

Pathways (Warwick Chem)

[00:00:00] **Bo:** Hello everyone and welcome to Pathways, the Warwick Chemistry podcast. I'm your cohost, Dr. Bo Kelestyn and I'm Matt Taylor.

So Matt let's talk about pathways. What is it, how did it come about and how did you come up with a name?

[00:00:30] **Matt:** So pathways, I think the general vision behind pathways is that academics and people who are very successful, it's often perceived that they've gotten there without tripping up or having many failures, that are lucky to get there. When in reality it's very difficult. And a lot of these people do experience failures, setbacks, and having to push through them.

It being a chemistry podcast we thought it would be quite a good [00:01:00] idea to kind of model the name after something. So people who like physical chemistry might have seen how a mechanistic pathways can kind of happen. So in the sense that you can get more entropically stable states, right.

And you want to get there, so everyone wants to get to success, but there's always that barrier, that activation energy that you have to overcome. And we thought it was very symbolic of what a lot of people have to do. We have to push through that, that initial hurdle to try and reach the goals that we want to get to.

And so the, the name pathways came to be.

[00:01:37] **Bo:** I think it was also a nice analogy and a very easy name to understand for the non chemists in the department, including myself. And I absolutely agree with you. I think, you know, where you and I met in the middle is this passion for sharing different stories and helping people understand that everyone has a different journey and a different [00:02:00] pathway that is riddled with failure.

And I think having been in the department for a few years now, and the number of times we raised the topic of failure or imposter syndrome, or people struggling in some way while studying, particularly where that's influenced by someone else's success and the incredible success of some of the academics in the department.

It's really just about democratizing that journey and showing people that everyone's gone through a similar and indeed is still going through similar kind of challenges, doubts, issues, you know, wellbeing issues as well. And I think innovation angle is also an interesting one for me, from the point of view of the module that we've got in the department, innovation one-on-one, but also.

The amount of research and innovation that goes in that in the department that we often take for granted. I mean, Matt, even your research that you are doing is so interesting and interdisciplinary, like what's been your journey to innovation and your attitudes to [00:03:00] innovation as a term that you could participate in as a student and as a doctoral researcher.

[00:03:05] **Matt:** So for those that don't know me or my work, I work with David Fox. We're working on using AI methods for drug discovery. At the minute, my current PhD project is on using machine learning models to kind of bottle up Fox's intuition on synthesis, which is a, quite a fun project.

I have the luxury of defending that. Well, giving my first year report viva soon. But It's a, it's quite challenging. Right? I think it's quite easy to sit back and try and ride on the easy stuff. So for me, it was quite a tough move. Moving from synthetic chemistry, organic chemistry to AI. But I think the crucial thing was is that for me, the biggest contribution I could make was through my coding skills.

Using the [00:04:00] combination of maths, AI, and computer science and chemistry, and actually utilizing what I've learned during my degree in a novel way. I mean, it's, it's relatively new. You have synthetic chemistry going back a few hundred, a couple of hundred years, right? Like in the modern sense, obviously it's been there since time began, but I think innovation requires that kind of a mindset that you have to push yourself because innovation doesn't come from doing easy things. Right. It will always be a challenge. If you don't meet failures, you're not really innovating in my opinion.

[00:04:38] **Bo:** Yeah.

[00:04:38] **Matt:** I guess that was kind of the goal of the podcast, right? Yeah, We're going to be talking with innovators who have had to overcome a lot of these difficulties.

And with these difficulties comes a lot of growth. And like you were saying with having to deal with how you perceive yourself and your skillset, it can be quite challenging at times. [00:05:00] I'm sure everyone in research knows those days where you're just pulling your hair out, nothing's working and you're really

questioning what you're doing at the time. I think it's important to really highlight it's the same outside of science, right? It's not exclusive. It's that we need to understand that everyone's experiencing these things and sharing these stories is really crucial and understanding that we're not going through these things alone.

