ESF Campus Conversations THE PODCAST

Season 8, Episode 1: Working Across Water: Interdisciplinary Science
Host: ESF President Joanie Mahoney
Guest: Jamie Shinn + Nathan Young

[MUSIC]

Jamie
I'm social scientists, I'm doing work in communities, and I can't go in and ask questions about climate change and expect people to be receptive to me. And so we instead talk about the things Nathan is saying extreme weather variability and flooding.

Nathan
We look at the sites in the South and we say, this is what the North is going to look like in 20, 30, 40, 50 years.

Jamie
So, you have FEMA, you have Red Cross, you have the National Guard. But you also in these spaces have nonprofit groups. You have faith-based organizations that have disaster branches.

Nathan
To be educators. We're curious about pulling apart different systems and understanding how they work. And then as you start moving to the more extreme ends of that, the logical conclusion, I think, is, is actually being some sort of elected representative.

Joanie
Welcome to season eight of Campus Conversations the Podcast. I am Jonie Mahoney, and I have the honor of serving as SUNY ESF president this season. We're working to further explore the interdisciplinary connections of our ESF community. The work our faculty, staff, and students do matters more than ever, and I'm honored to welcome Doctor Jamie Shinn and Doctor Nathan Young. Thank you for joining us.

Jamie is a human geographer and teaches in the Department of Environmental Studies. Nathan is a hydrologist and environmental scientist who teaches in the Department of Sustainable Resources Management. They are both part of what we call the water cluster, which is a group of remarkable educators and researchers across an array of departments who have some research and focus on water and how it works, how it's consumed, and what happens to it across our environments.

They aren't the only ones in this cluster, so this is just the start of sharing their role in those clusters. And I'll let Jamie and Nathan speak to that. I don't think there's a topic in existence more important than water. So I would like to welcome Jamie and Nathan. Thank you very much for taking time out of your busy schedules to share with us what you're doing.

And, Jamie, I'll start with you. I would like you to maybe give the listeners a little bit of a bio. And where did you come from, and how were we able to get you to join us here at ESF?

Jamie
Well, thank you so much, President Mahoney, for the invitation to chat. So, as you said, I'm a human geographer and so at the broadest level, what I'm interested in is how humans interact with their environment. What are the connections and relationships that impact how people live in the environment, use the environment, and increasingly, how they live in a changing environment and what that means for them?

And most of my work is related to water in some ways. So, knowing that water has endless power to shape the landscapes in which we live, the livelihoods that sustain us, I'm always interested in how people live with water, and in my research it's often too much water. So, when a river floods, when a coastline floods, what happens in those places to those communities? How do they respond to that flooding? How do they recover from that flooding? And how do they continue to live in these landscapes that have always been dynamic and are increasingly dynamic and variable in the ways that the water is flowing through them?

And so all that climate change adaptation. But I also study disaster response as part of that, mostly related to flooding.

Joanie
And I do want to get into some of the specifics of the research that you're working on now. But where was home for you? How did you grow up and become interested in water research?

Jamie
So I grew up in northeastern Pennsylvania, just south of the New York border, about 40 minutes south of Binghamton. So coming to Syracuse was a bit of a homecoming for me. I grew up in a really rural community, and I think I've always been interested in rural places as a result of that.

I did my PhD work in geography at Penn State, and through research there, I became increasingly interested in the role of water in rural communities. So how people access water, use water, and that kind of thing. So I think the water interest developed for me over time through my graduate work. But the kind of interest in rural communities and rural landscapes was always deeply embedded as a result of where I grew up.

Joanie
I'm always so interested in talking to ESF faculty, because I don't feel like that was something anybody came to my fifth grade career day to talk about.

Jamie
Yeah.

Joanie
And the fact that you all got these wonderful careers studying such interesting work and, and, and working with students that we have here and the other faculty. And, you know, I joke and I'm sure people were trying to tell me about the broad options in the field of science. But, you know, we had, we had a firefighter and a police officer and a doctor and a lawyer, and, you know, if somebody ever came in and really sparked that, thought about where is the water going? How is it affecting us? Who has water? You know, the water is certainly not following these artificial boundaries that we've set up politically. Right? So whether you're on this side of that line or the outside of that line, the water does not care. So, I'm always interested to hear how faculty came to us here at ESF.

So how about you, Nathan? Where did you grow up?

