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**Rachel Cox (RC):** Imagine the research world in ten years’ time. What does it look like? What skills will researchers need in the future?

**Claire Doffegnies (CD):** This is the [Taylor & Francis](https://taylorandfrancis.com/) and [Vitae](https://www.vitae.ac.uk/) podcast on developing your research career. I’m Claire Doffegnies from Taylor & Francis.

**RC:** And I’m Rachel Cox from Vitae.

And in this podcast we’ll be talking about the researcher of the future.

We’ll be considering questions such as: what will the biggest challenges be to the way in which research is conducted?

**Michael Matlosz (MM)***:* Far too often in the past science communication has not been communication, it’s been information.

**RC:** What kinds of jobs will researchers be going on to do after their PhD?

**Gabby Silberman (GS):** What falls on our shoulders is to make sure that they imagine those roles beyond just academic research.

**RC:** And what skills should researchers be developing now, to make sure that they’re ready for this research future?

**Margaux Kersschot (MK):** Digital skills will definitely be useful but also everything related to open science, open access…these kind of things.

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**GS:**I’m Gabby Silberman, I’m Director General at the [Barcelona Institute of Science and Technology](https://bist.eu/) in Barcelona, Spain.

**MM***:* My name is Michael Matlosz and I’m the President of [EuroScience](https://www.euroscience.org/), the European Association of Researchers.

**CD:** What skills do you think will be required of researchers of the future?

**MM:**One single skill I believe: the ability to dialogue, be curious about what other people are doing, while maintaining your own specificity is what we really need.

**GS:** I totally agree with that but I would expand that we also need to increase our skill in communicating what we do and how we do it to the general population…I think that decision makers and society in general needs to have access to what we do at a level that they can understand and [so] they can connect the dots of why it is important to support the scientific and the research enterprise.

**MM:**Far too often in the past science communication has not been communication, it’s been information - a one-way communication…and so we need to find mechanisms for science communication that are two-way mechanisms, where the scientific communities are not only explaining what they’re doing, but they’re also listening to what others think about what they’re doing. So, this is quite a challenge and I think that the better communicators we can be by interacting, not only in speaking but also in listening, the better we will be in getting our message through - that this *is* of value to society, to do this kind of activity.

**RC:** What do you think is the role or perception of researchers in society today?

**MM:**What is perhaps somewhat unfortunate is that the general public is more interested in science under the label of expertise, much rather than science under the label of an activity using a scientific method. Now obviously, science as expertise means I am providing you an answer to a question, [whereas] science as a method of activity and research means we are looking at something we are not sure about, we are putting a lot of value on uncertainty…on debate…on contradiction…on checking the results of others…[and] of thinking about alternative hypotheses. And since society is asking very often for scientific truth in the sense of judicial truth, it’s not so easy for scientists to respond to that when their day-to-day activity is not that activity. Their day-to-day activity is the other one…which is scientific uncertainty, controversial approaches to different hypotheses, re-checking the work of other people to see whether it’s compatible with current theories…and this leads to doubt, and this leads to an ambivalence in the way the scientists are allowed to speak.

**RC:** How do you imagine this might change in the future?

**MM:**I remember when I was younger we would see people on television commercials - you know in lab coats, to show that they were scientists…people don’t do that anymore because it actually creates in public opinion - to a certain extent, some suspicion. And so, I think that this means that scientists are now coming down from their pedestal and going into society…that’s probably not a bad thing.

**GS:**I would add to that, that you know - this coming into society, it’s forced by the current over production of PhDs and post-docs. Over production in the sense that not every researcher that would train will end up in an academic research position…there’s just not enough of them…and so a large percentage - in some cases eighty, ninety-percent of those that have been trained, have gotten the PhD [or] even done a post-doc, will end up in a position within society being productive…and that I think this is an altogether good thing. What falls on our shoulder is to make sure that they imagine those roles beyond just academic research.

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**Inger Mewburn (IM)**: So my name is Inger Mewburn**,** I’m an Associate Professor at the [Australian National University](https://www.anu.edu.au/) in Canberra. My role title is Director of research training and I run the [Thesis Whisperer](https://thesiswhisperer.com/) blog.

**CD:** What role do you think digital technology plays in academic life? And can you give us a few examples as well of how digital technology is used in academia?

**IM:**Digital technology is used for both producing research and for publishing it. I think that it’s evolved massively in the last thirty years, you know, so it’s ubiquitous throughout all of academic life.

So in publishing of course our journals moved online some time ago, but blogging has become a really huge [and] popular way of disseminating research and talking to each other as a community…and sharing knowledge. And then we’ve got social media, obviously, and academics picking up and circulating their ideas on social media and also just having conversations…and I’ve met a lot of people at the conference here that I have known on Twitter for over ten years and it’s the first time we’ve met in person. It’s just like picking up a conversation that you had with someone last week…so it creates a kind of intimacy.

In my own research work I am very big on every kind of digital tool that I can use and the latest thing I’ve been doing a lot of is machine learning, so that’s pretty hardcore - big data…and learning and using a lot of new tools is a constant challenge.

**CD:** Do you think that all researchers should be embracing digital?

**IM:** Yes and no. I’ve been for my sins tasked with teaching people social media (you can’t see the air quotes there) but, I hate teaching people social media…it creates so much fear and uncertainty and doubt and I do have sympathies for women of color, women talking about controversial topics, men talking about controversial topics, people who really attract the troll brigade…I’ve never had that problem, but people who do controversial research attract a certain amount of attention that’s really wearisome and so the risk of doxing and all that kind of thing, I can really understand why people avoid it. Definitely when you look at it statistically, if you do research and you write papers - say in conventional journals, and you want them to be read you need to be on social media, and a lot of people don’t like the pressure…but it’s just pragmatic to accept that there’s certain sort of niche marketing problem that is around academia and that social media is well-adapted to that.