And these difficulties aren't exclusive to us. They're not even modern. People have been experiencing these feelings since humans and started walking on this planet. So that I think the aim, right, is to try and share these stories and give comfort, guidance and have a more open dialogue about the challenges within research.

[00:05:50] **Bo:** Yeah, absolutely. And I love and full heartedly support this community aspect of the podcast. Because again, it's so easy [00:06:00] to struggle or harbor particular feelings on your own and thinking you're the only one, but actually there's so much healing and comfort, like you said, and lots of learning in coming together and discussing these topics and sharing the stories, and hearing from people that are a little bit further ahead on their journey.

I think hearing from people that we see in one light, as academics as maybe teachers or personal tutors or people that hold a particular role in the department, it's easy to see them as just that title or just that identity of an academic. Whereas actually, you know, we very easily forget that, behind Matt's AI research, there's just Matt and his life, and behind Bo and innovation and student experience, there's her dog and the rest of her life and other things that are happening right?

Because of just, I guess the pace of life, it's very easy for us to just see each other as one dimensional. Whereas there's so many different stories that we could [00:07:00] be sharing. And I think particularly colleagues that are creating all this innovation that doesn't always necessarily make it into the teaching or the student experience side that we see.

I think it's so important to just bring each other closer, bring the community together around this podcast to just show the human side of things and just say, oh, Hey, this academic or this teacher, here's their story. I know them a little bit more personally now through this podcast. And perhaps this could be an interesting conversation starter, whether that's with the academic themselves or another member of staff in the department or with another student. I hope that people will be in a queue to get a coffee and be like, oh, Hey, have you heard this podcast? You know, how are you doing? And what did you think of it? I

hope that it also becomes a conversation starter for us as a community and brings us together around some of these really important topics.

[00:07:58] **Matt:** Yeah, absolutely. I like the idea [00:08:00] of people going into, you know, real, modern coffee lounge and chatting about podcast. It feels very hipster.

[00:08:07] **Bo:** I know. I know, but you know what? This is, this is it. I think with this podcast, I remember when I started the podcast for the innovation one-on-one module, which is part of the origin story of this podcast. I used to think my goodness chemistry is just going to boo me out the mention of the word podcast.

Um, but you know, it was so successful and I think it's exactly because people want to hear from those colleagues and those people that might not necessarily seem approachable or easy to reach or, someone that will be accessible to an undergraduate student or whatever. So I was pleasantly surprised by how much people in chemistry actually liked it.

So I hope that this experiment that you and I are concocting here will be a successful one.

[00:08:50] **Matt:** Yeah, I think that's the beauty of the podcasting medium. Right. The way you're imagining this discussion about the podcast is very real because I [00:09:00] chatted with a few of my friends about the innovation one at one module. And I think the main takeaway I had was just how, despite how, like good the episodes were and how wonderful it was.

I think the. The real big highlight was the pure form of the media. Just, there's no visual distractions, everything's communicated and you can just sit back and absorb it. And I think that's the beauty of it is that you really do focus on the message and there's no need for anything more than just the audio. It's fantastic.

But, yeah, you're absolutely right. This is about humans for humans, right? Made by a couple of humans.

[00:09:41] **Bo:** We've gone meta. So Matt, I know one of the ambitions that we also having, hopefully if the podcast grows and this sort of pilot season is a success, is to go external. Who would you love to see in this podcast? What would you love to do with it? Let's imagine that it just completely explodes and [00:10:00] a super successful. What would we do with it?

[00:10:02] **Matt:** I don't know. Could have anyone on here? Um, no, I think it'd be really interesting to see, to get a wider perspective outside of Warwick. Right? Cause the thing is if you kind of browse LinkedIn, like hope the professors don't see you looking at their LinkedIn,

[00:10:21] **Bo:** Dammit this profile views.

[00:10:23] **Matt:** yeah, the profile is exactly, but I think the real interesting point is that all of these professors have been all over the place.

Right. At least for like a purely academic journey, it does require being in lots of places, doing lots of different things and I think for the first season, I think it's good to keep it close to home but what we'll find is that everyone from Warwick will be moving around in all these different directions, right.

