UC System

Intro

Hey there, welcome back to Carry The One Radio. So, today we'll be talking about something near and dear to our hearts, especially considering the Earth Day's coming up and perhaps moreso, there have been several recent global disruptions that have thrust climate awareness into the public conscience. So, yes, we're talking about sustainability. Our guest today is Dr. Sheri Weiser. Dr. Weiser is a remarkable physician scientist, and she has really been leading the charge to a greener UC system. Dr. Weiser has published over 165 manuscripts on food insecurity, um, as well as related topics which means mental health, HIV stigma, women's empowerment...you get the idea). Additionally, Dr. Weiser has been a principal investigator on over 25 research grants in the area. So, to learn more about how food insecurity connects to climate justice and how this research inspired Dr. Weiser's efforts at UCSF and beyond, stay tuned!!

CTOR Tag

Dr. Weiser's history of engagement: food insecurity as an environmental equity awakening

Rachel: Hey, everyone, I'm Rachel and today I'm going to be talking to Dr. Weiser who's a Professor of Medicine and internist at UCSF's Division of HIV, Infectious Diseases and Global Medicine at Zuckerberg San Francisco General Hospital. Dr. Weiser is also an amazing researcher who's been leading several NIH-funded longitudinal studies to understand impacts of food insecurity on health outcomes among HIV-infected women. She's been leading several exciting efforts towards integrating sustainability into the UC curriculum and UC climate action, too. So, I'm looking forward to learning more about this research and more about her efforts today.

I'm really excited to speak with you today, Dr. Weiser. So, to start us off, could you just give us a brief overview of your research?

Dr. Weiser: Thank you, Rachel. So, my research has been broadly focused on the impact of social and structural barriers to HIV and chronic disease prevention, treatment, and care in both the US and in sub saharan Africa. And, I've had a particular focus on HIV as a driver of poor health. I've also been studying sustainable food security and livelihood interventions as a way to improve health. And, finally, more recently, our team has been exploring how extreme weather events like drought and

flooding are affecting food insecurity, mental health, and downstream health impacts for HIV and other conditions.

Rachel: So, Dr. Weiser, before we discuss your current sustainability efforts and all the work you've done in greening the UC system, I really feel it would be a great idea if we talked about what inspired your active climate engagement in the first place. So, basically, there, you've been thinking about health disparity and researching food insecurity...it's been about 15 years now! So, I was just wondering how you got involved in this research and how it's translated into sustainability work on climate change?

Dr. Weiser: So, I got into food insecurity work when I was trying to understand what was driving the HIV epidemics in Botswana and Swaziland. I was doing a study for Physicians for Human Rights. We were going in, and we were actually looking at it through a gender lens, and gender inequality was a very important central component of what was going on in these countries to perpetuate the HIV epidemic.

Rachel: Yeah, that's an interesting angle to tackle the HIV epidemic. So, on that note, what were some of your main findings? And, how did you make the connection to food insecurity?

Dr. Weiser: My mentor, at the time, was David Bangsberg, and he was an HIV adherence researcher and antiretroviral adherence researcher. When I was doing work in Sub-Saharan Africa, it became very clear that the biggest barrier to adherence, for many of the participants I interviewed, was food insecurity, because they couldn't take their medications on an empty stomach. They would feel sick. They were so busy trying to get food, that they missed their medication doses. They couldn't get to the clinic to pick up their medications when they were trying to get food.

But then in speaking to people there, it just kept on coming up, over and over again, that we cannot address HIV without addressing food insecurity. Food insecurity was driving women to engage in unprotected sex, to sex exchange, to being in these intergenerational sexual relationships, really as a way to procure food for themselves and their families. People would be very clear that, "I get it. I understand I am going to get HIV, but either I'm going to starve today, and not be able to feed my family today, or I will get HIV and at least be able to feed my family, and die later." It became very clear to me that food insecurity was a huge driver of the HIV epidemic. That's how I became interested in food insecurity, being an HIV researcher.