**CD:** What are some of the new ways in which you see researchers communicating their results using digital technology?

**IM:** YouTube’s huge…YouTube your papers – I get much more readership through my YouTube videos of my papers. There are many ways you can do it, you can just simply talk over a PowerPoint deck - there’s plenty of screen capture software. You can have yourself recorded at a conference, universities offer studios and sometimes [will] help you make videos, and you can make them look quite professional really easily, at quite low-cost…and we’re moving into the YouTube generation.

**CD:** What are your tips for academic blogging?

**IM:** So interestingly I haven’t formally announced this, that I’m slowing the Thesis Whisperer down, it’s ten years now and my tip for it is: you have to have absolute processes and procedures in place… you’ve got to run it like and learn from our friends who run journals, and our friends who run newspapers…they have processes that keep the blogging going, so if you want to have something as professional as the Thesis Whisperer has been it’s a lot of investment in times and systems and expertise. Other than that I’m happy with everything I’ve done actually…I’ve made lots of mistakes, I’ve published things that have been controversial, I’ve published things where I’ve said things that people have really pulled me up on and questioned and that’s actually been really valuable to me, so I wouldn’t change that because the times that people have questioned whether I’ve culturally appropriated something or whether that I’m speaking about a minority in a way that is appropriate or not, that’s been really good for me and for my own development of my work. So that’s a risk you take as a blogger, and I think it’s worth taking.

**CD:** What skills should researchers be developing now to make sure they’re ready for the research future?

**IM:**If I was starting my PhD now, I would learn to program. Anything…anything that teaches you the logic of programming…I think being able to make your own digital tools…even just to be able to like make a spreadsheet do what you want, the logic, the logic of programming is a really valuable thing to know how to do and I think just to have that skill would be amazing. It would make you work so much faster.

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**MK:** Hi my name is Margaux Kersschot, I’m a Policy Advisor at the Doctoral School from the University of Antwerp and I’m also in the advisory board of the European Council of Doctoral Candidates and Junior Researchers.

**CD:** So there’s increasing discussion at the moment around the societal impact of research, and making a difference beyond academia. So can you explain what this means and also why it’s important?

**MK:**Yes so let me just give an example of the way in which research can have an impact. So yesterday there was one of the competitors on the [Three Minute Thesis® competition](https://www.vitae.ac.uk/events/three-minute-thesis-competition)and he explained that doing exercise before breakfast increases health benefits a lot, and so any random person who wants to work on health and thinks “okay, I should do some exercise” might have an interest in knowing this and think “okay, instead of just doing it in the evening or after breakfast… I’ll go running before breakfast.” So that’s just a very simple way in which knowing results of research can help societal actors…can help people in their daily lives.

**RC:** Do you have any tips for researchers looking to work with businesses or industry?

**MK:**Yes so I think first of all have a look at your research project, and is there a way you can include collaborations with business or industry? It can be really in any type of way…it can be just by contacting them for information…interviewing them - if you’re in more social sciences and humanities…by looking in terms of product development…basically it can be anything but just looking and exploring what’s your research about and how could you include business in that. It could also be, for example, by including them in your doctoral advisory committee if you have one depending on the country in which you are doing your PhD…or just having them as an external advisor for the project and these kind of things…and then also just engaging with them - going to career events where they present their companies…these kind of thing I think can be very useful.

**CD:** And what about researchers wanting to make a difference to policy?

**MK:**Yes so for them I would definitely advise them to get organized into associations of researchers, and become a member of their national association or start one, or it can also be at a university level, and then really just form a community and start monitoring the policies in your institution, start looking at what’s happening at the national level and become a member of [Eurodoc](http://www.eurodoc.net/) which is monitoring policy at the European level…and that’s really a way that you can get into policy work because you’re kind of an interest organization for a good cause…so it’s… it’s okay. And you’re working on research in higher education policy and then you can switch to other policies if you’re interested…so it could be on trade or on regulations of the product you’re developing on pharmaceuticals…anything basically…but that’s the way to start.

**RC:** Can you tell us a bit about the different career paths that are available to researchers and also how do you think those are going to change in the future?

**MK:**All career paths are basically available to researchers, because they all have very valuable skill sets.

The typical careers are either to do something with the research method and the skills that you’ve gained, so really becoming a researcher in any type of organization…it can be for a government…it can be for an advocacy organization or for a company, so you can do the research type of work. You can also move into things that are close to your topic…you can also just think about “what are your passions?”

**CD:** Are there particular skills that you think researchers should look to develop now to make them ready for the future?

**MK:**Digital skills will definitely be useful, but also everything related to open science, open access…these kind of things…and then there are the interrelational skills…the communication and the critical thinking…they will definitely be important…and as a last one…project management, that has also been identified as one of the skills that they could develop more.

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**CD:** That’s all for today, thank you for listening, we’ll see you here next time.

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**Kaitlyn Regehr (KR):** I’d like to tell you about a new podcast series: How Researchers Changed the World. Supported by Taylor & Francis, the series highlights the real-world impact and the people in stories behind great research. To find out more, go to [howresearchers.com](HowResearchers.com) or search ‘How Researchers Changed the World’ on your podcast provider.