Dr. Dana Scott

Behind The Mask

November 15, 2021

Barr: Good afternoon. Today is November 15, 2021. My name is Gabrielle Barr, and I'm the archivist at the Office of NIH History and Stetten Museum. Today I have the pleasure of speaking to Dr. Dana Scott. Dr. Scott is an investigator in the Rocky Mountain Laboratories Veterinary Branch, which is part of the National Institute of Allergy and Infectious Diseases (NIAID). Today he is going to be speaking about the many COVID-19 research initiatives that he has been part of. Thank you very much for being with me.

Scott: You're welcome. Thanks for having me.

Barr: When did you come to NIH and how did you become interested in veterinary research as opposed to other types of veterinary paths such as traditional veterinarians that care for dogs and cats?

Scott: It's a long story, but I'll keep it short. I came to the Rocky Mountain Laboratories in January 2011, and that was immediately after I had retired from the United States Army. I served in the Army for 22 years. I actually started as what people typically think of as a veterinarian here in Montana—I'm born and raised in Montana. I started as a cowboy vet after vet school at Washington State. I worked mostly with cattle and horses. We had a significant drought in the late 1980s, so I needed another occupation. I thought the Army would do that temporarily, but it turned into more than temporary. While I was in the Army, I trained as a pathologist at the Armed Forces Institute of Pathology. That's what really shifted me from animal pet care veterinary work to research. For the rest of my career, I worked in biological defense for the Department of the Army, either as a pathologist or in policy or public health in places like Iraq and Afghanistan.

Barr: That's quite a lot of different aspects of your career. You were stationed throughout the world?

Scott: Yeah. I've worked in a number of countries. My longest deployments were during the Global War on Terror. My last tour was during the surge in 2005 and 2006, and I served as a public health officer for all of what's called Central Command—so 19 countries. Iraq and Afghanistan were the majors, but all the way from Kazakhstan on the Chinese border into North Africa—Djibouti and Somalia. We covered that entire area. I've also worked in Europe and parts of Asia.

Barr: Wow. What are your responsibilities in your role at Rocky Mountain Laboratories? Do you have an area of expertise?

Scott: I wear a lot of hats. I'm currently serving as the chief of the Rocky Mountain Veterinary Branch. In that position, my first obligation is to animal welfare for the animal research community. Of course, that supports the community broadly here. Secondly, I work with the scientists directly as a pathologist, and that is my area of expertise. I'm boarded in veterinary surgical and anatomic pathology, and I work as a comparative pathologist—so comparing human disease to the animal models to help identify differences and similarities in how those animal models respond to infectious disease. The Rocky Mountain Veterinary Branch is the largest group on campus here—almost 60 employees. We ensure the health of the animals that arrive here, because healthy animals make for better, more consistent, and

repeatable research. Animal research is heavily regulated, so we have a number of oversight committees and offices that look at how we run our program to ensure that everything is done according to the laws defined by the Animal Welfare Act and overseen by Public Health Service. All those things keep research going for us, ensure the health, safety, and welfare of the animals, and provide the resources to everyone here on campus. So, two hats—both directly involved in research, and then also providing for the animal program in general.

Barr: It seems like Rocky Mountain Laboratories does a lot of the research with larger animals—the non-human primates—and you all work with very infectious diseases—sometimes more than the Bethesda campus as it's so close to city life. Can you comment a little bit about that?

Scott: Sure. Here at Rocky Mountain Laboratory, we have high containment laboratories—both biosafety laboratories [BSL] 3 and 4, with 4 being the highest containment level possible. We work in positive pressure suits—called the "space suits"—and we work on diseases of high incidence, so Ebola, Nipah, Lassa fever. All those diseases have high fatality rates and no treatment available for them. Of course, that's what we're working for—to provide vaccines and treatments for those diseases. When COVID-19 hit, we were also tasked with a rapid response to infectious diseases that influence our country and countries abroad. Because we have those containment laboratories, we're able to very quickly take the virus in and keep ourselves safe and the community safe—and get started on the work right away. We do specialize in working with non-human primates, as they are generally the best model for looking at large aspects of what affects humans with these infectious diseases.

Barr: When and how did you first become involved in NIH's COVID-19 research, and what did you have to do to prepare on the veterinary end?