Rachel: Wow, those are some really unfortunate circumstances. And, I can see how food insecurity's really a driving factor there. Did you see that sort of thing happening in other populations, too?

Dr. Weiser: So, that came up, and we thought, initially, "Oh, this is just a problem in Sub-Saharan Africa." We decided to look at it domestically in our cohort in San Francisco and we found the exact same thing.

So, we were working in a cohort of homeless and marginally housed patients, and food insecurity was a huge driver of nonadherence here as well. Then, over the years, we've replicated the findings of food insecurity driving both HIV acquisition risk, as well as worst treatment outcomes in many settings. We've done work in Botswana and Swaziland, in Uganda, in Kenya, all over the US, and we have found similar things.

Thinking about similar work elsewhere, one can't really address food insecurity without thinking about the role of climate change and health. So, that is how I got into it.

Rachel: Wow, yeah, yeah wow. Just...just looking at that from a gendered perspective. That's yeah that's really striking. So, could you tell me more about what part all of this, or maybe what parts have been the most meaningful for you?

Dr. Weiser: Absolutely. I definitely am someone who is passionate about a lot of things, so I think that I could talk about certain buckets. I think one of those buckets, really has been the gendered aspects. So thinking through, I've definitely been very engaged in research related to women's empowerment, really, since the very beginning of my research career. I've done work with women at risk for HIV in Sub-Saharan Africa. For many, many years, one of my research grants was in the Women's Interagency HIV study, which is now the combined cohort study across the US. Also, I've done a lot of qualitative work, exploring pathways and mechanisms for how food insecurity affects health, and affects women's empowerment as well. So, I feel like that has been a very meaningful and exciting aspect of my work.

Rachel: Definitely! So—what are some projects that you're currently exploring?

Dr. Weiser: I am, right now, super excited, and motivated, and passionate about this intersection between extreme weather events, food security, and health, and trying to come up with what we're calling climate adaptive interventions as a way to mitigate negative health impacts. So, one of the studies that we worked on in Kenya was... Actually, it was a food security intervention, but really it was a climate adaptive livelihood intervention that was helping people address the root causes of poor health and food insecurity, which, in this case, was increasing the frequency of drought in the setting of climate change.

So, what that intervention was, was, actually, agricultural and finance training, as well as an agricultural intervention, which, basically, we gave people training on sustainable farming practices, as well as financial management. People got a loan to purchase a

human-powered water pump that would enable them to irrigate their crops year round during these progressively longer dry seasons. In so doing, in our pilot work, we found very substantial improvements in food security, in HIV health indicators, which was pretty exciting because there really have been very few interventions that have linked livelihoods and agricultural interventions to hard clinical indicators. Most of them will end at food security, but we're going beyond food insecurity and nutrition to these HIV clinical indicators.

Rachel: So, yeah, really strategic combining the sustainable farming interventions with financial literacy training, in my opinion, at least. I'm curious though, how did this approach fare from a gendered perspective?

Dr. Weiser: We also found improvement in women's empowerment. Our qualitative work, in that, highlighted all of the different pathways through which the intervention was improving health, from improving mental health to improving women's empowerment, to improving health behaviors, and of course, food security and nutrition.

And, I will say that a separate line of inquiry that we've been doing, both qualitatively and quantitatively, is trying to understand, "Okay, if we're going to devise climate adaptive interventions to improve HIV health, we actually really need to understand how climate change is affecting HIV health. So we have some very interesting qualitative study led by one of my mentees to really outline all of the mechanisms and pathways for how extreme weather events are negatively impacting health outcomes for HIV-infected farmers living in the Nyanza region of Kenya.

Rachel: Really wonderful! You'd mentioned earlier that you observed similar trends in food insecurity on the domestic front. Can you tell me more about our work with that? With things like Project Open Hand, basically the idea of providing nutritious meals to people in San Francisco and Oakland who might not have so many resources, or basically the idea of helping out our sick and vulnerable neighbors? Could you speak a little more to that?

