00;00;08;05 - 00;00;29;27

Katie O’Connor

Hello. You are listening to Microbe Talk, the podcast by the Microbiology Society. I'm Katie, the Policy and Engagement Officer at the Society, and this episode is the next in our series of conversations on collaboration. So for this episode, I was lucky enough to meet Sir Paul Nurse, who has worked to advance the field of microbiology for over 30 years.

00;00;30;10 - 00;00;51;15

Katie O’Connor

He's been the president of the Royal Society, he's held various positions within research organisations all over the world, and he won the most prestigious award in the world, the Nobel Prize, for his discovery of key regulators in the cell cycle. He has received over 70 honorary degrees and is an avid advocate for policies that support and enrich science.

00;00;52;24 - 00;01;24;03

Katie O’Connor

Now, Paul is currently the director of the Francis Crick Institute. The Francis Crick Institute is the UK flagship for discovery research in biomedicine, and the Crick's mission is Discovery without Boundaries. So this means that they really champion collaboration and co-working. So Paul is an expert on collaboration and it was a real pleasure to talk to him about why it's so important in science, especially considering the UK has now rejoined Horizon Europe, the EU's funding program for research innovation, which reopens doors to international partnership.

00;01;24;03 - 00;01;47;13

Katie O’Connor

We also spoke about the role of academic societies in encouraging collaboration within the scientific community. It was a pleasure to meet Paul and I hope you enjoyed this episode of Microbe Talk.

00;01;47;19 - 00;02;03;17

Katie O’Connor

So thank you so much for joining us today. I know you're really busy, so it really means a lot that you've given us your time and thank you for hosting us in the Francis Crick Institute. It's great to be in such an iconic venue, especially when we're talking about collaboration and the Crick is all about embracing interdisciplinary working and collaborative working. So firstly, I just wanted to ask what it's like to oversee such a diverse, collaborative portfolio of science.

00;02;03;24 - 00;02;37;24

Sir Paul Nurse

Of course many researchers and research institutions talk about collaboration, but actually promoting it is quite difficult. And what we've done at the Crick and is a bit unusual and it's different, for example, from most or probably all universities, is we abolished departments and divisions so we don't have a a department based on a particular discipline like microbiology or whatever.

00;02;38;07 - 00;03;07;07

Sir Paul Nurse

And this was for a very deliberate reason because having departments puts in barriers. So that was one thing we did. The second thing we did is we gave the offices for group leaders a very small office so that they would have to come out of their offices and go into a sort of communal area in the in the middle of the building on each floor with the notion of just meeting people whilst there chatting there.

00;03;07;07 - 00;03;38;19

Sir Paul Nurse

And I quite often work out there for the same reason. And the third thing is that we set up interest groups which are discipline based, but we allow group leaders and the people who work in the groups to join as many interest groups as they like. And perhaps the final one, I know I said that was the final one, but there's another one, is that we set up very strong technical cores which serve the entire institute.

00;03;38;27 - 00;03;52;22

Sir Paul Nurse

So they're not found in a particular department or a particular group, they're shared amongst everybody. So once again, it's a sort of collaborative and sharing culture so critical to how we operate.

00;03;53;21 - 00;04;04;20

Katie O'Connor

And do you think that's worked well then having those spaces where people have to come and speak to each other and kind of forcing scientists to interact with each other? Do you think that's been a good way of encouraging collaboration?

00;04;04;22 - 00;04;27;17

Sir Paul Nurse

Yes, we get positive, extremely positive feedback over it. Yes, we've seen a dramatic increase in people working together, both interacting together, just talking, which is part of collaboration. It isn't always joint work, but also in joint work. I mean, it is simply gone through the roof compared with the founding institutes because we sort of merged three institutes together.

00;04;27;17 - 00;04;48;29

Sir Paul Nurse

So it's very different from the original institute. So that's really worked quite well and as well I if I ask people, they say, yes, they like it and I do a lot of asking of that sort. So I would say overall, yes, it is working.

00;04;49;15 - 00;05;11;06

Katie O'Connor

And I want to ask more specifically about your career. And so you've had a really rich career and you've worked for lots of different people in different organizations. And I was wondering if you had any examples that come to mind where you have worked collaboratively, either through Horizon or not, but with people internationally on projects and where it's been really successful to kind of collaborate with different researchers as well.

00;05;11;09 - 00;05;34;19

Sir Paul Nurse

I collaborate mainly by talking to other people, by interacting with them. I haven't actually collaborated experimentally, that is that we devise a project and I do something or my group does something and then somebody else contributes to that with their expertise and so on. I haven't done so much of that, but I think you could probably imagine this.

00;05;34;19 - 00;06;01;05

Sir Paul Nurse

I talk and talk and talk to people about what I do and I look upon that as collaboration. It might be better described as interaction, I suppose, and that's really, really important to me. But most of the time experimentally, I work within my lab, just occasionally when somebody has something that they've been doing and you asked me, is there examples.