Scott: Almost as soon as COVID-19 was detected in China, and then verified as the cause of the pneumonia. We received the virus here at Rocky Mountain Laboratories very quickly—from the very beginning of the outbreak. We've had experience working with coronaviruses before. Earlier in my career, I worked with SARS-1 and then most recently we worked with the Middle Eastern Respiratory Syndrome (MERS), which is another coronaviral pneumonia. We had experience working with coronaviruses and we assumed similar models would work well with this one as well, so we had a starting point. Once we have the virus, we almost always try to put it in rodents or small animals to get an understanding, but in this case, because of the particular receptor that allows that virus to enter human cells, we couldn't use it on ordinary laboratory mice. It took a very specialized mouse that had the human receptor added to it, and those just weren't available at the early part of the outbreak. We did know that rhesus macaque monkeys were susceptible to SARS-1 and MERS—the Middle Eastern [Respiratory Syndrome] Virus. We very quickly transitioned to rhesus and found that indeed we could cause a disease in those animals that would allow us to begin to study how that virus worked with the basic biology and pathogenesis—how it caused disease. We could start to peel those layers of the onion back so that we could begin. Once we understood the basic biology of the virus, then we could begin to work on the vaccines and treatments—those sorts of things. That was our initial push—to identify an appropriate animal model to get reproducible disease, then move forward with understanding the basic biology, and then transition into therapeutics and vaccines to respond to what had obviously by then become a worldwide pandemic.

Barr: Can you talk about some of the other animal models that you've also used? You've looked at hamsters and ferrets and green monkeys, and there have been others that you have added to the mix throughout the pandemic.

Scott: That's correct. Part of it is driven by the Food and Drug Administration. For these diseases, you can't really just test them in people. You can't give the person a vaccine and infect them. The FDA uses what's called a two-animal rule in those types of diseases. They look at research with a small animal, like a rodent, and then usually a primate, which is closer to human. We knew we had to develop more than just the rhesus model. We did not develop the mouse model—it had already been done for SARS-1 work and MERS work. These mice were provided to us by a commercial laboratory, and we began work with those. We did find very quickly that Syrian hamsters also serve this very useful model for particular parts of the disease. That's one thing I should say about animal models—there's no animal model, even with primates, that completely replicates the human disease. We understand that, and so we're looking to answer very specific small questions so that we can advance what we know about the virus one step at a time, and also refine the animal model to answer additional questions more accurately. That's why we try to work through more than one model. We have more than one question, and one model won't do. We've used mink because we found out that in Europe, there's a number of mink farms there and they were affected early in the pandemic, so we know mink were naturally susceptible. We have studied them as well and tried to figure out why they're susceptible and what pieces of the human disease they replicate. [We've also studied] a number of primates—rhesus was the first, but we've also had success with pigtail macaques and African green monkeys. We've looked at other species—squirrel monkeys and things that weren't as successful—a number of models, because there's just a number of questions and each model has the opportunity to unlock one piece of the information that allows us to move forward and better understand the picture as a whole.

Barr: How have you had to contend with shortages in animals? Every lab is doing COVID research. I'm sure it's hard to get the models sometimes.

Scott: It has been difficult. Early on, we would have liked to use cynomolgus monkeys, but they almost all come from Asia. China shut those off very quickly for their use. It has been problematic getting the mice. It took a while for those commercial laboratories to gear up and be able to provide the numbers that were available. We have to had to respond, but mostly that's by being very careful with the research—defining what questions we're asking very closely and using what we have very judiciously. I'm leapfrogging back and forth because I wear two hats. It's important to recognize that on the veterinary side we are also always cognizant of animal welfare, along with the science. Part of what we're tasked with in animal welfare we call the "three R's": Reduce the number of animals, replace animals if we can, and then refine the model so that we need fewer of them to answer the question. Having that problem with the supply chain forces us to look into all of those "R's": Is there a way to replace the animal? Is there a way to use some other method of testing? Is there a way to really reduce the numbers? Again, by being very specific about the questions we ask, using the most modern techniques available to us, and getting the most from every sample that we possibly can—and allowing multiple researchers access to similar data sets. It does all of those things. We were able to respond pretty quickly, and although we would have liked to have not had to wait, it usually didn't amount to more than a couple of weeks delay at the most.

Barr: Do you review the scientists' proposals at all and suggest certain types of models or process changes so fewer animals could be used?