Nathan
So, I grew up actually outside of San Francisco, lived in California for 18 years of my life. And then I did all of my schooling, my masters, my bachelor's and my PhD in different Midwestern states. I did my undergrad in Indiana, I did my masters in Ohio, and I did my PhD in Iowa at Iowa State University. And growing up, water was always something that we were constantly thinking about because I as I was growing up in, sort of early to mid 90s, into the early 2000s, that's when we were in what was called the mega drought, where we basically had, drought years for over ten years in the state of California.

And I used to joke that, the only place I would see it rain was when I would go off to college. Because I would never see any rain back in California.

But it's interesting that you mentioned that, you know, nobody came and talked to you about this as a career because certainly nobody came and talked to me about that. My plan was to was to be a lawyer, actually.

Joanie
Well, congratulations, because I'm an attorney and, no shout out to attorneys. But really, somewhere along the way, you took a good turn.

Nathan
Yeah, I took a class, actually, on Natural hazards, and we were focusing a lot on. There were a lot of water related hazards that I found really interesting. The faculty member who taught that course worked on reconstructing ancient tsunamis and had been out documenting the sedimentary deposits laid down by the Indian Ocean tsunami and the more I started taking courses in geology, the more I started taking courses in hydrology, the more I realized, hey, this is really cool. I wonder if I could actually do this for a career. And so I was kind of a late, wanderer into this field. But water resources and their, their ability has always been something that has animated my life.

Joanie
It's interesting. And I would imagine that's true for a lot of young people before your brain is fully developed and you can't really see the, the broad scope of, you know, time and humanity living in a

chronic drought in those formative years, I'm sure, played a role. You know, when you get to the disaster relief class, you know, and kind of putting it all together.

I remember the tsunami in the early 2000 in Thailand and, just the absolute devastation.

So I'm kind of jumping ahead because you're teeing it up. But I do want to come back to your individual research. So we're recording this right now in March of 2025. And there is a lot of definitions for what's going on. But I would say chaos is one we could all agree on with an assault on science coming from the federal government wanting to just wipe the notion of climate change right out of our lexicon.

So anyhow, what we were talking about before we came on here and I think is important is I think we sometimes just get defensive about that whole notion. There's no debate among scientists. Anybody who knows how to look at data can see that the planet is warming. And for all this air space to be taken up debating the terms that we're going to use for it, and we're going to do a word search and find the word climate or justice and just, you know, erase it from all of the federal grants. Right?

I mean, at its most basic level, watch the evening news. We just talked about the tsunami in Thailand and the drought in California. It doesn't really matter what you're calling it. And if it makes you feel better to just think that this is some act of God that has come down in this moment, it doesn't matter. What matters is there's a massive flood, there's massive wildfires. There's tornadoes like we've never seen before. You know, don't you want people to understand what's happening when those disasters are happening and how to mitigate it? You talked about, you know, disaster mitigation. Is that the adaptation?

Jamie
Adaptation response.

Joanie
Right, right. So I don't understand, even if you're debating this notion and you think climate change is a hoax, which is a direct quote, don't you want people to understand floods? Don't you want them to understand, soon armies, droughts. And that's the work that you both and a lot of people are doing. And I know the research is jeopardized because we call it climate adaptation and things like that.

So, what would you say to somebody who's deciding that National Science Foundation, Health and Human Services, what would you say to them when they're deciding whether to fund the kind of research that you're doing and water?

Nathan
Well, that's a tricky question. I think a lot of us are asking that is, is how do we frame this? And it sounds it sounds a little silly, but honestly, moving away from the term climate change and referring to the downstream effects of it.

Extreme weather is one that we use a lot because that's something that we are observing. We saw it in the really large floods that we had in northern New York and, 2023 in Vermont as well. You know, we had a freak set of storms come in and caused a whole bunch of flooding.

There's an anecdote that I like to tell people when we're on this subject. And that was when I was, in my last year. Getting my PhD in 2019, in Iowa, in the spring, we had horrible flooding, all in western Iowa and Omaha, eastern Nebraska was very heavily flooded, and it resulted in a lot of damage that was done to livestock operations and basically any agricultural operation you had. And I got stuck at an oil change place waiting, waiting for my car to be serviced.

And I got stuck at an oil change place waiting for my car to be serviced.

Joanie
Ironic.

