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Episode name: Fiona Fox OBE, CEO of the Science Media Centre

People: Sir Andrew Pollard, Fiona Fox

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Andrew Pollard: Hello, my name is. Andrew Pollard. I’m director of the Oxford Vaccine Group at the University of Oxford. Welcome to our podcast series, the Oxford Colloquy: Trust in Science, bringing you the stories, facts, and people behind the science.

In this episode, I’m speaking with Fiona Fox OBE, who is the chief executive of the Science Media Centre, and who’s dedicated the last two decades of her life to improving science communication, to try and inform the public better and to make sure we scientists actually start talking.

Andrew Pollard: Fiona Fox OBE, honorary Fellow of the Royal Society and Chief Executive of the Science Media Centre. Welcome to our podcast.

Fiona Fox: Thank you. Thank you for inviting me.

Andrew Pollard: Well, it’s great to have you here, perhaps you could just begin by telling us what is the Science Media Centre and what does it do? We’ll go back into its history, but what is it doing today, what’s the purpose of it?

Fiona Fox: Oh, so we are an independent press office for the science that hits the headlines. So what we do every single day, what we’re doing today, yesterday, what we’ll do next week is try to find ways that we can improve the quality of science going into our news media, such that what comes out the other end and what the public see and hear and are talking about is to the best extent it can be good quality, measured and accurate evidence-based information.

Andrew Pollard: Fantastic. So where I’d like to start now then is, how you’ve ended up here. Where did everything start for you? I read you were born in Wales, so did you grow up in Wales...

Fiona Fox: Oh we go right back!

Andrew Pollard: Yeah, so did that sort of take you to some inspiration that took you into journalism and then eventually to science?

Fiona Fox: So I don't think there was anything about my growing up that made me want to go to journalism. And in fact, I'd been accepted to do politics in Leeds University and then suddenly had a change of heart, much to my mum's disgust because Leeds is a lovely campus university and she'd been and seen where I was going to live and I was like, none of that. I now want to go to a polytechnic, in central London with no accommodation, but which teaches journalism and had a really good reputation for journalism studies.

So that's how I ended up there, I just decided I wanted to work in organisations that had a kind of high media profile.

Andrew Pollard: And was the science anywhere in that, or, was it always about the writing and the communicating?

Fiona Fox: Absolutely nowhere. Honestly, it was nowhere. It's really interesting. I think I did one O level, as they were back then, in biology. Got a C, it was just about a pass. So there was no love of science, although what there was a love of was the news media and its potential to really impact public behaviour, public attitudes - a real belief in the power of journalism and at its best in journalism as a force for good to enhance democracy with good quality discussion. So I've always been a bit of an idealist about journalism.

So I dotted about, I worked for the Equal Opportunities Commission National Council for One Parent Families, Brook Advisory Centres that helped young people with contraception, abortion advice. But I ended up in an aid agency. That was my last job before science and it was just a bit - I loved it then, I've loved all my jobs - but it was a bit depressing towards the end. It was that the British media don't really care about the developing world.

This probably means something to you in terms of kind of, you know, vaccines for malaria and TB... If they're diseases that mostly appear in the developing world, the UK media's not very interested in them, and we could come back to that because actually, I think the pandemic probably shifted the dial a bit there in a positive way.

But, that was already clear to me working for CAFOD, which is a Catholic aid agency, was the decline in news interest. The only way I could get media interest was by taking, I took Ann Widdecombe to come to Africa once, I took a flood victim from Leeds Yorkshire to go and meet flood victims in Mozambique. You had to be very creative to force the British media.

So I was looking to move and at that time, which all makes sense, if you think of things like MMR and GM, it was the late 1990s. And they were the big issues. So I wasn't so much saying - do I want to go into science? What I was saying was - where can I make the most difference as a press officer? What is already in the media and it's not necessarily going well?

And there in front of my eyes was MMR, GM, designer babies, scientists playing God etc. And I thought, I really want to do this. And I'd always been very kind of pro-science and pro the scientific approach. So it appealed to me in lots of ways.