Dr. Weiser: On the domestic front, we've been doing a lot of work using this Food As Medicine movement, which has been very exciting, really led at a grassroots level by community-based organizations that have really been driving the research agenda and the policy agenda. We've been following their lead, and really advising them. With Project Open Hand in particular, myself and my colleague, Kartika Palar, have been doing a lot of interventions on medically-tailored meals for people with diabetes, for people with HIV, for people with heart failure. That was led also with the Department of Public Health.

The idea with the medically-tailored meals work is the idea that there has not been a lot of integration between the provision of healthful food and the medical community, and the idea that providing food is actually a medical intervention because we are preventing acquisition of things like diabetes and many other diet-sensitive conditions. And we're also improving outcomes among those that are affected. And, this leads to both really health improvements and health cost saving by preventing a lot of expensive hospitalizations and ED visits. So, I've also been very excited by that work.

Rachel: It really is amazing because I feel that food is not necessarily viewed as a preventative tool, and leveraged to the extent that it really could be. So just thinking about meat and dairy being subsidized and not so much vegetables, really has a big impact on populations with a limited food budget. And then, there's palatability and food availability and..Just I'm thinking about a person living in a food desert traveling miles just for fresh vegetables, and then spending half a day's wages, it's like vegetables cost so much relative to calorically-dense foods...Yeah, it's...it's really an issue.

Dr. Weiser: In terms of your point around the food deserts, I think that is also very critical to tackle, from a policy perspective. I think there are many ways that people are doing this. There's some interventions. In this compilation of interventions for Food As Medicine, medically-tailored meals are just one of them. There's also food pharmacies, there's vouchers for fruit and vegetable prescriptions, and many other similar kinds of things, and grassroot interventions that are happening really everywhere.

One of the really fun grassroot interventions that my colleague, Kartika Palar, and I had the privilege of working on was working with this urban garden organization in San Jose called Valley Verde. They're working with, largely, Latinx population and many immigrants as well. They realized that much of this population did not have access to fresh fruits and vegetables, for the reasons that you state.

But rather than doing community gardening, their model is actually training households, and very low-income households, on how to grow their own vegetables, and providing this urban gardening training along with nutrition education to address that exact thing that you raised before, which is, not only can people not afford healthy vegetables, but then they don't really know how to use them. And, there's not a lot of interest necessarily in using them. So, what they did, which was so innovative, is they provide this culturally-appropriate cooking. People prepare dishes that are culturally-appropriate. Of course, there are so many unique cultures within the Latinx community that have very different food preferences. So, people would share recipes.

I'm so excited about all the momentum around this sort of race and equity work and movement in this country. Because part of what it has been highlighting is that some of the interventions that are foisted upon communities without consultation from the

community members end up being more harmful than good. And so, clearly, having a very strong community presence in all of the interventions that we do and roll out, and what's wanted by the community is really, really critical.

This is something that I'll go back to, what I'm passionate about, which is, thinking about interventions that are community-grounded when we're addressing food security, that address food security in a way that is helpful for the population. So, giving people food they will actually eat. If you're preparing meals, preparing meals that are medically-appropriate and also culturally-appropriate for them.

Then, I will add the third dimension, which is sustainability. The Urban Garden Movement being such an excellent example of doing something that is helpful for communities and helpful for our planet. Some colleagues here at UCSF, Tammy Nicastro and Rupa Marya, are trying to take this urban gardening idea to create these rooftop gardens in San Francisco, working with low-income housing as a way to give people livelihoods and decrease pollution, decrease our carbon footprint, improve environmental sustainability, all of these things.

I'm really excited to work with urban planners and people in this climate and health world. We're also thinking even broader scale when we're thinking about interventions to adapt to the negative health impacts of climate change.

