



## **S U N Y College of Environmental Science and Forestry Campus Conversations: The Podcast**

Episode 2

Doctor Lee Newman, Associate Professor and Chair of the Department of Chemistry

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**Joanie Mahoney:** Welcome. This is Joanie Mahoney, and I have the pleasure of being joined here today by Doctor Lee Newman. Welcome, Lee.

**Lee Newman:** Thank you.

**Joanie Mahoney:** And I was hoping that you might be willing to introduce yourself a little bit. I know that people know who Lee Newman is in terms of, she works over there, and this is the kind of work she does, but just a little bit more about yourself. So, who is Lee Newman?

**Lee Newman:** I mean, I could sit and go through a long list of what's on my CV, and that would be boring for everybody to listen to. I think I would have to say that Lee Newman is someone who is very passionate about the students that she works with, about the classes that she teaches, and about E S F and developing the programs here. This is a place that is absolutely fantastic. And one of the things that my students always find absolutely fascinating is that my work is with plants, and my greatest hobby is gardening. And when I get out of here, if I'm stressed, I go home and weed the flower beds because it works out frustrations.

**Joanie Mahoney:** Well, let's back up a little bit. Where did you grow up? Where was your childhood spent?

**Lee Newman:** I grew up in Southern New Jersey in the pine barrens, pretty much in the middle of nowhere. And I wound up going to a small community college to start my



academic career. And then transferred to a very liberal arts environmental school for my bachelor's degree. And then just started kind of wandering the country for different academic positions. Going to Rutgers for my master's and P h D , wanting out of New Jersey at that point and moving to Seattle, and got a postdoc, ironically in the medical school and the pathology department. Before getting a faculty position in the College of Forest Resources. I left there to go to South Carolina. I don't believe in packing up for short moves.

**Joanie Mahoney:** That 3,000 miles that way and then 3,000 miles back?

**Lee Newman:** Yes. And I worked it was a very interesting position. It was part-time in the School of Public Health at the University of South Carolina. Part-time at the Savannah River Ecology Lab, which is a division of the University of Georgia. And part-time directly for the Department of Energy devising new and innovative environmental remediation technologies before coming up to New York.

**Joanie Mahoney:** E S F was not your first stop in New York, is that right?

**Lee Newman:** I was two years at Brookhaven National Lab working on a vital fields project. It was kind of ironic because Syracuse University was developing in collaboration with the Department of Energy. And they had people come down to Brookhaven, and our then vice president for research, went down and visited, and he invited me to come up to E S F . Okay. That's nice, but I have a really nice job here working for the Department of Energy. But then we were asked to send some speakers from the D O E up here to Syracuse University and E S F . Then I was one of the first people to come up here. And I can remember walking into Illick, and it was like, "Oh my God, I'm home. This is where I'm supposed to be. This is what I'm supposed to be doing." And there was a faculty line opened at the time, and I applied for it. And here I am.

**Joanie Mahoney:** What a great feeling that must have been, that connection with E S F .

**Lee Newman:** Yeah.

**Joanie Mahoney:** So, was your interest in environmental health born of the postdoc opportunity, or were you already interested in the environmental health space, before that.

**Lee Newman:** Truthfully, I was more interested in dealing with the environmental problems that were being created by industrial growth, by government growth, especially Department of Defense and Department of Energy sites, and trying to go out and



clean up these really highly toxic waste sites. And that was what I was doing out at Washington and again in South Carolina. But when I was in South Carolina, my home department was in the department or in The School of Public Health, the Department of Environmental Health Sciences. And that's where I first started getting interested in the health side of things and how these problems were not only affecting the environment but affecting the people as well.

**Joanie Mahoney:** And as a result of that, E S F has benefited because you just heard within the last couple of weeks that our new environmental health degree program has been accredited.

**Lee Newman:** Yes. If that was actually an interesting pathway. The program was envisioned but wasn't moving forward. And I was asked by the then-provost would I take over the program and develop it. And when we spoke, he said he really wanted this program to be nationally accredited. So, we very consciously designed the program to be able to get that national accreditation. And we went up originally four years ago, we went up two years earlier than most schools go up. And we were encouraged by the accrediting agency to do that because of the strength of the program. We got conditional accreditation, and just few weeks ago, we were told that we had the full accreditation for a full five years now.