Nathan
Yeah, exactly. And I got stuck watching daytime television, and it was the local news and they were interviewing a, a farmer, a rancher, actually, in Omaha. And they were asking him, have you seen changes to the way that the seasons come? Have you seen changes to the weather? And the guy said, oh, yeah. And gave this really detailed answer, going almost decade by decade. I mean, these these are farmers. These are very practical people who live in the weather and know their land, know the response to the weather. And it gives us this beautiful answer. The answer I would want any of my students to give. And then the interviewer says, so you would say that climate change is occurring. And he goes, oh, I wouldn't, I wouldn't go that far. I wouldn't say that. And that to me, really, it just in that moment crystallized that what we're arguing about is terminology.

Joanie
Totally.

Nathan
Not necessarily phenomena.

Joanie
You know, I totally agree with you. And there's a part of my personality that wants to hang on to the term. And just because you're wrong, we don't need to change, right? There's something about me, but that this is existential. As everyone says, this is so important. Do I really care what you call it? Right? To that rancher? Let's call it whatever you need us to call it, so that you can work with us to tell us what you're seeing in your land, on your land, over these decades.

And, you know, this isn't the first time a term has been co-opted and taken on connotations that you just feel like you're trying to roll a rock uphill. Why does it really matter? Right?

So I kind of want to offer that same question to you, Jamie, and see what you would say to folks debating this.

Jamie
I've been thinking about this for a long time before I joined ESF two years ago, I was on the faculty at West Virginia University for six and a half years, where I study flooding. And West Virginia is a place where we don't talk about climate change because of the political climate. And so I've adapted my language for a long time when, you know, I'm a social scientist, so I'm doing work in communities and I can't go in and ask questions about climate change and expect people to be receptive to me.

And so we instead talk about the things Nathan is saying, extreme weather variability and flooding.

I can get almost anyone in the state to tell me a flood story, but I won't ask them questions about climate change. But what I'm collecting is the exact same information.

So I've really come to a place where you have to meet people where they are. If we're going to engage in these conversations, and this moment in time is so indicative of the need for that. And it's not their fault that they don't believe in climate change because they politicized that and.

Joanie
And they've been given misinformation. It's deliberately misinformed.

Jamie
Exactly. And in a place like West Virginia, where I can say this now that I'm no longer an employee of West Virginia University, where the politicians are deeply embedded in the extractive energy industries, that's been true for decades, if not a century or more. And so, of course, that's what people think.

Joanie
So when you say extractive energies, I'm always trying to, look out for the lay person who might be listening to our podcast, but you're talking about mining, drilling.

Jamie
Talking about coal and timber mostly, and increasingly gas pipelines that's part of the landscape in central Appalachia. But we've been able to have really productive conversations and do really productive work.

I my anecdote is that I have a national Science Foundation grant right now that one of the partners on the grant is the West Virginia State Resiliency Office. That's an office that is mandated by the state to work on disaster response and recovery.

They couldn't be on that grant if we had the word climate change in the proposal. So I scrapped that language from an NSF proposal. Long before the ministration. And it didn't at all change the work we were doing or the questions we were answering, but it allowed them to be productive. They are working in a particular climate where they have to use that language of flooding, variability, etc. This is not new and we need to look to places like West Virginia for thinking about how can we engage nationally in these conversations in productive ways right now.

Joanie
Yeah, I agree, and I know it's not new. And I've told others I have an uncle who was a meteorologist, and he studied climate change in 70s and 80s, and the reaction from some folks to that was like, it was crazy, you know? And meanwhile, there were a lot of scientists ringing bells a long time ago. And, you know, I have adult children now and even things that, you know, I wouldn't consider controversial, I'll use a term and they'll correct me. That's not what people say anymore, you know. And so I guess I just need to understand that the work is so much more important than winning the battle over the notion that there's climate change occurring.

And you know, this it's cyclical. Okay, fine. It's cyclical. We're in a cycle right now where you need experts to tell you why we have extreme weather and what to do to adapt to it.

Jamie
And all of that said, I also don't want to give politicians and people in power a pass. They should absolutely be held accountable for recognizing and addressing climate change, right? I just think we don't want to villainize the everyday person on the ground.

Joanie
I totally agree.

Jamie
So, I do think we don't want to just totally shift the language of climate change because we do need that conversation as well, especially by those in power. But to do the work we do, we don't necessarily need to use it.