00;06;01;05 - 00;06;29;16

Sir Paul Nurse

For one example was some years ago my lab identified master regulators of the cell cycle cyclin-dependent kinases and people worked on the Xenopus frog and on the same sort of problem. And

we worked with them to show, for example, that the same components were present in controlling the cell cycle in Xenopus frog. So that's one example of a collaboration.

00;06;29;16 - 00;06;35;25

Sir Paul Nurse

Absolutely. But I have to admit there's not very much of that. But there's lots and lots of interaction and talking.

00;06;36;23 - 00;06;47;20

Katie O'Connor

And have you noticed a kind of a shift towards more collaborative working throughout your career just in science in general? Like have you noticed that people are pushing towards collaborating more and doing more interdisciplinary working?

00;06;47;20 - 00;07;29;04

Sir Paul Nurse

What I've noticed is that we talk about it a lot more and people say that we should be doing it, and I'm not always sure that it's happening. But there's been a change in my lifetime when I started research, research groups were really quite small and we tended to sort of work more together for that reason. Then they got bigger and perhaps they got a bit more self-sufficient, but for absolutely certain to tackle difficult problems in the life sciences requires looking at a problem from many, many directions.

00;07;29;17 - 00;07;44;02

Sir Paul Nurse

And to look at that problem from many, many directions requires a wide range of perspectives that are much enhanced by interacting and talking and collaborating when that's going to be profitable.

00;07;45;09 - 00;08;02;21

Katie O'Connor

So I just wanted to ask you a little bit about Horizon. I know we've confirmed re-association now, but kind of throughout the delay, you were really outspoken about your strong belief we should be associating. And so firstly, how do you feel now that this has been confirmed? I'm guessing you feel quite relieved. And what are your thoughts on the association?

00;08;03;19 - 00;08;41;18

Sir Paul Nurse

Yes, I am greatly relieved and I was probably the most vocal in the public sphere, scientist over this issue. And the reason I cared so much about it is very simply stated, science is a very difficult intellectual endeavor. You have to draw on high quality people and resources, and you need to be able to fish in a big pool to find those. Working alone as a single country population of 60 million, compared with 350 million across all of Europe.

00;08;41;18 - 00;09;03;17

Sir Paul Nurse

I mean, it was a complete no brainer and that's why I pushed it so hard. And it took a long time, I think, largely because the prime minister was just more he was acting really like an accountant, just sort of adding up figures and saying, well, we could probably do all of this in-house. We don't have to involve other countries.

00;09;03;17 - 00;09;44;01

Sir Paul Nurse

It's probably partly ideological as well. And he simply did not understand the importance of interactions, collaboration, talking, pulling on expertise from a wide range of different countries, actually avoiding national jealousies and the like. When you think about doing things, I mean, because if you're, for example, deciding about grants and you got individuals coming from have over however many nations, it now is 27 different nation national things don't rise very much when you are in a grant committee within one country, then jealousies and so on are not uncommon.

00;09;44;11 - 00;10;05;10

Sir Paul Nurse

It's just a major step forward and I'm really so pleased and absolutely relieved about it. I have to say, I kept thinking we'd done it and then it would be kicked back again. Again and again. There were about three or four of those things. We also had a Plan B to deal with which Plan B was just invented as a negotiating trick.

00;10;05;10 - 00;10;14;02

Sir Paul Nurse

And I mean, it was so trivial really. I mean, just to have a negotiating thing like that, I was really rather cross about it.

00;10;14;14 - 00;10;28;03

Katie O'Connor

Yeah, because it seems like what people were most worried about losing wasn't the money, it was the collaborative opportunities and the networks of researchers. And so, yeah, at the Society as well, we were crossing our fingers for so long. So I think we're all really relieved that we finally re-associated.

00;10;28;06 - 00;10;58;24

Sir Paul Nurse

Yes, it's completely correct because let's just emphasize that it wasn't just the money because obviously we'd saved the money that we didn't put into Horizon Europe, but we are collaborating, talking, interacting and working with our colleagues. We produce better science. We have it assessed better. We can draw on better resources. Everything is positive, which as a medium sized country, not a small and medium sized country, we couldn't have delivered on our own.

00;10;59;03 - 00;11;24;07

Sir Paul Nurse

I often used to say the three major science research blocs in the world North America, the East, particularly based on China and Europe. And we were not part of our natural partners. I sometimes use the metaphor with floating off into the Northeast Atlantic, and it's very cold by ourselves, but it's all done now. Let's not whine about it anymore.

00;11;24;07 - 00;11;33;13

Sir Paul Nurse

It would have been better if we'd done it quicker, but we got it done. Now we have to make it work and we have to go back in there, get back to our colleagues and make it work.

00;11;33;22 - 00;11;53;07

Katie O'Connor

Yeah, I suppose looking forward, we're just trying to encourage our members to go for it and apply for Horizon funding and get involved because that's kind of the next step. All the people that have missed out now have the opportunity to get involved and so I was wondering what you might say to our listeners who might not feel confident enough to apply for Horizon funding or don't feel like it's for them.

