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Environmental Justice from the Ground(water) Up Coping with Contamination in Tallevast, Florida

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This material is based on work supported by the U.S. National Science Foundation, Grant No. 1950458.

- Goals & Research Questions -

The goal of this research is to understand the history of groundwater contamination in Tallevast, Florida and how community residents have responded, with an emphasis on coping strategies and environmental justice organizing.

- RQ1 – What social/political/economic strategies do communities experiencing drinking water contamination develop to mitigate adverse impacts?
- RQ2 – What role does environmental justice organizing play for communities experiencing drinking water contamination in terms of gaining human and financial resources to mitigate adverse impacts?

- Research Context -

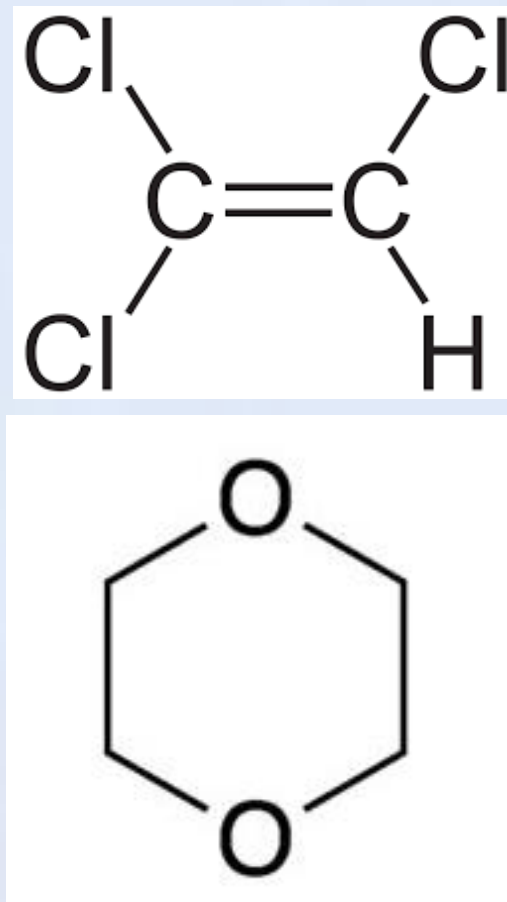
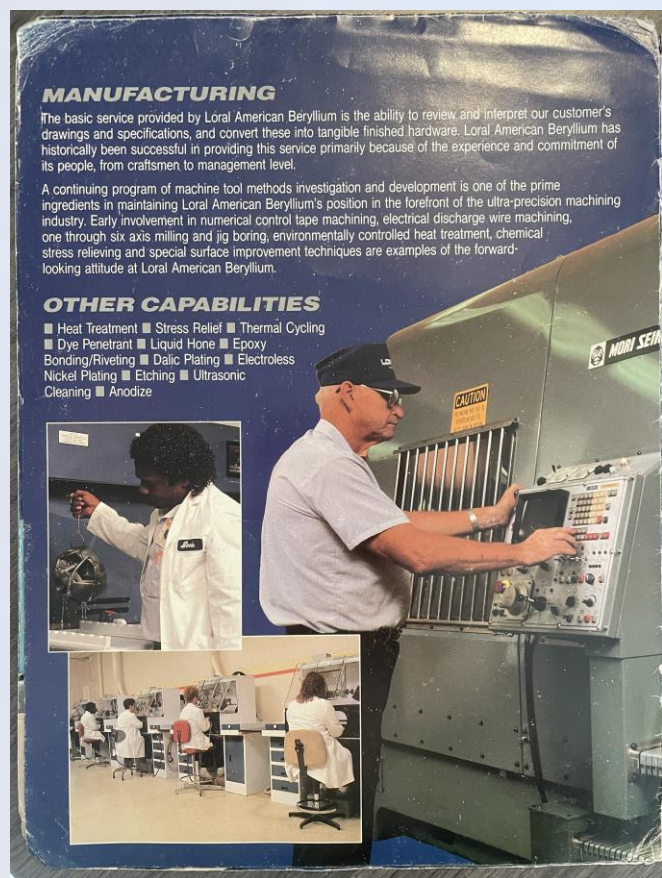
Tallevast is a disadvantaged unincorporated community covering approximately 80 acres in southern coastal Manatee County, Florida. The community consists of about 75 households (225 people), which are 85% Black or African American. Many of these households include descendants of the town's original five founding families — freed slaves who settled the area as turpentiners after the Civil War. As a racially underbounded community excluded from the benefits of municipal citizenship, Tallevast has lacked critical resources, services, infrastructures, and political representation. Piped water was only made fully available in 2004 for developed properties and more than one-third of households still do not have access to centralized sewer.