**Joanie Mahoney:** That is fantastic. Congratulations to you, and great for us. And that is the program that I have talked about outside of E S F . And it is one that really generates a lot of interest. There's a lot about it that's interesting. But one of the things that is unique in my experience is the pathway that you have created with Upstate Medical University. And the idea that a driven, focused senior in high school could be accepted to medical school contingent on successfully completing the program that you've put together. And now we have an agreement with Upstate for a 3 plus 4 with the medical school, is that right?

**Lee Newman:** No, it's a 4 plus 4 right now. And that is with actually five different majors on campus that the students are able to come in here. They are very specific courses that they have to take every semester. They have to maintain a certain G P A , every, all of their science courses and required courses. They have to maintain a certain GPA. So, it's a lot of stress on the student's doing is what the payoff is that they're guaranteed admissions into the medical program if they meet all these requirements.

**Joanie Mahoney:** I knew that there was talk of a 3 plus 4 and a 4 plus 4, and I have them backward. I thought we did the 3 plus 4 first, but we've done the 4 plus 4.



**Lee Newman:**

We did the 4 plus 4 B S M D . We've done the 3 plus 4 doctor of physical therapy, and we're in the process of negotiating a 3 plus 4 B S M D program.

**Joanie Mahoney:**

That's fantastic. And I can tell you from my conversations with folks at Upstate that they love the program, not simply because we're delivering these really well-prepared students, but better doctors in the future. Because they see this as a path toward a more well-rounded doctor. And it makes sense to me as somebody outside that world, that if you're a student that knows you want to go to medical school, that you spend every waking hour doing the things that you can put on your resume to up your chances to get in. So, all of the extracurricular activities are in that same direction. All of the studies are in that direction. And then a lot of time spent on M C A Ts and that kind of thing. And now they said with this program and your preparation of our students, our students are able to experience other parts of college. If there's a class they're interested in, or if there's an extracurricular that they're interested in, they can do it because despite what you just said about how rigorous our academic program is, they're guaranteed acceptance, so they don't have to spend all of their free time also building that resume. And I love the idea that there will be better doctors as a result of the program. It's not just some of the best and brightest, but a different kind of doctor that's had a different kind of life experience because we've put this program in place for them. So, I love it.

**Lee Newman:**

I think the, one of the things what's really great about this is they're able to look at everything in a more holistic way. So, it's not just the medical school, but how does their housing, how does their neighborhood, how do their jobs, how is it where they recreate all impact human health? And they're bringing that with them into the medical program. So yes, it's a really fantastic opportunity for the students.

**Joanie Mahoney:**

And I had an opportunity to travel with you to Clear Path for Veterans. And I know that is part of the opportunity that's created for students because of the partnership you've put together there. And I think now that I know that you spend your free time gardening. I've seen they you now have more ground to cover because of the partnership at Clear Path. Can you tell us a little bit about that work that you're doing with Clear Path for Veterans?

**Lee Newman:**

Well, that was actually started by one of my doctoral students looking at horticultural therapy, which is the idea of allowing patients to do gardening, gardening related and nature-related activities is going to improve their psychological health, which in turn will help improve their physical health. So, we've had a program doing this at the Veterans Administration Hospital for, I think 7 to 8 years now. And it's a very well-received program over there. And we had an



open house, and visitors from Clear Path for Veterans were attending the open house. Saw what we were doing and asked us if we could help develop a program for them at their facility. So, what we do out there is we grow a kitchen garden which has herbs and vegetables and things that you're not going to get in a grocery store. And we can do programs out there when they had big events, will have walking tours of the gardens, and talk about the different herbs in the health benefits of the herbs and how you can incorporate them into your cooking at home and how to grow them. And these are the type of programs we're doing to benefit Clear Path. Now for our students who are interested in the Food Studies Minor, this gives them an opportunity to go out there and do the organic gardening with us. And also potentially even work in their kitchens where they're preparing food using local and seasonal foods and be able to serve these to the veterans' community.

**Joanie Mahoney:** And I'll say from our visit there that they want to do even more with the E S F . It's been a great partnership. And like a lot of places I've visited in the last couple of years. You'll find E S F alum, and there are E S F alum as Clear Path for Veterans. What experience, if you can think of one, really put you on the path to where you are now? How do you grow up as a child in South New Jersey and end up this expert in environmental health, but also in using plants to remediate and to heal the ground and what happened in your life as a child that set you on this path to us?