00;11;53;20 - 00;12;16;23

Sir Paul Nurse

They should go for it. I mean, absolutely go for it, it is a little different from a national funding and some more forms to fill out, but the feedback you get, the decision making is better in my view,

about what should be funded. They can be bolder and sometimes I think, just go for it and set up the relationships.

00;12;17;00 - 00;12;35;04

Sir Paul Nurse

Sometimes you'll be collaborating with groups in Europe, sometimes it's just to fund your own group, but perhaps you are going to increase your chances of funding when they're pulling on a wider research expertise than we can deliver it in the UK alone.

00;12;35;16 - 00;12;55;12

Katie O'Connor

And I also just wanted to ask you, this is a slightly broader question, and so you've been very vocal about science policy issues, not just Horizon Europe. I know you also recently authored a review of R&D. Why do you think scientists should be vocal when it comes to policy issues and why do you think they should have the opportunity to feed into decision making?

00;12;55;21 - 00;13;24;20

Sir Paul Nurse

Well, science is a social activity. It's embedded in society. And sometimes my colleagues just don't fully recognize that we have to justify what we do to society. And so it's very important we participate in society. Now we also need to persuade society and political leaders that this is worth investing in. So there's a lot wrong there and we shouldn't be too arrogant about it.

00;13;24;20 - 00;14;02;21

Sir Paul Nurse

I mean, sometimes, for example, colleagues might say, well, why don't they just fund this like a cultural activity? You know, we're pursuing knowledge. And I say, Well, sure, but then we'd get the funding equivalent to a support for ballet or classical music. And I mean, we're hugely more demanding than that in terms of money. Society wants knowledge to improve the quality of lives, including how to drive the economy, all these things.

00;14;02;21 - 00;14;36;28

Sir Paul Nurse

What we should really be explaining and recognizing is that science is a spectrum, a range. And at the discovery end, it's very much bottom up and looks like culture because we're just pursuing our interests. And that actually is, you could say, describes my entire research career. As you get closer to

application, it comes top down and you identify targets to, you know, to produce a pharmaceutical or whatever.

00;14;37;06 - 00;15;07;11

Sir Paul Nurse

Often that's not fully understood. You change the way you work it. You go and go through the spectrum. So that way, discovery research is seen as an essential component of doing good for society as a whole, not only driving economic growth, but also protecting the environment, improving health and all other societal goods. Often improvements have that basis on science.

00;15;07;22 - 00;15;15;25

Sir Paul Nurse

So we need to make that case to our political leaders, the public as a whole. And that's the reason really why I'm trying to contribute to that.

00;15;16;15 - 00;15;44;26

Katie O'Connor

And that kind of leads quite nicely to the final question, which I wanted to ask you. So you've actively participated in scientific societies throughout your career, and I know you were president of the Royal Society. You've won Microbiology Society Awards and you've chaired Microbiology Society events. So I was just wondering why you think scientific societies are important, within science policy, but also more broadly, why you think scientists should join scientific societies and why do you think they're important?

00;15;45;07 - 00;16;22;11

Sir Paul Nurse

I think scientific societies, particularly in the UK, where they are particularly strong, I would say in certain disciplines, and I'm a microbiologist, I'm also a geneticist and cell biologist, and so I belong to a range of different societies that are really important because they are community activities, often working, as in the case of the microbiology, are often very effective, very cost effective as well, very supportive of younger colleagues, particularly graduate students and postdocs.

00;16;22;29 - 00;16;52;09

Sir Paul Nurse

And they provide a really high quality environment in which these disciplines can be pursued. And I would go as far as to say that the UK is the place which is best for this and a lot of contacts in and

working in the US and other countries and it really is very effective. It was very important for me when I was a graduate student and postdoc.

00;16;52;09 - 00;17;20;22

Sir Paul Nurse

I belong to a number of the societies and I speak at them. It's my first opportunity to speak and I always found that the most senior colleagues were very, very helpful. I've been president of one of the Genetics Society actually. I mean, 30, 40 years ago now, I think 30 years ago. And and I saw how people work for nothing, working for their colleagues, working for the community.

00;17;20;29 - 00;17;29;25

Sir Paul Nurse

I think they are a great thing. And and and the microbiology is only one of them. But I think that's very good indeed.

00;17;30;14 - 00;17;36;23

Katie O'Connor

Well, thank you so much. Thank you for your time. And thank you for hosting us today. It's just been an absolute pleasure to chat to you.

00;17;37;04 - 00;17;41;07

Sir Paul Nurse

Well, thank you for coming here and asking me questions.

00;17;43;24 - 00;18;04;03

Katie O'Connor

Thank you so much for listening to this episode of Microbe Talk. If you'd like to know more about Horizon Europe, you can read the full Society response to every association on the Microbiology Society website. Thanks again for listening and we'll see you next time.