Joanie
So, a couple of years ago, it was during Covid because it was on zoom. I had the opportunity to talk to a group of students who had spent the summer at Brookhaven National Lab, and they were talking about the work that they had been doing, and there were about 80 students on the call. And it was at a moment in time, I think, when the IRA had just passed and there was going to be money available. And so the political conversation was part of that conversation as well. And I said to that group of students, how many of you are interested in running for office?

Not a single one. And so I went on to say, while the Senate and the House of Representatives and the president office is all debating what should be in this infrastructure package, can you imagine having people like these students who have a lot more knowledge? Can you imagine, I said, if some of you were sitting in that room and were participating in that conversation? Not beholden to the extraction industries, right. And, how how much better we would be. Right? So I was really heartened before that conversation ended that I started to see some chat comments about, well, how do you run for office? And I'm thinking that while I'm sitting here and listening to you, you know, I think that there's a lot of people that would make politics so much better that would never run for office. They have no interest in running for office, but at some point we got to take, you know, we got to take what we got. Right.

Have you ever considered running for office?

Jamie
Increasingly, I have been wondering about how to engage and local politics.

Joanie
Awesome.

Jamie
So and maybe that's a question I should ask you at another time. I think as it feels like our national political scene is spinning out into chaos, I have increasingly felt the need to think about how to ground myself locally and how to use my expertise locally.

Joanie
That it would just change everything. You know, these groups that make monumental decisions in your day to day quality of life around here there's like nine people, there's nine city councilors, so one person can make such a huge difference. And I won't belabor the point. I'm just planting the seed.

Jamie
I would love to talk to you at some point. I always say it takes two years to settle in a place. And my husband said to me recently, you know, we've been here for two years and now what do we do? It's time.

Joanie
To get.

Jamie
Know. So, right?

Joanie
Yes. I would be so happy to help you do that. I've actually talked to MOSA of presidents in the past. Not Eaden yet, but I will about maybe having a, civics kind of presentation. That's just the granular nuts and bolts about how you get your name on the ballot. If you want to run for office. I mean, if we could get some of our ESF students to throw their hat in the ring for town council or city council or county legislature, can you imagine?

Well, so then let me go back to what I intended to talk to you about right in the beginning. And that is your actual research right now. You talked about an NSF grant that you're working on. What is your actual research right now?

Jamie
My work right now is around flooding response and recovery and disaster preparation in central Appalachia, mostly in West Virginia. So most people don't know this. But West Virginia is actually, by some measures, the highest flood risk state in the country. And that's because the topography

of West Virginia is such that it has these narrow valleys that feed into these, floodplains. And it's very difficult to build on the steep area. So most people have built in this flat area.

Joanie
Oh, right.

Jamie
And so as a result, you get these splashy events and you can correct all of my science here, that feed into, you know, larger creeks and streams and rivers and you get these fairly regular, fairly major flood events.

In 2016, there was a massive flood event in West Virginia. There was a federal disaster declared in 12 of the 55 counties, 23 people lost their lives. Billions of dollars of damage is done. And I began to work about eight months after that flood with, a group of civic actors, emergency response, nonprofit, faith based groups around what that disaster response looked like in the context of West Virginia.

So, you have FEMA, you have Red cross, you have the National Guard. But you also in these spaces have nonprofit groups that are created or that come in. You have faith based organizations that have disaster branches, and all of these other organizations.

So, I became really interested in this recovery in response space. Who was showing up and doing that work? How was it coordinated? How did it serve people? Who was filling in the gaps that FEMA couldn't fill? All of these questions.

And that work has gone on for years now, about eight years. But three years ago, we got the first seed grant for a larger NSF that we have now where we've systematically documented lessons learned from that 2016 flood over the course of the better part of a decade, to understand and to network better the disaster response and recovery community in West Virginia.

Joanie
This is exactly what I'm talking about. We don't need to debate whether it's climate change, but don't you want Jamie to study what happened and put together the lessons learned.

Jamie
So that another community, yeah.

Joanie
Better the next time when we don't have 23 people pass away from the next flood that we know is coming.

