

LAURA CONOUR: Just being out of our house now requires such an incredible presence of mind. And that can be really fatiguing, to always be thinking about, “Am I being as safe as I possibly can?” And so just the fact that all of my staff is able to come in and do such a great job in taking care of the animals right now with all of that going on is just simply amazing.

INTERVIEWER: Hello, Princeton. This spring, with coronavirus disrupting everything, we're reaching out to Princetonians from all walks of life to hear how we're continuing our collective and personal missions, how we're staying together at a distance, and how so many of us are working to serve the wider world. In this episode of “We Roar,” we're joined by the University's top veterinarian. She describes her team's unflagging care for campus laboratory animals under pandemic conditions.

LAURA CONOUR: My name's Laura Conour, and I'm the attending veterinarian for the University, as well as the executive director for Laboratory Animal Resources. So that department is the group that cares for the research animals on campus.

We have a number of different species. So just to give you kind of an indication of the types of animals we have on campus, and we have mainly mice and rats, a little over 11,000 mice and rats on campus. We have right now about, hmm, 850 tanks of zebrafish.

We have 12 sugar gliders, which are like flying squirrels. We actually have a breeding colony of those. We have African striped mice, which is the only breeding colony — the only colony of those mice in the U.S. And we also have macaques. We have 17 macaques right now, which are Old World monkeys that we use for neuroscience research within PNI [the Princeton Neuroscience Institute].

I'm on campus right now pretty much every day of the work week. And it's pretty deserted, which we would expect with the stoppage of research here at the University during the governor's “shelter in place” order. Our staff is considered essential to the operations of the University, and so they've all been at work.

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The biggest preparation for us was continuity of care. So we've put a lot of extra practices in place to protect my staff of technicians — animal care technicians and veterinary technicians — that are caring for these animals daily. So when we work with animals, we wear hair bonnets, a lot like the medical care staff does; disposable gowns; shoe covers; gloves; masks; and when we work with monkeys, the macaques, we use face shields as well.

So the reason why we need to be so conscientious of wearing our personal protective equipment with the research animals is that — the biggest thing is that macaques are actually — have been proven to be susceptible to the coronavirus that's causing COVID-19. And so there's a very big risk of researchers or animal care staff that could be ill from the coronavirus or could be positive infecting our macaque population. And there's early indications right now that they would experience the same type of clinical disease — in terms of respiratory issues, high fever — they would experience that just like humans do. And so we need to protect our macaque population.

The governor's order did come down to take tallies of masks and gloves and equipment that's

needed by health care. We did contribute to that tally. And the University has donated a significant amount of personal protective equipment back to the state for immediate health care needs. Because of the value of our macaque population, and because it's considered to be essential to research, we did retain enough supplies to get us through what we consider the crisis period.

Then additionally, you know, we do know for a fact that mice and rats are not susceptible to coronavirus, because they don't carry the receptor that the virus binds to. But we want to keep our — “the biosecurity” is how we reference it — of our animal population healthy. And we want to keep them pretty much status quo.

And one of the things that you'll hear often in my business is that if you're — to value the life of a research animal, we need to have healthy animals — animals that aren't stressed — in order to get good data from them. And so we take biosecurity very seriously. And rodents can be susceptible to certain bacterial organisms we carry on our skin. So we protect them as well.

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What we're finding in terms of research that's ongoing throughout the world right now, for COVID-19 and the SARS 2 coronavirus, is that non-human primates — macaques and a number of different species — are actually proving to be pretty much the most essential animal model in terms of doing research on this coronavirus. Some of the early papers and studies that are coming out, one of the first studies in the Journal of Virology did confirm that macaques, baboons and marmosets seem to all carry the receptor that this virus binds to. And additionally, another paper that came out in a pre-publication forum took macaques and infected them actually with the COVID-19 coronavirus, and they developed a respiratory syndrome. They recovered. And then they tried to infect them again, and they found that they were unable to do that.

So that's great, in term of — from the perspective that, for those individuals that have become infected with COVID-19, in all likelihood cannot become sick or re-infected again with this particular strain. There's thought that infection with the coronavirus that causes SARS provides some type of protective immunity against the coronavirus that causes COVID-19.

And there's still a lot of work to be done.

I read an article today that Tulane Regional Primate Center is actually — has infected macaques, as well as African green monkeys, with the coronavirus that causes COVID-19. And they're actually actively working on vaccines and treatments. So this is progressing really fast. I still think we're months, probably over a year, away from a vaccine. But I have to say the wheels of research are really turning on this.

And then, the reality is, is that, we haven't come to a place in science where we can avoid the use of animals in terms of discovery and research. It's just not possible yet. There are great strides moving in that direction. And there are a lot of refinements, so that animals don't have to be used as much. But we're a long way from that.

So to value the lives of those animals, we need — we just need to continue to take care of them, so they're here and they're continuing to serve for the greater good. And I think COVID-19 is an

example of that. If it were not for our abilities to do research in macaques, we would not be doing the research we're doing for vaccines and treatments.

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I think if I had to give one brief message to the Princeton community, at the University and the community in general, the message I want to give, especially right now when research has stopped, is that: We're still here. And yes, this pandemic is about COVID-19 and the crisis that all of us as humans are experiencing. But my group, we're still coming in. And we're still “keeping on keeping on.”

And we're here. And we're doing what needs to be done. And I just want everybody to know that.

I think that's a really important message: Our researchers really care for these animals. These animals are incredibly valuable. And it makes me want to get to the top of the building and just shout it out so everybody can hear it.

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