Rachel: So many dimensions, and a lot of this really ends up just disproportionately impacting particular populations.

Dr. Weiser: Absolutely. I think all of my work with food insecurity disproportionately impacts Black, Latinx, Native American populations, domestically, internationally, I guess every country has its own story on how this is playing out. Disproportionately impacts women, immigrant populations and many other vulnerable populations. Then, the same is absolutely playing out with climate change. So, climate change and severe weather events disproportionately affect domestically, Black, Latinx, Native American, and other minority populations in things like deaths from heat waves to exposure to air pollution, and development of chronic pulmonary conditions related to air pollution, to many other things. So, in both our center and our research work, we are trying to make environmental justice and equity a key focus.

Rachel: Oh my gosh, oh my gosh! I was just about to say climate justice and equity.

Dr. Weiser: Yes. So, I think that we can't do climate and health work without centering it in equity, just like with COVID, we saw that you can't address the issues coming up with a COVID pandemic without addressing the very real fact that it is disproportionately

impacting Black and Latinx communities all over the US, and the same is true for climate and health work, and how we think about solutions.

Dr. Weiser's future plans, efforts towards a green UC system

Rachel: So far, we've discussed your path to combating climate change through research engagements. Now, though, I'd really like to talk more about some exciting moves to action that are going on in California. Specifically, I'm thinking about UCSF, the entire UC system, too. So, right now, with another faculty member, so you're planning on launching this--this Climate center. Could you tell me a little more about that?

Dr. Weiser: So, our idea is to launch a center focusing on the intersection between climate change and health. Since UCSF's mission is to advance health worldwide, we feel very strongly that we should be tackling, head on, the most pressing health crisis of the 21st century, and our biggest existential threat as well. And, really, our mission is, we're envisioning a future with climate resilient communities that prioritize human and planetary health, and also support a thriving planet.

Rachel: And this connects to the Climate Center...?

Dr. Weiser: So, we think that achieving this requires a smart design and effective deployment of transdisciplinary, transformative climate health solutions. So, towards that end, we're launching the center to promote evidence-based solutions and build momentum at this intersection of climate change and health.

Also, rather than just being focused at UCSF. The center will be based at UCSF. We hope to have trans-UC collaboration. So, we have collaborators across the UC system that we've been working with, both from my work in the Global Climate Leadership Council, and Arianne Teherani and I, who are co-directing the center, have been working, for many years, on the educational work that you have reached out to me about. Through our cross-UC educational work, we also do hope to engage our collaborators across the UC system on this work.

We're going to focus the center on four pillars: research, education, clinical care slash health system sustainability and policy.

Rachel: This centre is so necessary, and, yes, the four pillars sound like an excellent foundation. So, how do you plan to implement UCSF's four pillars? Might we start with research? What are you planning on that front?

Dr. Weiser: So, in research, we are really hoping to establish what we're considering a design-based and solution-focused body of evidence that are going to both fill in the critical gaps concerning climate and health pathways and solutions. We also want to break down research silos, because so much of the work in climate and health is happening in distinct disciplines rather than in collaboration. We want to help to make science actionable into policy and mitigation strategies.

So, towards that end, what we're going to try to do is create a transdisciplinary research hub that is going to bring our researchers from all of the four schools at UCSF together. Also, bringing in collaborators from across the UC system. We hope to do things, like have a seed grant program where we're going to be promoting new research that is both understanding the health impacts of climate change, but I think even more pressingly, really helping to mitigate or adapt to negative health impacts of climate change.