Our community collaborator is FOCUS (Family Oriented Community United Strong, Inc.), a 501(c)(3) nonprofit organization dedicated to community revitalization. FOCUS has been the primary agent responsible for working with the state to protect the health and welfare of community residents and the environment.

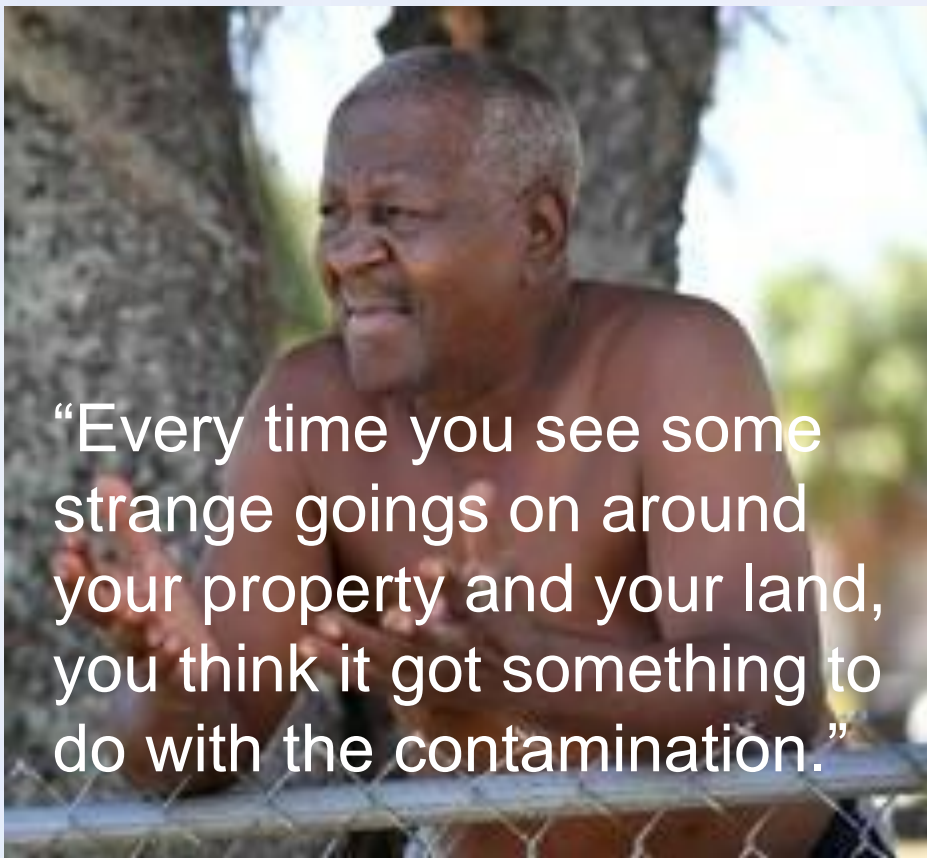


- Groundwater Contamination -

In 1996, the Lockheed Martin Corporation, the world's largest defense contractor, acquired the former American Beryllium Company (ABC) located on five acres of land in the heart of the community. From the late 1950s until 1996, ABC manufactured beryllium machine parts, including components for nuclear warheads. Over time, poor management of hazardous wastes and discharges from ABC's wastewater treatment system contaminated the local groundwater with chlorinated solvents.



Lockheed Martin's consultants discovered the problem in 2000, finding trichloroethylene (TCE), 1,4-dioxane (dioxane), and numerous other pollutants migrating offsite in a growing plume underneath the community. Many of these substances are persistent and extremely mobile and have been found at levels well beyond what is considered safe for human contact, i.e., TCE at 35,000 ppb compared to the Florida GCTL of 3.0 ppb and dioxane at 2,710 ppb compared to the GCTL of 3.2 ppb. These substances damage the nervous system, kidneys, and liver as well as the immune system and developing fetuses, and are known carcinogens.



"When you hear about so many people in Tallevast having cancer and all this, and then some people who have moved away were dying with cancer. And then you think about it, oh, did the contamination has something to do with all this?"

