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In this week's episode, we are talking with Dr. Ann Dixon. Ann is a reader at the department of chemistry. She is a senior tutor. Athena Swan chair. As well as the chair of the diversity committee in the department, she's also the founder of the departmental women's network. And Ann teaches across all year groups and runs her research group. Can't wait for you to hear this and i hope you enjoy this episode.

Bo: Ann, hello, welcome. Welcome to this podcast. How are you doing

Ann: I'm doing great. Thanks for the invitation.

Bo: Thank you for joining us and thanks for finding the time. Let's start at the very beginning. Tell us more about yourself and what was your journey to becoming an academic.

Ann: Um, well, um, my name's Ann Dixon. I'm a biochemist and I'm currently a reader in the chemistry department at the university of Warwick. I would say my journey is still in progress and I'm not sure I'm there yet. Uh, so, um, I did a PhD in chemistry in the United States. I'm originally from the states, uh, and I did that at the university of Kansas.

And then I did three post-docs. I did one in Washington, DC for the food and drug administration. I did one at Yale university in Connecticut. And then I crossed the pond to the university of Birmingham, where I worked at the Henry Wellcome building for NMR. And not long after I got that, that post, that final post I got an interview here at Warwick for a permanent job, so I of course jumped on it. And I've been here for the last 16 years.

Bo: Wow. That's amazing. What's the highlight of that journey for you?

Ann: I really valued traveling around. I think if you decide to stay in academia and do postdocs, they're a really great opportunity to travel around. Uh, kind of see the world. Obviously I stayed in the states for most of that time, but, it was not hard at all to come over here to the UK and my husband's actually from the

UK. So this was a move he definitely supported. So I think it's, it's the travel and the meeting of so many different people from all different backgrounds.

Bo: Amazing, and tell us where you're currently working on.

Ann: Working on a variety of different things. I'll start with research. I absolutely love doing research. If I have time for it. But I'm currently working with my research group on projects related to protein biophysics.

The the word chemistry is not in that by the way. So we're very much at the biological end of things, compared to other colleagues in the department, and we study proteins and receptors that are key players in the immune response and in anti-microbial resistance. So we study things that might trigger antibody production.

For example, in cells called B cells and cells called T-cells. We also study designed proteins. So we like to try our hand at making new things and also natural proteins that respond to features of biological membranes. So these biological membranes are really my passion. And I suppose I don't know why. But I even hear the word membrane and I get excited and it's really strange. Aside from research, I'm working currently on our departments Athena Swan application, outlining our progress on improving equality, diversity and inclusion in the department, and really more broadly in chemistry. So that's what I'm working on right now, Bo

Bo: That is a lot. That is a lot. And both of those areas are innovating, they're changing things. What is innovation to you and how do you define this term?

Ann: That's a really excellent question because I think the term innovation is bandied about quite a lot. And I sat down and thought about what do I think innovation is? Um, I came up with probably a really silly answer, but innovation to me is connecting dots that have not been previously connected before.

So taking concepts across disciplines. These could be things like physics and philosophy or math and food science, and linking really theories together in a new way that solves a problem that allows us to do something better, or that allows us to increase our understanding of a process. So that was a long-winded way of saying what innovation means to me.

Bo: I love it. It's beautiful. I'm now sitting here wondering, does the diversity work in any way impact your research or vice versa? Do membranes and diversity go together?

Ann: Well, I'd like to think so. Actually, a lot of women that I really admire in science also work in this field. So I, for some reason, this sort of organization of proteins and molecules at a membrane. is really appealing to me, and it's appealing to a lot of women that I admire. I think this is a way of, of sorting processes out and joining things together that might not normally be next to each other, say, in a cell. Um, and I guess that's really how I've never really thought about it. Um, yes, possibly.

I think diversity for me sprung out of my own experience really, um, and being a champion for diversity and inclusion sprung out of my own lived experience. It wasn't something I sought out. It was something that I just could not participate in any longer. So that's really where that came from.

Bo: Yeah. And how you found that journey as well, because that work is difficult. Isn't it? Um, what's been your experience so far.

Ann: Oh man,

Bo: is like, this could be another episode, right? Just in itself.

Ann: Let's talk about that. My experience has been that I think a lot of people have really good intentions. But the word unconscious, or the phrase unconscious bias is real. And, you know, I think it needs to be acknowledged as something that's very real. It's not a training course or a box ticking exercise.