Jamie
Yes. And so as part of that project, my former colleagues at West Virginia University who are GIS experts have created a toolkit of geospatial visuals, 2D and 3D, where not only can they use the

lessons learned and best practices that we've created with communities, but a community can also go in a small town mayor in West Virginia, maybe also the bus driver or the post person, right, can come in and look at visuals of their community and understand their risk in comparison to other communities across the state in different flood scenarios, 100 500 year can actually say this fire hall will look like this. In this flood scenario, I need to move my disaster relocation center. Very basic things that are really critical to saving lives.

Joanie
Crucial.

Jamie
And so that tool is launching next week. It will be available for public use. And we're just rolling out the marketing and it's really exciting.

Joanie
Yes. Congratulations.

Jamie
And a great project with many, many partners.

Joanie
How about you, Nathan? What's your research look like right now?

Nathan
Yeah, my research is, it got got a couple of different things going on. A lot of it has begun to focus since I've moved to to ESF. A lot of it has started to focus on, more forest hydrology and really trying to understand how, different management activities or just climate change across the, the northeast is going to result in a changing of the fundamental hydrologic processes in a lot of the forests that we have around here.

So one of our, big projects that we've been working on, my, it's a collaboration between myself, two other faculty members in my department, Doctor John Drake and Doctor Andy Vander Yacht. We're looking at the hydrologic implications of what's called climate adaptive silviculture, which is a broader program, kind of national program that has been, developed, by a number of different universities in collaboration with the Forest Service that is looking at different ways to manage forests, to build resilience and maintain critical ecosystem services under climate change.

And we found when we were looking through the literature that there's a bit of a knowledge gap with regards to if we change the density of forests and if given watershed, because we're engaging in a management activity to preferentially select for certain species that will be, you know, maybe more drought tolerant, nobody's ever thought about how that would affect the hydrology of a lot of these watersheds.

And in much of the northeastern part of the United States, drinking water supplies come from well-managed forested watersheds. And then that maintains the level of water quality that does

not necessitate additional filtration prior to distribution. The city of New York gets all of their water from the New York City watershed to the east and west of Hudson watersheds that are then brought by aqueduct to the city, and it saves New York City about $100 million a year in water treatment costs.

Joanie
You know that's true here in Syracuse.

Nathan
We get our water from Skaneateles Lake.

Joanie
Lake, and it's not we don't have to have those massive filtration plants because of the water quality. But you're saying, look at the hills on either side of Skaneateles Lake. They're forested. There's things that are happening out there in terms of emerald ash borer or the American chestnut or Dutch elm disease. When those forests are changing and those species are no longer what's happening to the water that's landing there, and what will the water quality be when it rolls down the hill and into Skaneateles Lake, which is water we're drinking?

Nathan
Yeah, exactly. So looking at how kind of both natural phenomena as well as human intervention influences the quantity, quality and the timing of water arrival. These are all sort of the things that have really animated my, my research program at ESF. And so that's taken the shape of both doing work on ESF properties. We've got some money to look at the climate, adaptive, silviculture and its hydrologic implications.

Joanie
You all throw the word silviculture around a lot here, but you can define that for us.

Nathan
Yeah. So basically the, the process of trees, the trees and managing forests. Exactly.

Joanie
That's an SRM term that I hear all the time silviculture.

Nathan
It's one that I didn't know really until I got here.

Joanie
Okay, good, good. So now you're making me feel better.

Jamie
Yeah, you don’t hear it here in studies.

Nathan

So we got some money through, research institute here at UCSF. Caffrey.

Joanie
Doctor Colin Beier's program.

Nathan
Exactly. To look at that phenomenon both up at the Huntington Forest property as well as in Heiberg memorial forest. And, we also have some grants out to try and build a number of sites, in a number of different forest conditions, and with the goal of creating a transect of field sites that spans a kind of a climate gradient from the warmer south to the cooler north, such that we can then use what we would call a space for time approach or chronos sequence, where we look at the sites in the south and we say, this is what the north is going to look like in 20, 30, 40, 50 years.

Joanie
Very interesting. You maybe would want to talk to Doctor Stephen Shaw and Environmental Resources Engineering. He just got a big private grant within the last couple of weeks to look at the water quality relative to the harmful algal blooms in the Finger Lakes, particularly, I think, in Skaneateles Lake and I'm thinking while you're talking about how that all goes together, because that organic material is coming into the lake at a rate that it didn't used to. And there's a lot of factors, I'm sure, but one of them being what trees are trying to catch it.