Andrew Pollard: So you mentioned a number of the stories which were in the headlines, and I guess the Science Media Centre was to an extent a reaction to that because there was some quite unfortunate reporting at the time, perhaps, which really didn't help the reporting of an evidence base to inform the public in a balanced way.

Fiona Fox: Oh, very much so. I mean, I could take any one of those but, let's just focus on GM because I think that was such a big story.

Andrew Pollard: So GM is around genetically modified crops, which became a very hot topic with campaign groups feeling we really shouldn't have genetically modified crops because they were somehow, particularly dangerous.

Fiona Fox: Yes and I think that this was, honestly, this was the really early days to the extent that, this was about two years into the big farm scale evaluation. So scientists, plant scientists, people who are now a bit more famous, but they were kind of burying away on this, a different kind of plant breeding.

And then the government said, right, we're interested in this and we will set up DEFRA, set up a four year field trials to assess for effectiveness. You know, would they progress and advances on previous gene editing technologies, but also were they in any way harmful to the environment or biodiversity? So a really good experiment to check does this work, and if it works at what price.

So it was that early in the development. And yet, the other thing that happened is that a couple of companies had actually introduced some products so that, they were, being produced in the States, but there was a GM flavour saver tomato puree paste, which was started to be - so the campaign groups, really media savvy groups like Greenpeace, Friends of the Earth, just decided to focus as a campaign against this technology. It played well with their focus groups, they like natural, not artificial. They don't like this idea of food being kind of messed up, so it was a good campaign for them. And then for whatever reason, the media as well loved it. So the Daily Mail actually had a little logo, called Frankenstein Foods, which they put on every article.

And getting back to your point, what was striking as well was, the consumer affairs journalists because of this angle of these being foods, because there was one product already in our supermarkets - it wasn't really a science story. So I think that the media coverage was pretty grim.

But I must say straight away, because I think this was a defining moment for the Science Media Centre was the scientists also were not engaging very effectively. It wasn't really in their culture, their tradition back then, they just weren't used to it, and they certainly weren't used to it in this very confrontational big row with the media hyping it up. And so, it was partly a result of the scientists not engaging. And that, for example, is why it was consumer affairs or political journalists or general news reporters.

One of the things we did very quickly was to try to make GM a science story that science specialist journalists and environment specialist journalists would cover on for their paper so that they'd stay at their news desk, this isn't a supermarket story, this is a science story. And that was the way we tackled it.

Andrew Pollard: I guess to some extent though, things have moved on, but we've not really reached a point where the balance of arguments is properly presented. The media, at least in the UK - certainly there's a very different stance in the United States - but from my perspective, going back to your sort of global point, these are crops which save people's lives in low income countries: drought resistant crops, pest resistant crops, which have an absolutely dramatic impact on people's lives and livelihoods. So, do you think that we failed in the communication around this still?

Fiona Fox: No, I'm more positive than that.

I agree with you that the stakes are very high. I really do. And I wouldn't be in this if I didn't believe that communicating science in the news media in a measured and accurate way matters. And I agree with you that the negative coverage for many years has had a real impact. I think if you, at one stage when they did polling, the supermarket said no to GM, they actually withdrew from selling it. Government said no.

There's a great bit in Alistair Campbell's diaries, which I came across a few years after we started, where Alistair walks into Tony Blair one morning, Alistair being his Tony Blair, the Prime Minister's main spin doctor, and says, Tony, will you stop talk being positive about GM crops? It's a vote loser. Let's not go there. Let the scientists do it. So, politicians were turning against them because the public were, and the public in poll were.

So now I would say the debate is completely different to them. I totally recognise what you're saying. There is still that kind of alarmist element around it. There are still negative stories, but the balance is now there. So you know, we hardly go for a few months without a positive story about GM crops or now genome edited crops, in the media covered by science journalists in the front pages of the media - so still as prominent as the anti stories.

So what I think now is that it's much more balanced. What we haven't done is won or prevailed. But it is completely different. Back in 2001, I don't think there were any positive stories. And we would walk into institutes and find out some of those things that publicly funded public interest, public good approaches, drought resistance, more nutritious food, you know, food that would help the environment by the way, it was grown. We told those stories and those stories did get coverage. They absolutely did.