Scott: We certainly do. By law, every institute that does animal research has what's called an Animal Care and Use Committee and, by law, the attending veterinarian—which I am for Rocky Mountain Laboratory—sits on that committee. We review every animal protocol that comes through Rocky

Mountain Laboratory. Those are exactly the things we look for: Are there too few animals? Is it the right move? Are all the procedures they're talking about done appropriately and by law and are all the welfare regulatory acts being accomplished on those protocols? We absolutely review every single scientific protocol on campus that involves animals.

Barr: How long does it take you all usually, on average, to review these proposals and make your suggestions?

Scott: Quite a little bit. We start with the pre-review, and I imagine on pre-review each of these protocols takes me a couple hours to work through. Then we compile all our comments and send them back to the investigator. They make changes, then the larger committee meets, and we discuss those protocols. Some are very straightforward protocols, and they might take 15 or 20 minutes because we've seen that type of work before. Other protocols—especially with the non-human primates and when there are new viruses or new techniques—you could invest another hour or more. After approval at the committee, there are post-approval processes to ensure that the facilities are adequate—that sort of thing. For each protocol, I would say that welfare review is probably anywhere from four to seven hours—that would be *my* time. Then there's 12 to 14 individuals each spending a number of hours on each one. It's a significant number of man hours. Also, for non-human primates, there's a second committee that looks at not just the welfare but the scientific value. It's possible for that committee to stop the protocol if they feel it's not justified as far as the scientific validity.

Barr: Are you currently looking for a new type of animal model to answer some of the questions that have come up with the pandemic?

Scott: Right now, we're working on refining our models. The rodent models now are very well-developed and very good. The one we're working on the most is with mink. The minks seem to have some very unusual responses as far as their vascular system. In a lot of the fatal cases and long-haul cases, humans have similar changes to what we see in the mink, so we're trying to find out what it is that makes the mink different from other animals and why they mimic certain parts of that human disease process. Right now, that's probably our biggest push—trying to refine that model.

Barr: You were saying that it's hard with an animal model to mimic the complexity of human disease. How are you dealing with the fact that oftentimes in humans, people with co-morbidity or who are older seem to get COVID worse? How are you replicating that with the animal models?

Scott: It's a great question and really, we haven't been able to. We have done experiments looking to see if there's a difference between males and females, and then we've looked at older animals and younger animals. We have not really seen a difference. We have worked with mouse models that are obese mice and diabetic mice to see if we can, but we just have not been able to replicate. Again, part of what we miss from trying to replicate human disease is that it's not just that they have those diseases, but when they contract COVID and go into a hospital, they're generally there for a very long period of time and they receive lots and lots of care. A lot of that care induces pathology by itself. Being on a ventilator can cause pulmonary changes. Or the drugs they use—corticosteroids and things—can induce changes and that type of intensive hospital care is something that we can't reproduce easily in animals. There's a lot that we just can't reproduce as far as completely understanding the biology in humans as they respond to the disease. The reason we like the animals, especially the rodents, is because those mice are essentially identical—the hamsters are essentially identical, so they don't present variables in our studies. If we change one thing, we know it's *that* thing we changed that caused it, and not the

difference between hamsters. In humans, it's the exact opposite. Everybody's different. Having everything genetically the same when you're looking at diseases that are exacerbated by genetic diversity—it's hard for us to replicate that. But again, we understand that, and we're looking to answer questions in very basic biology and very basic pathogenesis, so that when we go to the bedside for people, we can better understand when we look at the results of their tests and their pathologies. We have that foundation, and we can begin to put the pieces together with the data generated from medical records.

Barr: You've been part of a number of studies. From the early days of the pandemic, you looked at respiratory disease in rhesus macaques who've been inoculated with SARS-CoV-2, to looking at the effects of therapeutics like remdesivir and hydroxychloroquine, to examining the efficacy of vaccines, like the AstraZeneca vaccine and the single-dose intranasal adenovirus vectored vaccine. How have you contributed to each of these COVID-19 research initiatives and what is it like to prepare the animals for these COVID-19 protocols? How does your department help during these studies, and how do you care for the animals before they are euthanized?

