Duke-NUS researchers at the front line of COVID-19

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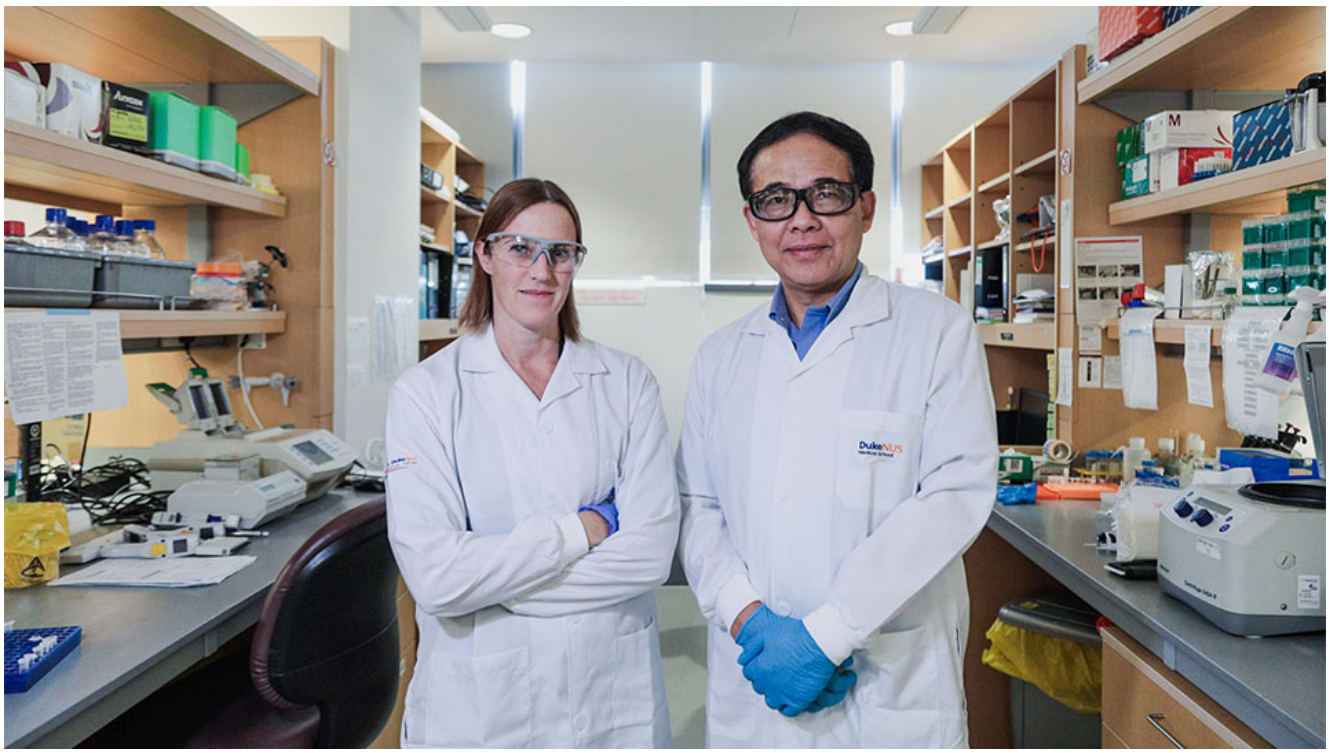

Asst Prof Anderson (left) and Prof Wang (right) discuss the challenges and successes they have had fighting the COVID-19 pandemic

In less than a week after Singapore confirmed its first case of COVID-19, the hardworking scientists at Duke-NUS Medical School (http://www.duke-nus.edu.sg/) cultured the virus. Soon after, they developed a serological test to detect the presence of coronavirus antibodies. Today, they are still working tirelessly to stem the spread of this global pandemic.

The researchers leading the teams behind these achievements are Professor Wang Linfa, Director of the Programme in Emerging Infectious Diseases at Duke-NUS (http://www.duke-nus.edu.sg/eid), and Assistant Professor Danielle Anderson, the Scientific Director of the Duke-NUS ABSL3 Laboratory. Prof Wang and Asst Prof Anderson recently spoke about the breakthroughs and challenges they have faced in tackling COVID-19.

Q: With this pandemic, what has been the biggest success in combatting it?

Asst Prof Anderson: The first big breakthrough for us would be how as a team, we established a link between two COVID-19 clusters in Singapore via serological testing on two cases (http://www.channelnewsasia.com/news/singapore/covid19-coronavirus-duke-nus-antibody-tests-12469184). In addition to this contact tracing, a major success has been how effectively Singapore has quarantined patients. It's an example to the rest of the world as a good benchmark for containing the spread.

Prof Wang: Exactly. Before we have a vaccine, the most critical thing is early detection and quarantine. In that regard, the world is looking at Singapore as a shining example.

Outside of Singapore, I would really give praise to the Coalition for Epidemic Preparedness Innovations (CEPI) (http://cepi.net/), an international non-profit organisation whose main mission is to quickly develop vaccines. It's too early to predict the success, but it's already racing through vaccine development with an unprecedented speed..

Q: How has COVID-19 affected your workload?

Asst Prof Anderson: We're working at the national level and it's not something that we're used to doing because we usually function as an independent lab. But as we have this facility available, we're fortunate to be able to help out at the national level and even international level.

Prof Wang: In addition to these levels in the scientific context, we're working with the media to educate the public. I've been working in this field for 25 years, and this outbreak response is very different from anything I've done before. With previous outbreaks, I mainly worked at the scientific level.

Q: Do you think this crisis has promoted collaboration between Singaporean researchers?

Asst Prof Anderson: Seeing how all the ministries and the different institutes have worked together during this crisis is truly impressive. We have a meeting once a week, and we openly share every piece of data that we have. It has definitely sparked collaboration — it's not a competition at all.

Prof Wang: Without any doubt, this has been a collaborative effort. Before we had the first confirmed cases, the government had already prepared an inter-ministerial taskforce at the highest level. We had a national research coordinating meeting just one day before we had the first confirmed cases.

Q: What's the most challenging part of tackling this pandemic?

Asst Prof Anderson: We are dealing with many hospitals and they're all on different schedules. Some hospitals see patients in the morning, others see them later in the day. At the start of this crisis, I would be at Singapore General Hospital at 7am to meet the clinicians. We then would test samples for COVID-19 until finishing at midnight. And I would do the same thing again the next day.

Prof Wang: Luckily, I'm a scientist, not a politician. Politicians have the real challenge of making decisions not only for disease control, but also for schools, tourism, and the economy.

Q: What's the next stage?

Asst Prof Anderson: Around the world, I think it will get worse before it gets better. But we're still in limbo to see what will happen next.

Prof Wang: In my research with Asst Prof Anderson, we are working towards making our serological test deployable internationally. We can share our experience, and also export the reagent to help other people, especially those in developing nations.

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