And I would like to think these days that the public, certainly, when you do any polls about what are you most worried about or alarmed about, GM doesn't even appear. There isn't a public concern. If you ask them, do you want it versus natural food, people might say, we prefer our food to be natural, but it feels very different to me.

Andrew Pollard: And you mentioned also in your introductory comments about, the MMR vaccine, the measles, mumps rubella vaccine and autism, which at the birth of

the Science Media Centre, where you were going through a crisis there with some false information about an association between autism and MMR, which we know is not true.

But actually the media had been presenting it as a very nuanced argument, balanced argument with an equal weight in favour of each of those. Do you think that is something which we've dealt with adequately now? Certainly as a pediatrician it's a very different environment from 20 years ago, but, we are in the middle of a measles outbreak, Fiona.

Fiona Fox: Well indeed which is still the consequence, isn't it, of it. I understand that one of the reasons for that recent measles outbreak is that cohort of young people who weren't vaccinated around this time. So again, back to my point earlier about this. The cost of this, the price of this is high. You know, I know we didn't quite fall below herd immunity levels after the Andrew Wakefield paper, but we got perilously close.

So when we started, it was 2002. Wakefield's paper was in '99, but it was still, I think the legacy of it was still very strong. So people still were concerned about this link between MMR and autism, even though, as you say, the evidence was never there.

But there were also kind of spinoffs of that. So I remember people were worried about combination vaccines because Andrew Wakefield had said, if you have to have it at all, have three single jabs, which I don't even think were available on the NHS, but you could buy them privately. So suddenly all these people are saying, my baby's immune system can't cope with a vaccine with more than one jab in it. And, you know, all of these myths were being perpetuated. And so the first ever press briefing at the Science Media Centre was in October - so we opened in 2002 April, it was in October, and it was Adam Finn, Helen Bedford, and David Elliman talking about the science of the immune system. Because as you well know, Andy, most of the vaccines that were being worked on at the time were some kind of combination. So if the public really had absorbed that myth, then, the good news about new vaccines would've been greeted as bad news. So we ran that briefing. But do you know what, I had so many calls from people saying, you can't do this, Fiona because every time you mention MMR. You remind the public about the controversy.

But we knew that we had been set up to pioneer a more proactive approach where you inject science even into the most controversial subjects. But there was a lot lying on this briefing and I was so, so pleased because we have 18 national news journalists who came to our first briefing and they guess what? They quoted what the scientists said.

And I think that is one thing now, 22 years on, I feel very strongly about that. Whether you're going to prevail or not, you have to intervene. And science in the headlines is always a bit scary and is always not the most comfortable time for scientists to speak, but it's an opportunity. Science in the headlines also means people are worried, people are listening, you've got an engaged audience and they are listening.

Andrew Pollard: So coming back to that issue of the reluctant scientist. Scientists, one might argue, are probably best doing their science and being in the laboratory or

whatever. And perhaps it's your job and the job of journalists to communicate it rather than the scientists who really, that isn't their expertise of what they set out to do.

So in what way do you think the scientist's role needs to include engaging with the media and something which is not comfortable for most of us.

Fiona Fox: Yes, this is such a good question. This, I think, goes to the heart of what we are about. I remember Doug Turnbull and Mary Herbert and a group in Newcastle - the people who pioneered the mitochondrial DNA transfer known in the media as 'baby with three parents', which was a completely new way to offer parents who are carriers of this mitochondrial disease, a chance to have their own baby free from these diseases. Absolutely cutting edge, amazing science.

When I first met him, he was doing the research. He and Mary never did any interviews. They had, I've forgotten the name of the scientist in Newcastle - there's another scientist in Newcastle who does familial cancer, who did all their interviews for him, but he didn't work on mitochondrial DNA transfer. I was like, this is bonkers! Because they didn't assess themselves as media friendly. They didn't particularly want to do it anyway.