We have a bunch of projects proposed in this front. Ultimately, we really do hope to start a postdoctoral fellowship to train the next generation of researchers, focusing on this intersection between climate change and health. We have such incredible resources at UCSF in terms of the knowledge and expertise in moving and shaping large, global health, and research, and policy efforts. To take all of that expertise and then put it into this next big, immense global health problem that is already and will continue to be our foremost health challenge, I think, is extremely important

We're also going to do things, like hosting a journal club and a monthly works in progress session, to encourage early career faculty to present. We'll set up a peer review system for climate and health-related grants and manuscripts. Then, we have this really unique fossil fuel industry documents collection, which is part of the UCSF-

Rachel: Yeah! I remember how UC divested. That was so awesome. That was actually—let me think! let me think!—now, that was actually led by, pardon me if I'm wrong, the med students. That was epic

Dr. Weiser: Yes. So, that is part of that overall vision of really elucidating how the fossil fuel industry is perpetuating and creating the problem. This set of documents is actually hosted at the UCSF industry documents library, and it really helps to show what the industry knew about climate change, and how they manipulated science to avoid regulation. So I think it is a very unique source.

Rachel: Oh, no, definitely! That's actually something that I'm interested in myself, and also a great segway into our next topic, or rather next pillar, so could you talk a little bit more about education?

Dr. Weiser: In education, we're hoping to really enhance training for health professionals, as well as the public, on climate and health links. So, we hope to develop cutting edge pedagogies for sustainability and climate and health teaching. We also hope to offer continuing education and mentorship opportunities for a variety of health professionals, and provide also public education that will help promote community response to climate change.

Rachel: Exciting! Then, there's the work you've done with the curriculum, too.

Dr. Weiser: As you know, we had these workshops, at UCSF, where we transformed over 20 courses. I think we transformed 23 courses to infuse themes of climate change and sustainability into education classes across all four schools to reach as many learners as we can. Then, building off of that, UCOP, the UC Office of The President, invited us to submit an application as part of the Carbon Neutrality Initiative funding to replicate what we had done at UCSF across the UC system. Basically, we've done that, and now transformed over 100 faculty across the UC system to infuse themes of climate change and sustainability throughout the health professional curriculum.

We're hoping to expand on these efforts, and really have our faculty serve as ambassadors to ensure that essential content are incorporated in existing courses throughout UCSF. So, we hope to do that and to be able to share the material that we develop with the other health professional schools at UCSF, and then eventually, across the UC system.

Rachel: Yeah, that's incredible. Climate really is increasingly salient to the public, especially with with several of the disruptions going on in the world right now, and I agree with you, it's really important to get people to start to connect the dots, to want to be moved to action...Okay, fine, um *laughs* I'm kind of rambling a bit. Can you expand on the clinical care slash health system sustainability pillar?

Dr. Weiser: We have this clinical care and health system sustainability pillar, where we hope to mobilize the healthcare sector to play a key role in being very responsive to both short-term and long-term threats posed by climate change. Our Office of Sustainability at UCSF, led by Gail Lee, has been doing amazing work to reduce the institutional and patient care carbon footprint, so some of the things that we hope to do is promoting a culture of climate readiness, really in all areas of our clinical enterprise, trying to implement what is needed to make UCSF clinical programs carbon neutral, and also to help prepare, as I mentioned, for both the short-term and long-term climate threats.

We hope to develop, for instance, a web-based toolbox of high quality patient care and clinical care materials. In terms of our climate event response team, We had a meeting

with the San Francisco Department of Public Health right before COVID hit. Of course, our continued efforts got derailed, but we hope to now resume creating this climate events response team along with San Francisco DPH, to prepare for what are the most likely climate-related disasters. We know, of course, wildfires and heat waves being very central in California, and of course, health effects that may relate to drought as well.

Rachel: Exciting, and I think we're at the last pillar, policy

Dr. Weiser: In terms of policy, we're still developing our activities there, but we're hoping to leverage research and education to really translate evidence into environmentally-sound policies and programs. And also, we hope to do a lot of work, to advocate for climate action, both locally, nationally, and internationally.

And this will include building up a policy relevant evidence-based, and establishing and mobilizing partnerships, both domestically and internationally, and then figuring out how to best disseminate our findings to mobilize action as effectively as we can. I will say that a really important aspect of our center will be on environmental justice.