Nathan
Exactly. And and what's the land use in the area? Both the historic the current how is it projected to change? And when we were working on developing the grants for this project, a lot of the questions that were coming up were related to previous discussion we had of how do we talk to practitioners about this and much of conservation of forests is done to promote wildlife habitat. And, you know, so you've got nice lands to hunt on and healthy communities there.

So, we were beginning to think, what if some of our outreach could come in the podcast space on these sorts of game and wildlife conservation podcasts. But we start taking the, approach of, you want healthy streams and proper hydrologic functioning so that you've got nice rivers to fish in. You've got healthy aquatic communities, and you can fish all summer without stressing them out.

Joanie
Again. Right. It's adapting to that political climate, but being able to do the same exact work that needs to be done. And how important is it? I mean, even if you're not working on grants together yet, how important is it to be in an interdisciplinary space, like how is it working? We hired these clusters, faculty clusters. We talked a lot about the future, but how does it look and what's the goal with an interdisciplinary faculty cluster?

Nathan
It was kind of the experience that I've gotten from being in the water cluster is if you get a whole bunch of people together who are all at kind of the same stage in their careers, you know, we're all going to be looking to put together Grant to manage students, to develop research questions. And I found that being in that interdisciplinary group and just being able to talk to these different faculty

members who were doing work that goes to the same ends as my work, but takes very different paths to get there. It forces me to think differently about my work and see connections that I may not have necessarily known about, based off of just when you're in your little worlds or little silo, it can be hard to see how a lot of these things end up connecting. And that is really, while it wasn't necessarily the the, the water cluster, the the work that we're doing on this hydrology and climate, adaptive silviculture, it's a lot of faculty members who are all in the early parts of their career.

We were having conversations about different kinds of projects that we could do together, and we saw that, you know, with a lot of the research that my colleagues have been doing, nobody had ever really thought about any hydrologic implications. And that it creates an environment that's really conducive to, I think, developing new projects and forging new collaborations.

Joanie
Which is the hope. So, I'm glad to hear it's it's unfolding that way. How about you, Jamie? Do you see from NSF or any of the other federal or state funders a focus on interdisciplinary work? Are they wanting to see more of it?

Jamie
Absolutely. I think speaking from the vantage point of social science, I think we're increasingly seen as important to the natural biophysical sciences. And I think that's true at a federal level. I also think it's true here at ESF. I increasingly I'm having conversations with folks in Illick and Bray about how we could do work together. I think the what our cluster group is a great example of that interest, interdisciplinary space where we're thinking, yeah, across ecosystem terms, but across disciplines.

And so, Christine, Georgia Caucus and I have already put together one proposal. It wasn't funded, but it was a good start actually on Skaneateles. So Christine also does hydrology work. She's in ERE and we put together a project to understand the social ecological dynamics that we're allowing Skaneateles to be the source of water for Syracuse. Thinking about, well, what does this look like in the future as we're potentially increasing regulation around things like forever chemicals as the climate changes. And so using a combination of social science and hydrology to really understand those processes. So we're already kind of that's great. Starting that.

We've also created the, Water Policy and Science Seminar series, which is a one credit class for graduate students that the cluster has kind of Christine and I led at the first semester, Christina and Aaron Ninokawa, one of our colleagues, is leading it this semester. And the idea is that will hand off leadership of that every year. And we bring speakers in from around campus, from as you from the region, so that both faculty and students can meet with people working on water, both practitioners and scientists, and get a sense of who's out there, how can we make these connections? How can we begin to develop interesting ideas and proposals? So we just had Frank Moses, the head of the Skaneateles as Lake Association, come in and get a lot of.

Joanie
Yes.

Jamie
And then a big proponent of, of ESF and so we've kind of found these informal ways to where I think we're all starting to connect and just like Nathan said, we're all kind of new here. We all hope we have long term futures at this place. So what you do community, we want to build here. And I think we're we're hard at work at building that community.

Joanie
And I'm so happy to hear this because when we were talking about it, that's the only way it's going to happen, right? You do get in. Where are you on the third floor in Bray.

Nathan
Maybe I'm on the fourth floor and.

Joanie
And you're over in Marshall. Yeah. Right. So the only way it's going to happen is if we deliberately put you in a group and then let it happen organically.

There was a couple things that you were talking about. One is that in a previous life, when I was in county government, one county in central New York has one of the dirtiest lakes, most polluted lakes in the country, and one of the cleanest lakes. In one county.