Ourselves and the Wellcome Trust, who funded the centre up in Newcastle, just chipped away at them and got them to sit in front of journalists and come and talk about their Nature paper. And this is your Nature paper. You have done this research. This other amazing media-friendly science communicator will not know the details of that paper. You have to do it. Not because they've been to media training or they're fantastic in front of a room of kids - that's great if you can do that - but actually because they are the best people to explain their science. And that's if you believe that expertise matters and people who study science are the people who know most about it.

So it's this combination and I would say one of my main aims when I started was - because people would say, oh no, the top scientists don't do media. You know, it's just the young ones who like going to science festivals and they are the popularisers. My aim was to change that. And I have to say Andy, people like you and Sarah Gilbert and you know, did not relish doing media, but at some really deep level, she and you and all the other people around the Oxford vaccine understood that no point in developing a vaccine if you couldn't go out there and communicate that. And I remember those early briefings with you, with your first results, totally open, totally honest, you know, describing what you had seen even before it had been published so that the journalists understood the complexities, the uncertainties... And I just felt like my job is done here, this caliber of scientists understanding that part of what it means to be a very good scientist is also to speak to journalists. That, to me, was a real achievement.

Not everyone has to do it. I've never had that view. I don't think everyone should be forced, but I do think certainly if people rule themselves out because they're senior and eminent, that's a terrible reason.

Andrew Pollard: I mean, I think in the example you've given, there's certainly, here in Oxford, there was a very strong sense that we were doing publicly funded research and

we had a duty to communicate. But thinking about that question of who communicates, makes me think about what is *true* and whether you actually get to that by engaging with scientists.

Now, I think the recent Coronavirus pandemic really emphasises that and there were lots of different voices with very different opinions and sometimes quite opposing voices, which you might argue at times is unhelpful for the public, who are seeing this sort of discourse, which doesn't really get you to an understanding of science or even perhaps, of what the truth is.

So how do you think we should better manage that as communicators, whether we're in science or perhaps it's the journalist's responsibility to some extent.

Fiona Fox: These are great questions. I was actually approached by some chap who had been brought into government to bring all the different kinds of science communicators in the pandemic together in some way. And he came and met me and said, is there any way you can stop your scientists disagreeing? Because we think, we have evidence that shows that a single clear public health message at a time of crisis like this is better.

Number one, I obviously said chance would be a fine thing! And I felt that, and I think a lot of other people felt that in the pandemic, this Boris Johnson line, "we're following *the* science, we are following this." We all knew there was no such thing as *THE* science. I mean, maybe on certain things like climate change, whether there's a strong scientific consensus, maybe you could talk about that; but you certainly couldn't talk about it in the early days of covid, this completely unknown virus.

So for us, that's not good science. And we also think, okay, for the government to have some clear public health messaging. I think that's fine. I think they have to kind of, you know, that SAGE we're giving their distilling the evidence and saying: on the one hand, face masks help with this, on the other hand, they're not that effective.

So SAGE were doing that. In the end, the government had to make a call and put out a message. But they are two distinct things and I don't like the merging. Scientists all disagree and there's massive uncertainty... And then the government has to come out with a position. But merging that and getting them all to have a message, I think is anti-science because science doesn't work that way.

I'll just give you one example though, where I think I can argue that I'm right and other people are wrong on this... I know you had to step out of JCVI meetings a lot, but when the question of childhood vaccination came up and you had to make a decision, JCVI had to make a decision and JCVI were looking at it and everybody was waiting. And also the CMOs were waiting, but were also having their discussion.

I remember speaking to a journalist... I had - let's put it like this - I was very good, but I'd had a bit of a lead from someone I knew at JCVI that they probably wouldn't make a clear recommendation to vaccinate children, because the role of JCVI was risk benefit on an individual basis, not on a public health basis.

And I said to the journalist, “What if JCVI said one thing, didn't strongly recommend vaccination, but the CMO said something different, what would happen?” And he said to me - that cannot happen. I said, “Oh, but what if it does happen?” “It cannot, it won't be allowed. Government won't allow it. They'll tell JCVI what to say, the public couldn't cope with that. That won't work.”