Scott: I'll start as the chief of the veterinary branch. I have a very dedicated team, and I'm a pathologist, so I'll get to what I do. I have a large clinical team. When these animals go into study, there's X-rays and bronchoscopy and drug injections and intravenous therapies. I have a very good group of people who execute all those techniques. They have to be able to do it flawlessly so that we get repetitive results and accurate results. Also, as I've mentioned, even though we're responding to a pandemic, we still have to meet all the requirements for animal welfare. I also have a husbandry group that ensures there's food, water, housing, and enrichment for these primates—they have toys and treats and things to keep them mentally healthy. All those groups are working diligently as we go through the studies supporting the scientists. At the end of those experiments is where I come in. My team are the ones who provide for humane euthanasia. Animals are sedated and euthanized. Again, as a pathologist, that's where you do all the "CSI" stuff. It starts with an autopsy, and we collect the appropriate samples. I have a histology lab that then prepares the samples onto glass slides, so that I can review them microscopically for changes and be able to compare those to the changes we've seen in humans. Additionally, that histology lab has a number of molecular pathology techniques, including immunohistochemistry and in situ hybridization—those sorts of things that help us answer specific questions of types of cells that are infected, types of chemicals those cells are releasing—all sorts of questions that we can answer. Personally, that's what I do. I provide a pathology report that describes the microscopic lesions. I can relate those back to what my clinical team saw with all their blood work. We have that clinical information we put together with my pathology information—again, I'm trained in comparative pathology—so I can look at what they've seen in human medicine, and we can see where we come together or where we diverge. My parts of the papers that you read, or the pictures that you see, are those histology pictures of the lungs and changes in the lungs and the descriptions about what the disease looks like and how it compares to the human disease. That's the piece I do as a scientist. Then as the chief, I manage that whole front end of keeping them healthy and providing a clinical team to assist with all the techniques.

Barr: I've mentioned some of the research you've been involved with. Have you been involved in other papers?

Scott: Absolutely. Rocky Mountain Laboratory was essential in the response to the last outbreak of Ebola in West Africa and that was a vesicular stomatitis virus-based vaccine. For Ebola, that has essentially stopped that outbreak in all senses. That was developed by Dr. Heinz Feldmann and his group—initially

in Canada and then here. I've worked on that outbreak providing pathology and animal support. There's an outbreak of Lassa fever in Africa and we're working with a number of groups to develop an effective vaccine for Lassa. There's outbreaks every year of Nipah virus in Bangladesh and India. That disease started in Malaysia. I was part of the initial disease response in the 1990's, and we've continued to work here looking at drugs like remdesivir and developing a vaccine. We're putting a vaccine on trial right now for Nipah. I'd mentioned MERS—that was the last coronavirus that was a pneumonia-type potential for a pandemic right before COVID-19. We worked on that here and, again, I provided the pathology support in the first histology descriptions for that disease—human or animal. The model for MERS was identified here—the rhesus macaque and hamster models. There's been a number of outbreaks and potential pandemics that I've had the opportunity to work on personally as a scientist pathologist and then on the animal side as well.

Barr: How about with COVID? There's many, many NIH researchers doing animal studies.

Scott: Yes. I probably should have pulled them all up. I've worked personally with the mink model. With the mice now we're looking for more refined treatments to influence very specific parts of that disease, because not everybody who gets COVID dies from classic pneumonia or is affected by classic pneumonia. There are diseases that cause blood clotting in some people or this long-haul syndrome, so it's a very, very long list—and a long list of scientists. Dr. Vincent Munster, Dr. Emmie de Wit, Dr. Heinz Feldmann, Dr. Kyle Rosenke, Dr. Katie Bosio—just a large number of people because my group is a core support group on every piece of literature that uses animals that has come out of Rocky Mountain Laboratory. We've supported and assisted their work on the clinical pathology and welfare side.

Barr: Do you ever make suggestions to the scientists based on your personal expertise and your experience with other outbreaks?

Scott: Definitely. A lot of times initially they'll come to talk about what types of models they think would be appropriate so we can assist with that because we have that background in the animal physiology. Going back to the mink, we saw that was really a vascular disease in mink versus a classic pneumonia, so we were able to go back to the investigator and make changes to the next sets of experiments so we can further define how the vascular system is being affected. We can suggest that they add different tests, recommend they take different tissues, that sort of thing. We communicate constantly with them. At the beginning when they're developing their animal study protocols, they came to us for suggestions and recommendations. We constantly work with them through the entire process hoping to get the best and most accurate science and reduce the number of animals that we have.