And trying to capture a few of those directions outside of Warwick it could be, be really good. I'm doing my PhD, part-time at Warrick. So I'm based in [00:11:00] Cambridge but coming out of Warwick and kind of going into the big wide world I've seen, I meet so many different people from so many different places these days. It's really interesting all the journeys that people have taken and hearing about these things. So, in terms of guests, I think there's a few people I personally like to have on the podcast.

I think passing love to the physical chemists, the inorganic chemists around here and I think as well as that, try and see if we can get some industrial or commercial based scientists, because I think it's very easy to be very insular within a university. Right. We see academics, they are people we should be looking up to. But in reality, there's so many more role models and these people who are innovating on a commercial level and making products for real world people and how they made these journeys, how they struggled. The thing that always fascinates me is look at [00:12:00] anywhere, right? So I'm sat in a meeting room and I can look at the table, what it's made of. And I look at the color and that must've been designed by human beings who must have had difficulties.

Material was designed, the texture was designed the paint was designed. sometimes I just like look at my phone and I can't even bear to think about how much effort and human involvement it required to produce something like this. And I think that happens within academia, but equally these things would never be in my hand without the industrial folk.

So I think that'd be really good. I'm going to see if I can make use of some of the biotech people in Cambridge and the tech people. There's loads of people and the same with you. What about you? Anybody you want to get on?

[00:12:46] **Bo:** Yeah. I mean the innovation one one-on-one one podcast it's already got some really amazing people. So maybe this is a quick shout out to the module. But I'd also love as part of pathways to bring [00:13:00] back people who finished, who graduated. Bring back our alumni, people who've experienced the department even just a year ago, you know, are already on their own journeys, are already experiencing their own pathways.

And I think it would be amazing to bring back people who were in our shoes or in the shoes of our listeners just a few years ago. To show them what's possible within the first year, within the first few years. But also show them what's impossible and kind of what they've learned as part of that process.

Because I think very often we put so much pressure on ourselves because we are operating on assumptions and because someone had said something or the parents have said something and that's the career we choose. And I think it would be really amazing to bring back the stories of those that are experiencing thing right now, and are dealing with the beauty of what's happening out there in the industry, but also with the challenges, particularly post pandemic, and how people created their own careers and where there are [00:14:00] now. So I think for me, it would be also working with our brilliant alumni and seeing how people are using their degree out in the real world and what they're learning from that experience.

[00:14:11] **Matt:** Yeah, absolutely. I think that's really interesting. I think it kind of comes into the pathways things, right? Uh, all these people are on different points in that pathway. Um, and you can look more long range with the academics and you can look more short range with the recent graduates.

I think it's really interesting. I think I'd love to catch up with some people that I met in first year that graduated or only met a couple of times and see how they're doing what they're up to cause I feel like for a good portion of the listeners of this podcast, the alumni will be really interesting to hear about.

I know for me, going out into the big wide world felt scary, you know.

No, there's no arguing. You come out of the uni bubble and then you're in the big wide world, and then you have all your responsibilities and [00:15:00] all these things you have to do. And so it's a big paradigm shift.

And I think that's, what's valuable about it. Getting insight into all these steps, we can see where we want to be, where we want our final state to be. Successful innovators. And see what our next steps might be with the alumni and then find some people in between, people who are on slightly different paths to us.

[00:15:23] **Bo:** Yeah. And I guess that's great that you mentioned it because I think one thing to say is that it's not going to be just about chemistry careers or just about chemistry. To be honest, I don't think the podcast will have much to do with chemistry per se. I think it's important to highlight the diversity as well. Not just for diversity sake, but again, to help people understand these different pathways and what's possible, and sometimes inspire and point people in direction of careers, they haven't even thought about, you know, like I find this whole idea of the jobs that younger people will be having don't even exist just yet.

You know? And sometimes it's because we don't know [00:16:00] they exist. We don't know what we don't know. The more diverse, we can make this podcast, the more we can inspire people with different pathways, with different possibilities.