I mean, how remarkable. And when an opportunity for people here to be studying both. And we do. But I was charged with the clean up and executing a consent order from the federal government to clean the lake and among other things. And I'll cut to the chase. I got to work with this scientists. So we have this combined sewer system where the stormwater and the sanitary sewers come together.

And by design, when there's too much water in the system, they the hatches open and those overflows dump into the creek, and then they make their way to entire lake untreated. Right? Very basic. I got to work with this scientist who you were talking about the models. He could show me where a drop of water lands and which one of those combined sewer overflow that water would make its way to, so that we could take limited resources and make sure that we were mitigating the one that was going to have the biggest bang for buck.

That's why I want to come to ESF. I was like, this is just such a better way to do government right, to have science saying, this is what's necessary for you, Tony. If you're trying to accomplish this thing over here, I can tell you how to do it. You have to go sell it to the powers that be and get the funding for it and all of that.

But that partnership and so that talks to this interdisciplinary cluster, but it also talks to the importance of social scientists, because you can have absolutely brilliant, hard scientists who just have huge breakthroughs. But if you're not communicating them in a way that it can be applied in communities that are affected, you might as well just be in an echo chamber, right?

So, it's crucial that you have people that understand the social aspect of the application and the scientists who can tell you what it is you need to be communicating, to those folks. So, I just I just feel like one of the luckiest people in the world. I say it all the time that I get to work with people on all sides, and I will try to follow your wisdom of just not fighting the fight on the terminology and just making sure that we're doing the work that needs to be done. But at the same time, maybe have a little seminar on how to get your name on the ballot, I believe. Nathan, I didn't put you on the hot seat. Any chance.

Nathan
I, I've thought about it at a number of different points in in my life. I, I don't know, I guess, I guess what it. Maybe local government when I'm a little bit, you know, further along in my career and I feel that I have maybe more experience and a little bit more insight in the area to, to bring to bear.

But it just seems like the climate in which we're in right now,

Joanie
It's mean.

Nathan
Yeah. And it's, it's sort of totalizing in a way. It's I think I imagine like sort of a continuum of public service and, you know, you've got educators who are going to be, you know, certainly on that. As you know, these are people who made a conscious decision to come. And many of us could have gone and worked in the private sector and would probably be making more money and probably be working shorter hours. But we feel a call to to be educators. We're curious about pulling apart different systems and understanding how they work.

And then like as you start moving to like the more extreme ends of that, the logical conclusion is, I think is, is actually being some sort of elected representative where it's like you're lived experience is now the service of your constituents, for better or for worse, because they'll let you know if they're happy and you bet they'll let you know if they're unhappy.

Joanie
And you know, imagine that you do this and you end up on your elected council somewhere. Legislature, Congress. There's not any words that any lobbyist from the extractive industries could come to. There's no checkbook big enough where they're going to convince you to do things that are counter to what you're seeing in the communities that you're working in. And that's what we need, you know, for so many people, being in elected office is the best job they'll ever have.

And it's terrifying to lose that job. And who do I need to get behind to make sure that I don't lose that job? And a few of them maybe. Okay, but when we're dominated by people that are beholden and you start throwing the word oligarchy around, right. Which this is the first time in my life and I'm a lot older than both of you, that people have thrown it around here in the United States.

So anything I can do to encourage people with your knowledge and personalities and integrity to get in, I will help. I will be out there knocking on doors for you, and you're making me hopeful

because I'm really going to follow through. On just a little primer. I'm going to bring up like a Board of Elections person and say, how do you do it?

I had the benefit of growing up around it. It was like second nature. But I guess if you've never done it, how who do you even start talking to, you know, and I would encourage you to do it sooner rather than later. I was listening to you say maybe as you get further out in your career, but there's also an idealism that comes with youth that is wonderful, and you really don't want to lose that.

You have a willingness to take risks and know you're you have, a whole lifetime ahead of you and a vision of how things can be that is super valuable right now. So, I would recommend, please keep the informal conversations going and let us know how we can help and facilitate. But I appreciate very much that you would take time out of your busy schedules to tell everybody what it is you're doing and why it's so important in this moment.

So, hats off to both of you.

Nathan
Thank you.

Jamie
Thank you for the invitation.

Joanie
Thank you. See you soon.

[MUSIC]