**Lee Newman:** It was actually when I was in college at the community college. I did not know what I wanted to do. I knew I cared passionately about the environment and about animals and plants, but I really didn't have a direction. And while I was at that school, I just took every science course they had. One of the courses I took was a microbiology course. And the professor taught the course to prepare students to go into the nursing program that was also offered there. A lot of it was medically oriented. All of the students in the class had to write a term paper, and the students would talk about I'm going to write about this disease, and I'm going to write about that disease. And I'm like, now, I don't want to do this. And the professor came up to me and he said, I've never done this with a student before, but I'm going to do it with you. I'm going to give you the topic of what you're going to write your paper on. And he gave me a bunch of research articles on the field of bioremediation using bacteria to clean up the environment. And I've read those articles, and it was, "Oh my God, this is what I want to do. I want to be able to use nature to clean up these problems." And from that point on, that was what I knew what I wanted to do issues, natural systems to help clean up the environment. And it wasn't until I was in graduate school, and I was starting to look for a postdoc.



And I again, I was looking at all bioremediations. And I met with a faculty member, and he started giving me information about other people around the country doing bioremediation. And he said, you know, there's this one guy out in Seattle. He's got this really crazy idea. But you might be interested in it. And I said, What's that? He's like choosing plants to clean up the environment. Wow. That really sounds cool. And I called him up, and we talked on the phone, and the conversation wound up going 2 hours. We just really hit it off. And at the end of the phone call, he offered me a postdoc position, and I packed up from Rutgers and moved to Seattle, Washington a month later.

**Joanie Mahoney:** Isn't that interesting? And I think it's great that you can pinpoint that experience with that teacher at the community college. And I wonder, have you ever gone back and had a conversation with that teacher?

**Lee Newman:** Multiple times. He became very much a mentor and a friend. And until he, unfortunately, passed away a few years ago. Anytime I would be in that area, I would make sure to stop back and visit with him and talk to him about what I was doing. And it was just, it was such a fantastic experience having him as a teacher.

**Joanie Mahoney:** Can you look back on things that you have done, decisions that you've made that maybe didn't work out the way you wanted them to. And you might do differently if you had another chance, or maybe they weren't what you were planning, but they ended up being a wonderful opportunity.

**Lee Newman:** Well, on the things that I would probably not do again, is when I was in Washington, I was doing a lot of work for the Department of Energy. And they very definitely wanted me to come on and work for them, but I wanted to stay in academia. When I moved to South Carolina, as I said, it was a very weird position of my primary appointment was in the School of Public Health at the University of South Carolina. But I was also employed through the University of Georgia at the Savannah River Ecology Lab and directly through the Department of Energy. The Savannah River Site. Having three offices, two labs, and three bosses is not something I would recommend for anybody. I very quickly found out that no matter what desk I was sitting at, the one critical piece of paper I needed was not at that particular desk—and keeping three bosses with very different objectives. For me, that was not a calm-inducing situation.

**Joanie Mahoney:** It's interesting coming from you because you have a reputation for being a very hard worker and taking a lot of different jobs on and seeing them through yourself. So, for you to look back and see that as something to learn a lesson from. I hate to



break it to you, but I'm not sure you've fully internalized that because you wear a lot of hats here at E S F also.

**Lee Newman:**

Well, at that time, I was an untenured assistant professor. So, they could put a lot more pressure on me to meet expectations that they had, whether I thought they were reasonable expectations or not. It was a phenomenal learning experience. I learned so much from so many people working there. But I also can say that when I came here, I did not do that until after I got tenure.

**Joanie Mahoney:**

Okay. So that you did learn the lesson. Okay. So how about role models? Do you have people, I suppose your teacher at the community college would qualify or their role models from different points in your life that inspired you? I mean, it was not common. We're probably close to the same age. There weren't a lot of women pursuing careers in science, and I'm wondering if you had any role models along the way.