[00:16:09] **Matt:** Yeah, absolutely. It's exactly what happened with me. during my undergrad didn't know about applying machine learning and all of these AI techniques to chemistry. And here I am, I was never expecting it during my undergrad at all. I would never have guessed. I ended up doing what I do. But you know, I kind of was enlightened to a path.

I saw that it'd be a really good fit for me. And it has been, it's been really great. And I think this is exactly the thing, sharing the fact that there are a number of paths that people can go down and giving some insight on how you can go down those paths and what to do, what to avoid. There's so many aspects to your journey, to where you want to be.

And that's what we're going to try and capture.

[00:16:58] **Bo:** Yeah, one other [00:17:00] thing that I guess we should talk about is this idea of co-creation, which we love in the department. You know, the role the students play and how much collaboration is going on between staff and students in the department to create better teaching, create better learning, to create better student experience.

And I guess this podcast is another example of that. A member of staff and a student coming together to create the podcast. But I also want to invite people to

engage with this resource in a way that is useful for them. But of course, we also want to hear. Firstly suggestions on the topics that people would like to see discussed, suggestions on the people and the stories they'd like to see highlighted here and celebrated here.

So I guess what I'm trying to say is that this podcast is also an invitation to create these pathways with us. If a particular episode is resonating with you or a particular topic is [00:18:00] surprising or sticking or challenging, you know, whatever reaction is provoking, let us know.

We'd love to hear how useful, how interesting or not interesting this is because this season one slash zero is a bit of a pilot, a bit of an experiment. And we want to do something different. I mean, I don't believe there is another chemistry department in the UK that has a podcast. I might be wrong, but let's create it together.

Matt as a former student, how important was co-creation for you? And what would be your message to the community lessening and in terms of engagement and co-creation of pathways.

[00:18:36] **Matt:** Yeah, I, I feel like co-creation during my undergrad was so valuable. I've worked with helping the, the labs recently. I joined my undergrad, I helped shaped some of the labs and teaching and part ChemSoc when I was back with them and helping with conferences and all these things. I think it's very easy to enjoy [00:19:00] taking what people have made. But I think there's real value in the building yourself. And the thing I've realized, especially over the last couple of years, is that helping shape these things around you and helping build them it's if you do small bits, and everyone does small bits, it makes for a really great project. So in the same way that you can get involved with telling us about what you think is great and who you want to hear from, or what kind of pathways you want to hear about, feel free to make your own projects.

[00:19:36] **Bo:** Exactly. No, I love that. And, you know, just to add to your point about diversity, that's, partly what you described is innovation as well. Right? Because the way I like to think of innovation is that combining existing things to create something new and so combining different ideas that already might be there but you suddenly bring two, three things that haven't been brought in together previously, [00:20:00] and you've got something completely new. So the more ideas that we have, the better, the more input we have from you, the better. And we're also learning. I mean, none of us are podcasting pros. We've got some skills, but we're not doing this for a living.

So I guess we want to learn as well and we want to make this better. So do keep in touch and let us know how we're doing and whether this is useful.

The way we're gonna run pathways in term one is we're going to release an episode every two weeks. So after you've listened to this episode zero, please go ahead and check out episode one.

And episode two will be released in two weeks time. It coincides with the release of lab chat, which is our amazing newsletter. So you will never miss it. Whenever lab chat is out, you'll know that the next episode of pathways is out too. And we gonna kick the podcast off in this first episode with professor Mike Ward, who's our head of department. It's very exciting to be starting the podcast with him because he's of course [00:21:00] the leader of this community and has always been so open and so caring to the student body. So I know we will have a lot of lessons to learn from him and a lot of reassurance hearing his pathway. So do make sure that you check out that podcast and keep an eye out on new episodes.

This is it from us on this episode zero, which just introduced pathways to you where he came from. What's our vision for it. What's the hope for it and what to expect. We are your co-hosts Dr. Bo Kelestyn and Matthew Taylor. And we are excited to take you on this journey with us.

Thanks for listening. And we can't wait to see you or hear you, or you will hear us very soon.