

SIOUXSIE WILES

Smart in pink



Scientist and science communicator Dr Siouxsie Wiles has become a household figure during New Zealand's Covid-19 lockdown. The 'pink-haired science lady', Siouxsie became a regular presence in the media, applying her expertise to help Kiwis understand the scientific evidence as it came to light, and to navigate through the response. Her collaboration with artist Toby Morris led to the creation of infographics that have been shared around the globe.

Dr Siouxsie Wiles MNZM is a scientist: an associate professor at the University of Auckland. As a researcher she specialises in the study of infectious diseases, and in bioluminescence — the production and emission of light by living organisms. As an academic, her typical work life is divided between research, teaching and service.

'I came back to work in January determined to kick the year off with good habits,' says Siouxsie. 'I've never been very good at saying no to things, but I wanted a schedule that would let me manage my time better. So I blocked out time for each of my commitments, and set aside blocks of uninterrupted time to allow me to really think deeply about our research without distractions. That didn't last!'

As Covid-19 started to gain momentum around the globe — China and Italy were dominating the headlines — Siouxsie started to field questions from people who were trying to work out whether it was going to land here. Soon 'thinking time' became 'reading

time', staying across the volumes of information that were being pumped out about the emerging coronavirus pandemic.

'Early on I was trying to find out the status of our testing, trying to make connections with people in different areas to upskill myself and understand what barriers we might be facing.'

Through her own research, Siouxsie has a deep knowledge of microbiology and the transmission of infection. By her own admission, building the knowledge base needed to be helpful during the crisis she saw emerging was a joint effort, enabled by technology. 'There are many, many things I'm not an expert in. Social media allowed me to reach out to experts in other fields around the globe, and tap into their knowledge. I'd message and say "I've just read this paper: can you explain this bit to me?"'

On 24 January 2020, Siouxsie wrote her first column about 'Wuhan coronavirus' for New Zealand online magazine *The Spinoff*, exploring the potential origins of the virus later known as Covid-19. From there, she published a new article almost daily throughout the crisis.

'The more I got involved in helping to explain Covid-19, the more I felt something was missing on social media. The idea of "flattening the curve" had started to take off, but nothing seemed to show how our actions were a part of being able to do it. I thought: "This isn't a bureaucratic thing, it's about teamwork — people have to do stuff!" I wanted to show people that we were all in this together — we can do something.'

Siouxsie had an idea. 'I've always loved Toby Morris's style. I have the book he illustrated about the Treaty [of Waitangi] on my shelf, and I've just always felt that we share the same values. He's done these beautiful graphics about terrible things like inequality, and he makes you feel like you're inside them. He was the first person I thought of.'

Siouxsie wrote to Toby Manhire, editor at *The Spinoff*, and asked if Morris would be available. The two were connected, and a phone call launched a collaboration that has reached millions around the world. Their first animation — *Flatten the Curve* — was published under a Creative Commons licence on 9 March. For context, at that time New Zealand had just six confirmed cases of Covid-19.

The graphic spread (appropriately) virally on social media. It found its way to Wikipedia; someone even created a software tool that would translate the graphic into any language on demand.

'I have really mixed feelings about *Flatten the Curve* looking back on it,' confesses Siouxsie. 'It went massive so fast — shared all over the world — but flattening the curve is all about trying to make sure you don't overwhelm your health system. It's not about stopping people getting sick. The more we came to understand about the nasty effects of the virus, the clearer it was that we needed to actually stop this thing in its tracks.'

The duo's second collaboration — *Stop the Spread*, based on a graphic in the medical journal *Lancet* — addressed that issue. A later collaboration, a

graphic explaining the exponential spread of the virus, broke the records set by *Flatten the Curve*, reaching people all over the world. When things get a little less hectic, Siouxsie plans to write an academic paper around the reach and impact of the duo's science communication work, so that the insights gained can, in turn, be added to the public health toolkit.

If there's an underlying theme to Siouxsie's work, and her work with Toby, it is about giving people agency: helping people to feel empowered. And Siouxsie is deeply frustrated with others who move counter to that mission.

'This pandemic has shown us the best and worst of science. On the one hand, we have incredible science being done, and being shared so quickly. On the other, we've had a whole lot of people jump on the bandwagon — people who aren't experts, but who see an opportunity to further their careers by being published in prestigious academic journals. Their voices can get in the way of those who are giving real, expert advice. It's academic profiteering, and it's wrong.'

She adds: 'If there's one thing this crisis has shown, it's how utterly crucial it is that journalists, that policy-makers and that scientists have access to the latest research. Under our current model before Covid, they have not. Academics might have access if their university had a subscription to a particular journal, but the policy-maker wouldn't, doctors wouldn't, nurses wouldn't and journalists wouldn't. Through the crisis there's been this movement towards more open and rapid



access to research, and I really hope we don't lose that. If there's one bright thing out of all this, I hope it's that people will see how broken the current academic publishing model is, and that we get some real change.'

Widely and loudly celebrated for her work during the pandemic, nevertheless Wiles has been criticised by some, particularly on social media, for 'politicising' science — bringing too much of a lens (in terms of New Zealand party politics) to her commentary.

'People have been led to believe that science is somehow "values-free", and it's not. Just the very fact of who gets to stay in science, how research is funded, who gets to ask the questions — all of those things are about "who is there", and our values always play into that. The research itself is really clear that there are massive inequalities

in academia. My approach is to give people an idea of who I am, of what my values are, and so what lens I approach evidence through.'

At the start, Siouxsie and Toby helped us understand the seriousness of the threat posed by Covid-19. Later, to understand the impact of the extraordinary measures Kiwis were being asked to endure through lockdown. A search on Wikipedia shows that their work has been translated into Portuguese, Bosnian, Indonesian and many more languages. I suspect Siouxsie and Toby's remarkable collaboration will form an enduring part of our memory of this time of crisis.