Barr: What have been some of the challenges you and your team have experienced to date in facilitating COVID-19 research?

Scott: I can say the biggest challenge was everybody else went home. I had two secretaries who worked from home, but the rest of the group had animals to care for. Not only that, but our workload actually increased. We were doing three, four, five coronavirus studies at a time, so it was every day, including Saturdays and Sundays for the first year. It was difficult because all our help went home. IT [information technology], procurement—all those people were working from home—so it was much more difficult to coordinate and facilitate getting supplies, repairing broken computers, and repairing broken pieces of equipment. NIH wouldn't let us bring in technicians, so if I had a piece of equipment that was vital that broke, I essentially had to go find money to replace it because I couldn't have somebody come fix it. That was one of our biggest challenges. Of course, we work closely together—there's no way you

can't—a mouse is four or five inches long. It takes three or four people sometimes to do these techniques on mice. We're not going to keep a six-foot distance to work on a five-inch space. We had to work around some of the silliness that came with restrictions but find ways to mitigate those and keep the work going. Then of course, as you mentioned, worldwide we had a hard time getting gloves and masks and Tyvek gowns—the basics to keep science going. But it was a phenomenal job by the group at NIH to keep that supply line open. It wasn't always the stuff we were used to working with, but it was more than adequate and, again, not once were we stopped. Those were big challenges but probably our biggest success. I don't think the country or world quite realizes [that]—especially because things like being vaccinated have become so politicized. Now people reject treatments or vaccines based on political opinions or internet opinions. But this Operation Warp Speed is phenomenal. We watch the same movies everybody does. We watch zombie movies, and in three days somebody develops a vaccine, and they save the world. We always think that's funny. That's not how it works, but we never thought within 18 months we would be able to take a vaccine and put it into people. You don't comment to what's said sometimes on the internet and social media. We still have to go through safety and efficacy testing and FDA monitors—all of that. Nothing gets skipped. I always tell people it's like painting a house. If you want to paint your house and you have one painter show up, it might take a couple of months to get your house painted—one guy, one paint brush. But if 400 painters show up at your house, you can get it done in a day. For the first 18 months, we did no other research on campus. The only thing we did was work on COVID and the FDA—pretty much all they worked on was COVID. It's just remarkable to me that in 18 months we could go from nothing to a safe, effective vaccine and get it manufactured under good manufacturing practices and out to the general public—tremendous success. I think people will realize it later, but it's huge.

Barr: It is huge. As the chief of Veterinary Branch at Rocky Mountain Labs, what did you do to boost morale amongst those that worked with you? They were close together and working longer hours. It was very intense. How did you make sure everyone's spirits were up and they felt like they were as safe as possible?

Scott: That's a great question because it was difficult. We weren't allowed to do things we normally did, like potlucks or going out bowling together. All of that stopped, so it made it even more difficult. It's not my idea, but back in the early 1960s, when NASA was trying to land a man on the moon, there's a story about a janitor. They asked him what his job was, and he told them that his job was to put a man on the moon. It was by cleaning restrooms and floors, but he understood that. We've worked very hard with our staff—we don't want them to think of themselves as just feeding mice or cleaning cages for hamsters. We want them to understand that the very foundation of all the science that gets done depends on the job they do to provide that healthy animal for reproducible, accurate research. I think all my group takes great satisfaction in knowing what they've done to accomplish what we have accomplished. The second thing is money. Money is always nice, and the NIH provided for bonuses for these folks who stayed and worked so hard. That was significant as well—for them to be recognized—because there was no other way to recognize them at the time. I can tell you they're pretty beat up; they're ready for this to be over. They'd like to take the masks off and go back to having potlucks and that sort of thing. We're hoping that's not too far away.

Barr: What do you feel that you and your team have learned during the pandemic? In what ways do you feel that the animal studies could continue to evolve?