And that was really depressing to me because of course, both of those things are legitimate. Anyway, good news. Good news here. JCVI came out very clearly with their press briefing saying on the balance of risk and benefit, we are not making a strong recommendation, but we put this to the CMOs. Same day was it, or the next day, the CMOs of the Four Nations came out and said, thank you very much, JCVI, we understand what your remit is. We think on a broader public health, yes, children don't get it badly, therefore the risk benefit is not so strong. However, they go to school, they come home, they give it to their teachers, they give it to their parents who could be vulnerable. So we wanted to throw everything but the kitchen sink at this, so we recommend childhood vaccination. And that day on the television news, at 10 o'clock they did these vox pops where they go out and stop people in the street. What did you understand? And this pair of working class women in the North-East, that's where they always do vox pops with her kids in a buggy, saying, “Well, my understanding is that the vaccine advisory group said probably, you know, on the fence. But the CMOs want this to happen, so I will think about those things”

And I just thought, never underestimate public intelligence and sophistication to hear these things. The worst thing anyone could have done in that is to say, we need a single public health position, so we are going to tell JCVI what to do. That would've been a scandal that would've undermined trust in both JCVI and the government, but it didn't happen, and I think we should celebrate that.

Andrew Pollard: So JCVI is the committee that advises the government on the evidence behind vaccines and the CMO is the Chief Medical Officer.

So I think, the Science Media Centre has been criticised to some extent for where it does fit in the ecosystem, as being more of a PR agency - which has sort of negative connotations, or as a lobby group. How do you deal with that? Because you've got quite an altruistic view of the world about trying to make sure communication about science is better, but actually you've been quite criticised at times by people.

Fiona Fox: Yeah. So I think that the criticisms have been largely from science communication academics and science journalism academics. They worry that we are kind of feeding journalism. So a lot of what we do is issue quotes from leading scientists and then the journalists can copy and paste them because the journalists these days are very time poor. So we end up kind of being slightly a journalistic project.

So we will do some of what the journalists can't do, and I think understandably, journalism academics worry about that - that we are somehow making it okay for journalists to cut corners. And we are a press office for science. So we obviously have an agenda. It's not pro any particular technology, but it's pro science. It's pro the scientific method, and that is an agenda, even though it sounds like a good one to me,

but it is an agenda. So journalists should be wary of us, I think that is a legitimate criticism. Although I would say that the problems in journalism came first. We did look at journalism, and saw that they had to write sometimes three or four stories a day and would not be able to source, you know, five different third party experts who could give context on a particular study. So we definitely did see the weakness of journalism and helped there.

Andrew Pollard: Fiona, do you have tips for scientists who are thinking about engaging with the media? How should they approach that?

Fiona Fox: First, I'd say please do think about it. I think, at the moment, I feel possibly more than ever we live in a very polarised society. We live, as you were saying, in a society where everybody's opinion seems to matter and facts and truth. So there is something I think that scientists bring to society in terms of a kind of respect for evidence and facts, which means really society would benefit from hearing more from you. And you put it nicely when you talked about the kind of public responsibility as publicly funded scientists.

So I want to encourage scientists to do it. And we've had the experience over 22 years, we've had people who've never done it before who've come to the SMC, done a press briefing with us or given us a comment who have never looked back. They like doing it. They like to see, they give us a quote, then it appears in the national news the next day. They like to tell their parents, you know, that I made a difference. I got out into the national news media with something sensible and accurate. So it can be very rewarding I think for people.

My biggest tip, and I know this is the most self-serving thing I'm gonna say, but there is an army of science communications experts whose job is to support scientists to speak out. That's why we exist. We know the media. We know science communications and we can be that bridge. You were talking earlier, Andrew, about should it be the science communicators that do it? No, we shouldn't do it ourselves, but we certainly can be the bridge. So if you get a call from a journalist, perfectly all right to say, actually, can you give me half an hour to get back to you? And then phone the press office and say, who is this journalist? Are they reliable, are they responsible? Shall I talk to this individual? What would be your advice about how to do it? Or get the press officer, if it's a request for an interview, get the press officer to phone the program and say a colleague's just phoned to say you want to interview them, can you tell me who else is gonna be in the studio? Is this a debate between two sides or just hear or him on their own?