- Sampling & Data Collection -

We conducted 40 hours of participant observation and 12 oral history interviews. We used stratified purposive sampling to obtain multiple perspectives on people's interaction with drinking water and coping efforts. We also employed referral sampling to reach hidden populations.

We conducted participant observation to identify the context in which the social and behavioral perceptions about water contamination exist among Tallevast residents. Participant observation facilitated an understanding of the context with which people interact with water and social groups in the community. It involved multiple visits and extended stays at the study site, participation in daily activities (e.g., institutional and community meetings or events), and personal interactions with informants to build rapport and trust.



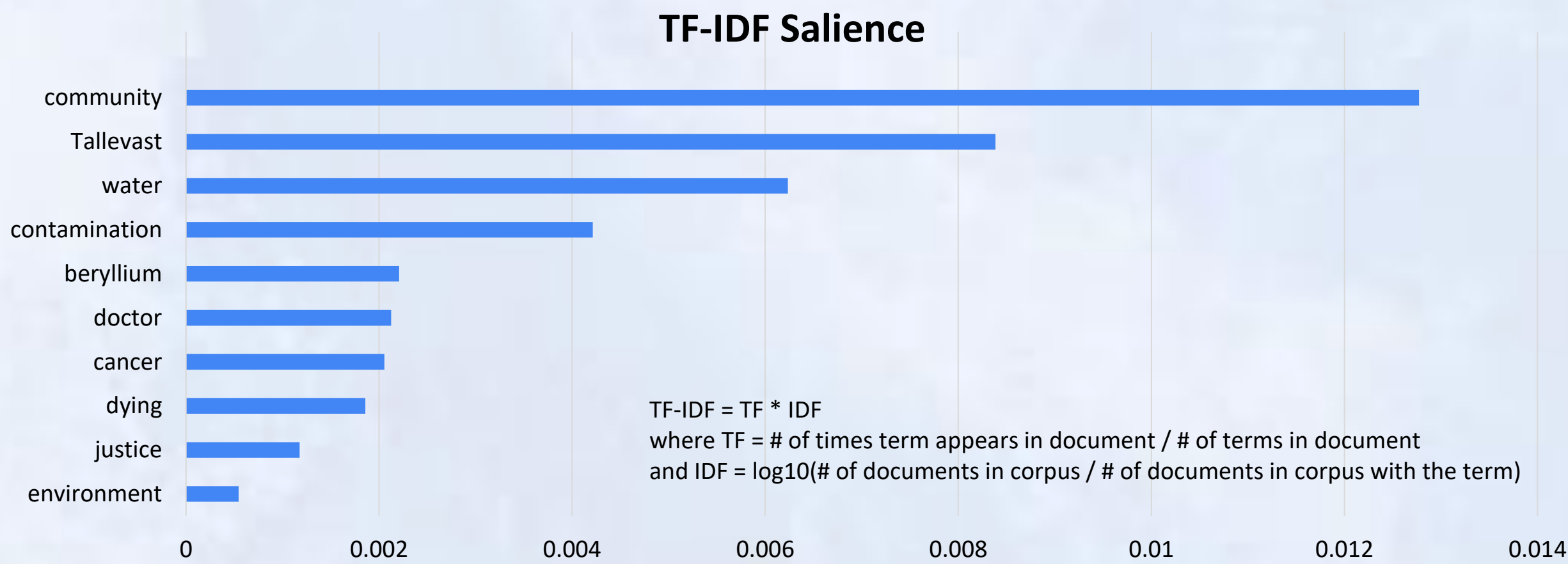
Using a semi-structured interview approach, the interviews provide insight into how residents cope with living in a contaminated environment. These key informant interviews included oral history questions to provide historical context to people's interactions, perceptions, and experiences.

- Qualitative Data Analysis -

Field notes were typed and audio recordings from the interviews were transcribed with artificial intelligence software Otter.ai. Using a codebook designed to capture themes relevant to the research questions, the data were inductively and deductively coded to identify words, phrases, and sentences representing the thoughts and behaviors of the participants. To assess the areas and levels of consensus among participants with regards to water experiences, the coded themes were compared among interviews to produce a thematic framework matrix. We also computed term frequency-inverse document frequency (TF-IDF) statistics to identify salient concepts.