**Lee Newman:**

Well, going back to that one community college professor, he was a phenomenal teacher. And when I was in graduate school, he contacted me and asked me, was I interested in picking up a part-time job teaching at the community college. And again, I'm multitaskers supreme? Yes, I said Sure. Why not? And I went back and teaching, and it was kind of interesting because I modeled my teaching style very much out of that professor because he was such a phenomenal teacher. And students who took me and then took his class would come back and say, "It is very obvious where you learned to teach because of similarities in our teaching style." The other person who I would say are two people, actually, was when I was at the University of Washington, and one was my postdoctoral advisor there. He was again a phenomenal, phenomenal researcher and one of the nicest people I've ever worked for. He was the type of person where we had an international postdoc that was there, and there were problems with her paperwork and thus her ability to get paid. And he just paid her salary out of his own pocket so that she would be able to afford to stay in the states. And that was the type of person he was. He was just absolutely fantastic. And at the same time, we had a lot of our funding, ironically from Occidental Chemical, which is here in New York State. And the program manager would fly out once a month to supervise the project, see what we were doing. And he and I became very close, and he was able to offer me a lot of insight on how and why things happened from an industrial standpoint. And that a lot of times, especially contaminated sites that started developing in the forties, fifties, sixties, that we can look back on and say, oh my god, how did people do all this pollution? And it wasn't that the company said, oh, I'm going to deliberately pollute the site. From him, I learned a lot about the philosophy, the mentality, and



also the political expediency of why some of these sites developed. Putting it in the context of the Cold War, the Vietnam War. All of these other issues and it was just a very, very valuable learning experience, warming. And it's something I bring into my classes, especially when I teach remediation classes of telling students. There were reasons why some of these sites developed the way they did. And it wasn't because people didn't care about the environment. But they had a lot more pressing concerns that they were dealing with politically at those times.

**Joanie Mahoney:** I think that's really important. I had the opportunity as county executive to work on a Superfund site. And I think that's a good perspective for people to share because I think we oversimplify. And it's the big bad corporations. And really, when you put the whole thing into the context of what was happening in the world and the jobs and the lack of knowledge that people had that we now have because of work done at places like E S F and others. I know your mom has traveled with you, and she is now living here in central New York. Did you have siblings growing up?

**Lee Newman:** I have one brother. He lives in Alaska. He has worked, he was in the Air Force, and he got transferred up to Alaska, and he was doing some civil engineering projects. A lot of his original work was working with indigenous communities and working to get infrastructure, water, sewage systems, these type of things into the indigenous communities to improve the health of the people living in these very remote communities. And after he left that, he's continued to work at that point for the Army Corps of Engineers doing some of these very, very large civil engineering projects.

**Joanie Mahoney:** You know, I would love to go back in time and look at your kitchen table because for you to take the path you took and for your brother to take the path he took, there had to be such an interesting life that would create this concern for the environment and for other people and for healing. Too bad we can't rewind. Although maybe with all the cameras and everything we have now, sometime in the future, we'll be able to go back and rewind the lives of folks. But it explains a little too about why your mom is living here with you if her other choice was Alaska. So not that there's not great things happening in Alaska, but we're a little less remote here.

**Lee Newman:** Yes.

**Joanie Mahoney:** But I think that's great that she's here with you. How much do you teach now?

**Lee Newman:** A lot.





**Joanie Mahoney:** Everything with you. The answer is a lot, and yes, I do that.

**Lee Newman:** In the fall, I teach the orientation course for Environmental Health and the Molecular Techniques course. In the spring, I teach Cell Biology, a cell biology seminar. Last year our topic was emerging viral diseases. I teach a course in Phyto Remediation. I teach the capstone course for biotech and environmental health. I co-teach diversity of life and co-teach a Therapeutic Horticulture Course.

**Joanie Mahoney:** I have no idea how you fit everything you do into your life, but how about your connections with students? Do you feel like you're outside of the classroom? Like the students and you have a relationship, and you're connecting with them here because that's one of the things that I notice about E S F is this: people say this is a family environment. But if you walk around, you really see it. I see faculty out on the quad playing Frisbee with the students, and you're emulating a teacher that you really made a connection with. And I wonder, how are we doing as a college in fostering those outside the classroom connections with students.

**Lee Newman:** I think we're doing extremely well. Keeping in mind that there are always people that are going to connect better with the undergraduate students than other faculty members. I think a large number of our students are able to truly form a connection with their advisor, with one of their professors, and of course, that they particularly enjoy. And I think that is a real strength for E S F . One of the stories I like to tell is from when I was at the University of Washington. In the department, I was in there and the biochemistry program and the medical school. We had three national academy members, a Howard Hughes Fellow, two Nobel laureates, and a professor who had the largest single investigator grant from the N I H for multiple years running. And I remember doing a student outreach day, and someone mentioned to me, oh, I want my son, daughter to go to the University of Washington because they're going to be able to have these, these people as their professors. And I looked at them and said, "What makes you think they teach freshman chemistry? Their graduate students can't find them half the time." When I was at Rutgers, the general biology course was close to 1,400 students. One course. The lecture was that professor down on the stage with the microphone. You didn't have a connection with the faculty. And I think that's one of the truly great things that E S F offers is that you, if the student makes any effort, they can form a fantastic relationship with their advisor, with one of their teachers, with a research project mentor that is going to impact them for a long time after they leave E S F .