So use your science press office for that, every university has them. They'll be really good and have time to talk to you.

Andrew Pollard: And what stories should be presented because there's, certainly a risk that everyone then wants to be a communicator, and then there's just this barrage of news stories which have perhaps very small incremental information in them, but not big impacts that are important for the public.

And I'm thinking particularly, for example, over the whole of my life there've been endless stories about cancer being cured, but often those are new discoveries that will never turn into anything or are going to take 30 or 40 years to go somewhere. Is that distracting for the public so that they then lose trust in science because we're communicating the wrong things?

Fiona Fox: That's a really good question. And I could have done the whole podcast about that because actually I'd say, we especially kind of focus on crisis and controversy and supporting scientists to kind of respond. But if we go back to what should scientists be putting out there - a hundred percent what you've just said. I mean, we would argue strongly against big press releases on very preliminary research. Never publicise a phase one or a phase two clinical trial. Really never, and this is where we come into conflict with quite a few people, please don't publicise your abstract at your conference at a cancer conference. I'm sure it's wonderful. You should go there. You should do a major speech about it. You should get all your colleagues in cancer research to advise you and support you. Don't do a press release, it's an abstract at a conference. It may never even get to being a trial or to being published in a journal.

Just wait.

And I think that would be, that's a really strong message to us is it will only get to the public once. As you say, your cure for cancer or your cause of cancer, that data won't get 20 bites at the cherry. It'll probably only get one. So wait until it's the best version of itself. That's better for you. It's better for the public. You know, do a pre-print fine, but don't publicise. Go to a conference, fine. Publicise it when it's published in a journal, under embargo, it's been peer reviewed. And then you'll have an army of press offices, the journal press office will help you, the university, the Science Media Centre... And you'll be then getting that information out to the wider public when your science is at its best.

So I just think that's a rule of thumb. The university press officers now are great at saying, look, this is not gonna be a big news story and nor should it be. But I've got, for example, cancer vaccines or something like that. This is really cutting edge. It's really new. We don't yet know whether they'll work, but why don't we do a feature article on that where we get Tom Whipple from The Times, or Jane Kirby from PA to come and spend a day with you. There are lots of ways that you can get your science out, even when it's not finished. But when it's kind of going to everybody and it's gonna be in the Mail, the Sun, on Sky News... At that stage, please don't publicise your preliminary preprint, no matter how excited you are about it. Wait.

Andrew Pollard: And Fiona, what excites you about the future? What do you see next, either for the Science Media Centre or just from science?

Fiona Fox: Oh gosh. I mean, in science so much, obviously the technologies will get us to net zero. That fascinates me. The science of climate change is well established, and it's not that it's boring, we still need to hear it, but it's kind of well recognised.

Now that moves on to a different group of scientists who are devising the technologies. Is it carbon capture? Is it cloud seeding? Is it this, is it that? And there, you know, there's lots of different approaches - so I think that will be really important.

The rows still happen. There's a big row about ultra processed foods at the minute with a lot of the best scientists saying, look, we need better evidence. We know that foods that are high in fat, salt and sugars are implicated with ill health. But some of the claims being made out there that everything that's made in a factory is gonna kill you are not well evidence. So we need to design better trials, to show us.

I'll tell you what, it's not gonna be boring. And, the good news is, during the pandemic, one of the points a lot of journalists made to me were, you know, the editor would walk around the office before the pandemic, not know who the health journalist was, not know who the science editor was. And now their status in the newsroom has really risen. The editors like science stories. They like health stories, they like environment stories. And the specialist reporter now feels there will be more front pages, there'll be more media interest in science, which is a fantastic opportunity.

Andrew Pollard: Fiona Fox, chief Executive of the Science Media Centre. Thank you for speaking with us on the podcast, advising us to stay in our science lanes. Supporting scientists and supporting science journalists.

Fiona Fox: Thank you. Enjoyed it.

Andrew Pollard: *That was the Oxford Colloquy Trust in science, bringing you the stories, people and facts behind the science.*

So you might be wondering what is a colloquy? A colloquy is a discourse or conversation, and I hope you'll agree that's what we've been having.