- Results: Thematic Framework Matrix -

	Impact	Coping Strategy	Experience
Social	"So yeah, I don't like the idea of the different people that we have moving into our community right now. And it's nothing against them. It's just that it's a family-oriented community, and I would like it to see it stay that way." —Beverly	"The community center has been taken away from us, taken away, not just from us, but all generations. And so that was a safe haven for all kids in Tallevast to go, and play, and exercise. And now kids don't have a place to just walk out and play basketball, they have to play almost on the streets." —Roger	"The people ain't the same people no more. Like I said it was like one big family. Now I think everybody for themselves. I guess that's life." —Willie
Political	"We've had a history with Manatee County not being very helpful. I'm just gonna say it's just, it goes back years... So we had a fight on our hands, they just stuck Amazon right in the front door. So my view out of my back porch now is their loading dock." —Eileen	"Yeah, FOCUS, we'd probably needed it before contamination came up because they have helped us out with a lot of things. To help us bring a lot of things into the community that we haven't had before." —Vincent	"FOCUS usually tries to have somebody come out with a meter, you know, air quality, to see if you're contaminated." —Eileen
Economic	"When I had my house built, I didn't even pay like \$50,000 for it. And I say now if I leave here, even if I sell my house, I'm still gonna have to pay half if I get another house they're gonna have to pay homeowners insurance, property tax plus mortgage. And I said I cannot afford that, you know. So the people tell me stay and live with it." —Carlene	"I think back when we was going through this class action lawsuit, see, I think we should see what happened with that deal, I'm talking about the one, but people wanted money so bad that they want to settle. And they went for it, because the thing I heard is if you don't settle for this, it could go on another distant many years." —Norris	"Well I'm a realist, what the hell is the \$100,000 gonna do for me if I can't go out? You know, go to Bahamas." —Al
Physical	"When you hear about so many people in Tallevast having cancer and all this, and then some people who have moved away were dying with cancer. And then you think about it, oh, did the contamination has something to do with all this." —Carlene	"Then other people we were hearing that had cancer, you know, and that's when Lockheed and some of these other big wheels come through, question us and getting on test medicine and all this stuff." —Al	"After we got the surgery the doctor he gave us maybe medicine for the first two weeks and then we had to go back. We went backwards and forth to him. I don't know whether we was on schedule for a full month or what. He wanted to make sure he got it all, you know. He was a good doctor, I can give him credit for that because I'm still alive and my brother's still alive." —Beatrice
Emotional	"They had no clue. It was a rare cancer. And the seven of us, actually four of us were working over there said, man, what did we do to mom? You know, we felt kind of guilty." —Al	"You know, I go to church every Sunday. And I believe in that higher power. And I said, well, I'm good to go ... It's in God's hands. I don't even worry about it anymore. Yeah, you know, I just try to be the best of who I am, you know, and kind of raise my damn kids, my grandkids, the best way I can. And I just keep moving forward. You know, that's my mentality." —Al	"I mean, how do you justify if people have gone? Moving forward I guess do you just try and make sure nothing else gets dumped or, you know, pawned off or whatever. How do you compensate for loss? It's kind of hard to. We're a strong community so you know, we'll keep kicking." —Eileen
Environmental	"Well, things started changing. Like I said, all the fruit trees and stuff, it just wants to die. Tangerine tree, orange tree, grapefruit tree, guava trees, banana trees, papaya—everything just went to hell in a handbasket, it started going away." —Willie	"Now, if you want an orange tree, you got to basically put it in a pot. We've got a few trees and things, but there's nothing nowhere here." —Beverly	"And some people were saying like, they have, I guess, an indent in the land, like you can see some of the land settling, you know, around your house. And I have noticed a little bit around my house, too. And I was wondering, cause they pumping, I guess water and stuff. So we was asking them, will that have any damage on our property?" —Carlene



- Key Findings -

- Sense of community has been lost due to the contamination. Residents would like to see the community center return as a place for people to gather.
- Residents do not trust the county due to perceived racism and a history of ignoring community needs. FOCUS was created to support the community.
- Property values have declined, and residents cannot afford to move. Several residents were involved in a class action lawsuit and received payments.
- Disproportionate number (~70%) of residents have developed various cancers. Many residents are currently undergoing medical treatment for cancers and other illnesses.
- Stress of the contamination has taken a toll on the emotional health of residents. Residents have found comfort in participating in churches.
- Fruit trees used to be plentiful, but they have largely disappeared. Residents have also noticed indentations appearing in their yards from the pump and treat approach.