Scott: We've learned a lot about our organization that we've been able to pass upwards. There are some facility issues where we're a little short. Our BSL3 space is a little short. [We learned] how quickly our

supply chain was interrupted because of our dependence on foreign sources. Also, [we learned] the pressures of social media and how scientific work gets interpreted. [We learned] how easily politicians can hijack science for political gain. It's made us all smarter on how we communicate and respond. At our level, we saw some real issues with communication from our superiors down to us. We could have all profited from better risk assessments and better definitions of what we were trying to protect initially. We learned a lot organizationally. We've already begun working to repair those for the next pandemic. COVID funds are being used to build a new vivarium area here at Rocky Mountain Laboratory. Our vivarium was built in 1960. We found that it was barely adequate to respond. It's old. We have a brand new super-modern facility coming. On the animal side, looking at the molecular techniques available to us and building on that sound foundation we have now, the reduction in the numbers of animals we need to continue for COVID—definitely we've had good success there. Now preparing for the next one, it waits to be seen. It just depends on what that model is going to be, if it's one of the traditional ones we have defined, that'll be great. If it ends up being something super unusual then we start from scratch. If it's something we haven't worked with, we'll adapt and overcome, of course, but the lessons learned will help us get there faster. Just knowing what we could accomplish with this Operation Warp Speed [will also help]. It wasn't just NIH working together—university scientists worldwide were sharing information, making it available as it was generated. A lot of times it takes 12 to 18 months to get a paper published, and that's when the information gets out. We were sharing information real time. I think that's going to continue. That's a huge improvement for dealing with these kinds of major public health problems.

Barr: You feel like because there is more information shared in real time, your animal studies had to be performed because more people could use data from a similar study?

Scott: Because it was in real time, we could find out very quickly that somebody had already done that experiment, so we could eliminate it—again, saving lots of animals and again directing our efforts, money, and resources to things that mattered. Just three years ago, somebody might have done an experiment and not published it for three years. That means we could have been reproducing the exact same thing because we wouldn't know that data existed already. It's a great savings in time, money, and more importantly animals. I think that's going to continue as a trend.

Barr: What have you found most rewarding or interesting about working during the pandemic?

Scott: The most rewarding thing was that we essentially went from nothing to a vaccine in 18 months' time. That's just hugely rewarding. We've had that here before with the Ebola vaccine. It's just phenomenal to have the opportunity in a career to do that. I think most of my people would say the same thing.

Barr: In addition to being a scientist, you're also a person who's been living through this pandemic. Briefly, what have been some personal opportunities and challenges presented by COVID-19?

Scott: The same that everybody has had. Social isolation initially at home. Montana is pretty much wide open now. We wear our masks on campus, but as soon as we step out, you can't tell that there's a COVID pandemic still ongoing outside. We still all know people who occasionally get ill and that sort of thing, but that initial social isolation, the inability to travel, the impact on our professional lives—because the conferences stop, continuing education stops—everything except work stopped, so that was difficult. I'm a fifth generation Montanan and pretty much everything out here is being outdoors. The flip side of that was when people couldn't travel, there were a lot of nice outdoor opportunities.

Barr: What kind of outdoor activities do you enjoy?

Scott: Skiing, hiking, camping, getting out and running dogs—I train bird dogs, fly-fishing, white-water rafting; lots of outdoor activities. Thankfully that was never really impacted, you just couldn't have large groups of people. That was nice for us. I'm glad it's very rural here. Most research facilities are in urban settings and those folks had it a lot worse. Before the pandemic there were maybe six restaurants in town and we're down to maybe four, but for us, that's not a major impact. Everything we like to do we could still pretty much go and do. Not being able to get toilet paper initially was interesting and a nuisance, but part of the experience. Now that it's starting to get in the rear-view mirror, you can look at it kind of nostalgically, and that wasn't so bad.

Barr: Is there anything else you would like to share, either about your COVID-19 research or your experiences?

Scott: Not really. I would just like to emphasize again that I lead a really large group of professionals that don't get much recognition.

Barr: They don't.

Scott: They are very, very dedicated to the animals that we work with. They take those three R's—reduce, refine, and remove—very seriously. They love the animals they work and care for. The success of what happened over COVID—they were the foundation of that. They provided the resource that was necessary for us to face this pandemic and come up with what's going to be the resolution with vaccines. They're just a phenomenal, phenomenal group. I don't think the public world in general understands how much those people provided for them. Everybody sees the scientists' names on the paper, but without that material to get the work done, it wouldn't have happened. They were just fantastic; they did yeoman work, and they continue to today. It's not really an "I" thing, it's a super "we" thing and just a fantastic group.

Barr: Definitely. I wish you and your team continued success and continued safety with the virus still being out there. Thank you once again for all your work.

Scott: Thank you and again I appreciate the opportunity.