**Joanie Mahoney:** Oh, I completely agree. And these are folks that they're able to make a connection with that are experts in their fields and doing the research. So, it's such an opportunity for students that come here to E S F . So how about your program with the University in Siberia? Tyumen, right?

**Lee Newman:** Tyumen University. Yes, that is a program that we've been working on developing since 2013. We've had at least one student who went over there and participated in their summer program. We had a P h D student that spent a year over here working with me and my lab. And it's kind of interesting because a lot of the emphasis of research and development at that school very closely parallels what E S F is doing about concerns about the environment, concerns about climate, concerns about environmental pollution, concerns about developing green cities, and the chance for E S F to partner with a school like this, I think is absolutely fantastic. Not only the research opportunities for the faculty but the opportunities for our students to go over there and participate in the summer program, to go over and spend a semester abroad in their honors program. To be involved in a totally different culture is just absolutely amazing.

**Joanie Mahoney:** And that was born of a relationship someone had with the E S F , right?

**Lee Newman:** Yes. That their current senior vice-rector or a senior vice president actually did some of his research as a student here at E S F . That he worked with one of our former faculty members on mite and infectious mites. And he has made a name, a huge name for himself in Russian studying this. He moved up through the administrative ranks, and when he was offered the opportunity to partner with ESF, he was, "But of course, I know E S F I'd love to partner with them!"

**Joanie Mahoney:** Isn't that great? So how did you make that connection? Were you here when he was a student here?

**Lee Newman:** No. No. It was actually through a colleague of mine, Doctor Guy Lanza. He was offered a Fulbright to go over to Siberia, to Tyumen University, and work with them on developing some of these programs. And when he mentioned where he was coming from with E S F , that's when we figured out the connection that was going on.

**Joanie Mahoney:** What a coincidence.

**Lee Newman:** It really was.



**Joanie Mahoney:**

I think we have alum everywhere. I can't get over how many different stories. I have heard where it comes back to an alum, and we make great alum because of that student experience that you just described and the passion that they have for this college when they leave because they really felt like they were part of it and not as you said in a gen-bio lecture with 1,400 other students. So that program is something that we are, I think, hoping will give us the ability to issue joint degrees maybe.

**Lee Newman:**

Yes, that's what we're hoping for. The undergraduate programs, I think, are going to be very exciting for our undergraduate students. But the real goal is to develop these collaborative research programs. And the goal is that students would be able to do half of their degree work at their home institution, half of their degree work at the other institution. And then, when the students graduate, their publications would be collaborative between both the professors and the student. And they would wind up with two diplomas, one from each of the schools. And we're hoping to develop these in biology, in chemistry, in these other areas where we have these overlapping research interests.

**Joanie Mahoney:**

I think that's great. And I can't tell you enough in my experience here, and I've been at E S F now three years. How much I hear about these wonderful programs and how many of them come back to Doctor Lee Newman. So, I know that you are busy. And colleagues in my experience here, they know each other. We're a small school and, and folks know each other. I have been surprised by how little people know about each other's path to E S F, and what their passions are, and what kinds of things they're working on outside of what we all know about each other. And so, the purpose was to have conversations that we could share with the college community, and people could learn. Not only is Lee overseeing environmental health and teaching all these classes and mentoring students, but this is who Lee is, and these are her passions, and this is what she hoping to do on behalf of the college. And I think we did a good job of that here. I'm thrilled. I thought the first time you and I had the opportunity to sit down and talk, I felt like I am so lucky to be at a school where there's people like you. I think you have not only the educational pedigree, but you have learned maybe from that professor or the mentor, your postdoc kindness because you've been really patient with me and helping me understand how these things work and how I can help you. I really want to succeed in and close the loop on some of the things that you're doing because it's been great for the college. We are very lucky that you're here.

**Lee Newman:**

Thank you.



**Joanie Mahoney:** And I look forward to seeing you now that we're putting COVID maybe a little bit in the rearview mirror. I hope to see you more often.

**Lee Newman:** Same here. I'm looking forward to working with you and developing these really fantastic programs for E S F .

**Joanie Mahoney:** I'm in. Thank you, Doctor Newman.

**Lee Newman:** Thank you.

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