How UCSF Students Can Get Involved

Rachel: All this work toward a greener UC system really is exciting. And it's great to see how it draws from all the four pillars you discussed with us, involves faculty, it's aiming not only to establish partnerships domestically, but also nationally, internationally. So, to take a step back to what we can achieve domestically, what can UCSF students do to get involved?

Dr. Weiser: Yes, there is a medical student group that is wonderful. It's an interdisciplinary student organization made up of medical, pharmacy, nursing, and dentistry students, as well as graduate students. And, they're trying to create awareness on the important links between climate change and health.

The students are very involved, and the students were the ones who moved forward those efforts to ban red meat at UCSF. They're doing such exciting work. They've done these medical school, health professional school report cards, evaluating medical schools across the UCSF for how they're doing in terms of their carbon footprint and climate change. Actually, there was this amazing climate and health symposium, which was co-led by Stanford and UCSF, and the medical students helped put that on.

Rachel: Oh, my gosh, Yeah, I actually had signed up and did that.

Dr. Weiser: Wonderful. Actually, we have a climate and health colloquium, which we're going to launch as a lecture series in the spring, that is going to be focused on climate and health. We're going to focus on wildfires, on environmental justice and equity. We're

also going to focus on food security and migration, and hope to also have a session on COVID and climate change. So, stay tuned for that. That should be exciting.

Rachel: Definitely sounds exciting! I've also heard about an Earth Centre here at UCSF. So, can you tell us more about that?

Dr. Weiser: The EaRTH Center is really focusing on environmental toxins, but all aspects of negative health impacts of the environment. That is led by Tracey Woodruff, and they have active student groups in that arena as well.

So, along with Laura Schmidt, I'm the UCSF faculty director of the Global Food Initiative, and we have a Global Food Initiative fellow. This year, we're going to have a few Global Food Initiative fellows that are students working on the sustainability angle from the perspective of food. Then, we have some Carbon Neutrality Initiative fellows that are students, that are going to be helping us launch the center, helping us create community partnerships, because one of the things we want to do with the center is make sure that we are launching the center with support from relevant affected communities. We want to develop community partnerships really to help us shape the direction of the center, and the research, and education, and policy work.

Rachel: It's so wonderful to hear that there's a lot of engagement from UCSF students.

Dr. Weiser: So, I would say, the other thing that is a huge initiative going on at UCSF, that is an extremely important contribution where students can get involved as well, is the Climate Change and Mental Health Task Force, over in the Department of Psychiatry, and there's a lot of room for students to get involved. They're also working on following our pillars that I talked about in terms of research, clinical care, education, and policy, but focusing on mental health impacts of climate change. So, there's a lot of ways students can get involved.

Rachel: The most pressing issue of our time is our climate, and it's really important there are opportunities to engage, that people really start engaging, and start realizing that this impacts every single human being living on the planet. I've learned a lot from our conversation, and thanks again for your time, Dr. Weiser.

Dr. Weiser: Yes, absolutely.

RECAP

Rachel: So, to recap. Today, we heard about Dr. Weiser's unique path to sustainability activism, a path centered on race, sex, and health equity, all really powerful drivers of health outcomes. We also learned how in addition to being a core independent driver of health, food insecurity is implicated in climate change. This is really a striking and powerful connection, and one I am personally not going to be able to forget. Additionally, there were several exciting transdisciplinary initiatives that Dr. Weiser shared with us today, as well as some exciting moves to action at UCSF, and several opportunities for student involvement. Finally, we covered the goals for the UCSF EARTH center, which is launching this April with a specific focus on climate change and health: given current global circumstances, it couldn't be needed more urgently.

Credits

This episode was produced by Rachel Rock and Stella Belonwu, with help from the rest of the team at Carry the One Radio. I want to give a big thank you to Dr. Sheri Weiser for taking the time to speak with us, and of course to you for listening.

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