This is a real thing. And even I have unconscious bias and I really try to stamp it out, but it takes work. Takes a lot of work to help people to understand what the benefit of having a diverse workforce and a diverse student population, what those benefits are. They're strong. They're real, but we have a long way to go.

Bo: Yeah, absolutely. I guess one of the things that are connecting research, diversity work, chemistry, innovation is perhaps creativity, right? We need creativity for all of those things. How do you stay creative and where do you look for ideas? Whether that's for the diversity work or for the research?

Ann: Oh, gosh, uh, I stay creative by listening to people, um, to students, listening to my colleagues, listening to other scientists and educators. I also read and listen to presentations and talks outside my field of specialty. So astronomy

philosophy, even articles on equality can help me think of things in a different way. So creativity is one of the key, really enjoyable things I get from scientific research. It's highly creative and I don't know if people, you know, especially younger researchers really appreciate how creative you can be in research. And that's kinda my creative outlet, even when it's coming to making figures for a paper to best illustrate a concept or a rationale. I find that I can spend hours on this and get really, really deep enjoyment out of that.

Bo: I love that. Just wanted to briefly touch on interdisciplinarity. It got me reflecting on that as you were talking. I think sometimes we are so attached to our own way of doing things on our own viewpoint.

I think you are so interdisciplinary, your research is so interdisciplinary. Have you experienced challenges working in those interdisciplinary spaces? Particularly from other colleagues, is that conventional, is that now appreciated, recognized?

Ann: Yeah. I mean interdisciplinarity is a real buzzword and has been for 15 years. The strength of crossing disciplines and understanding how to communicate across disciplines. I think people are getting better and better at that, but I would say that there's still a lot of work that's very siloed. Focused. And I think we need both. Because progress comes from deep understanding within a very, very narrow range. And it also comes from a kind of very shallow understanding. I hate the word shallow. I wish I could come up with a better one.

Bo: Surface?

Maybe.

Ann: Surface understanding across multiple disciplines, because that allows you to connect concepts. And even now at my ripe old age of, I'm not going to say, a woman never tells, um, I'm still connecting concepts that I feel like I should have connected 20 years ago, at the start of my education, but, you know, those kinds of moments come from being interdisciplinary and listening across disciplines.

Bo: Yeah, that's beautiful. My next question is the one that always makes definitely our students uncomfortable is the one on failure. Tell us about something that you've tried, failed, but actually it taught you something really invaluable.

Ann: Yeah. Um, well, first of all, for all the students that might be listening to this, this happens to me on an almost daily basis. I fail so regularly that it's hard to give just one example. And I don't say this in a pessimistic way. This is the nature of my job. So as a researcher, I do a lot of writing of papers, grant applications. And this work is thoroughly reviewed by experts. So sometimes that leads to rejection. Often times it leads to rejection, at least in the first round. So I've had papers and grant proposals that have been rejected. And early in my career, this, you know, to be honest, this would destroy me.

It would wipe out a whole weekend. I would be just questioning everything about whether or not I should have written that, if I'm good enough. But talking to colleagues was really useful because once you've been around for a while, you get really thick skin, you get used to this. In every single case, these comments and criticisms need to be seen as an opportunity. In all cases, they lead to improvement of the work. And in many cases they've led to a complete refinement in how me and my group do our science really. How we look at our data, when we decide it's good enough, that all comes from trial and error and a lot of rejection. So that kind of leads me on to the concept of resilience.

And I think resilience is the most important character trait a young person can develop in themselves. Really looking at a situation and seeing the perspective and saying, you know, is this actually that bad? Is it the end of the world, as I used to think when I'd get rejected papers? No, it's not. And you will understand that.

So why not just accept that? Because if you can master this early, there's just no limit to what you can achieve because you'll be fearless. So, so that's my experience with failure is quite significant. Here I am.

Bo: I love it. Any advice or reflection on how to grow that skill? How to start reflecting on your resilience?

Ann: I think talking to other people. Communication's been so stifled over the last 18 months and I tell my personal tutees, I tell other students, you know, our students in my research group, just talk, open up a bit. Everyone puts on a very brave face and might still be afraid to talk about that whole concept of failure. And, you know, one conversation can transform your thinking. Someone will say something in just the right way that really clicks with you. So talking about this honestly and early is I think really important.

Bo: Yeah, that's beautiful. We're recording at the time of the pandemic, we're learning to exist in this blended world, which is a little bit messy. Um, within all of that what are you excited about right now?

Ann: Well, I'm excited about the return to normal, although it's really exhausting me right now,

Bo: Yes.

Ann: You know, uh, having to get in my car and go places a lot more than I used to. I'm excited about the return to normal though. I'm watching my daughter start high school

Bo: Amazing.

Ann: You know, growing and learning and she's very excited.

So, you know, I need to be as well. I'm also excited about the students being here. I walked down the science Concourse the other day, and I saw the Warwick tabletop games and role-playing society and they were meeting and there was just tons of students in there playing games. And I've noticed that society in the past. But, oh my gosh, I was so surprised at the effect it had on me. I just wanted to give everybody a big hug and say, thank you so much being here. Um, so seeing students is really exciting to me right now.

Bo: Oh, absolutely. If you see us overexcited, then be afraid. We are just excited about being back.

Ann: If we're, if we're smiling, you know, a little bit oddly at you, it's only because we're just can't believe that we're seeing all these faces around and this place has been so quiet and kind of strange for the last 18 months. So it's been, it's just so great to see everybody back.

Bo: Absolutely agree. And I'm wondering, you know, I've already asked you about advice on failure, but what is your key learning or top piece of advice, or it could be a couple of things, of course, that you might like to pass on to anyone listening?

Ann: That's a great question. Uh, so I guess one thing that I see. I'm a senior tutor in the department. And I have been for a couple years now. And the key thing I like to tell students that I don't even wait for them to ask me anymore that you have a right to be here. So trust in your abilities and help those who are

struggling to trust theirs. Really trying to develop a community of people who feel like they belong, I think that's a key piece of advice. And the advice is that you need to understand that you have a right to be here. Just trust that. And I'll tell you anytime I get a chance. But if you see others and there's just so many students who will be sitting in a lecture feeling like they don't belong and somehow they got here by a fluke. It's not true. So that would be my piece of advice.

Bo: I love it. I'm also wondering, given all the diversity work you do, and the amount of championing you're doing for women in chemistry. Is there any advice or wisdom that you'd like to give specifically to women in the department, women in chemistry?

Ann: Probably be the same exact piece of it advice, that you have a right to be here. And even though you might not see as many women at the very top of the structure, we are here and it is definitely a great place. It's a great job for a woman to do. There's just not many at the moment, at least in chemistry and a lot of the sciences. There's definitely a lot of work to be done to get more women to stay in science. So I guess that all starts with the piece of advice that, you know, you need to trust your right to be here.

Bo: We're at the start of the academic year, which you know is exciting, but also it feels daunting because there's still such a long journey to go.

Ann: Yeah. Yeah.

Bo: What's your hope for this academic year?

Ann: I suppose people kind of, re-establishing their connection with the place, developing our community again. I know you've done some great work on Online resources to try to bring people together. And I just want to see that strengthen both in the student population, across our undergraduates and our post-graduate students and our early career researchers and across our staff.

So really just establishing again, our community because we have a great department and, you know, there's some really great people here. So I just want to see more, more of them

Bo: Yeah.

Ann: to see, see more things happening, where we get together.

Bo: Yeah, absolutely. And Ann, how can our listeners connect with you and your work? Where can they expect to see you within their experience in the department?

Ann: Well, I have an office on the fifth floor of chemistry. If anyone wants to come and knock on my door. I think I'm allowed to have one person in the office now with me, for the COVID restrictions, I'm also on Twitter @ Dr. N M Dixon. I can also be reached on email. I have a website on the chemistry department web pages where most of my publications are, if they want to connect to my work and look at the kinds of stuff we do. I think I have a variety of different ways people can reach out and contact me. As far as seeing me, this term I'm not teaching a huge amount because we're in the final push for the Athena Swan submission. But I will be teaching in term two and term three, and I teach across several year groups and I'm also a senior tutor, so I'll be reachable.

Bo: Lovely. Ann, thank you so much for taking the time. I've really enjoyed this conversation. You have done so much for the women in the department. Thank you so much. I hope it won't be an overstatement to thank you also on behalf of every woman in the department for the work that you are doing,

Ann: Oh, thank you so much. Thanks so much. It's an absolute pleasure.