NNTRCinterview.mp3

Dr. Rideout-Hanzak [00:00:21] Hello, welcome to a talk on the wild side. Your biweekly tour of all things wild in Texas, I'm your host, Dr. Sandra Rideout-Hanzak

Brianna Slothower [00:00:29] And I'm your co-host Brianna Slothower

Andrew Lowery [00:00:31] Also, I'm Andrew Lowery. Howdy, howdy.

Dr. Rideout-Hanzak [00:00:34] Hey, guys. How's everybody doing?

Andrew Lowery [00:00:36] I'm so sleepy I could use a nap. I tried to take one in between this recording session and the last one, and it did no good it only did bad.

Dr. Rideout-Hanzak [00:00:44] No good, huh?

Brianna Slothower [00:00:46] Well, you look alive to me.

Andrew Lowery [00:00:48] Mostly dead is still somewhat alive....

Brianna Slothower [00:00:50] Oh yeah, yeah.

Dr. Rideout-Hanzak [00:00:52] Maybe it's the weather. We actually have kind of a cold day for Kingsville, so that's fun.

Brianna Slothower [00:00:58] I was able to unpack some of my Pacific Northwest, you know, garb,

Andrew Lowery [00:01:02] so you get a jacket out to put it on for a day to.

Dr. Rideout-Hanzak [00:01:06] The annual. What I do with my jacket hunt that we go through that I go through anyway. OK. So Andrew, do you have something wild and new for us today?

Andrew Lowery [00:01:17] I do Dr. Rideout. There's research from the University of Exeter that indicates that male elephants are less aggressive when they're older bull elephants around. This is important to note because old male elephants are often thought of as redundant or targeted for trophy hunting, which could lead to increased human wildlife conflict.

Brianna Slothower [00:01:34] Hmm. That's interesting. Did the study say why the presence of older males changes the group behavior?

Andrew Lowery [00:01:42] Well, the researchers think that the older bulls are policing the behavior of the younger elephants and keeping them in check against, not elephant targets. In this study from Botswana, the elephants were more likely to be aggressive towards vehicles, livestock and other wildlife species. And adolescent males in particular, were more aggressive and fearful when they were alone compared to an older bulls were in the group. Researchers think that older males are more knowledgeable and play a key role in calming the younger males against what may be perceived threats. The findings provide important information for wildlife managers for reducing human wildlife conflict. You know, that's really important, too, because, you know, it often is a misconception with

elephants that it's kind of this free for all over there. And it's really not these. These government agencies are very specific about how they do generally. And it's not every country, it's a country, to country, basid, you know, you compare Kenya to Zimbabwe. Kenya is all eco tourism. They don't want you to shoot anything. They just want you to come take pictures and then you go to Zimbabwe to where it's it's so densely populated with or not populated. The vegetation is so dense you can't see five feet in front of you. So what are you going to take pictures of ? You know, so it's I don't know that always interested me looking at the different socio economic climates.

Dr. Rideout-Hanzak [00:02:56] I just find it interesting that elephants are apparently a lot like people. I mean, it's it's those young adolescent males that are getting into trouble the older, when older ones aren't around. I thought that was interesting.

Andrew Lowery [00:03:12] Well, it's very interesting. I mean, we always I think when we look at the typical knowledge that's discussed about elephants, especially in North America, we hear so much about the female centric side because they are, you know, a female led society. You have this pathfinder who she knows where the watering holes are. She knows where the best green is. You know, she she leads the herd to life or death. But the males have their own weird little social structure within that society, and it it plays a huge role in the conflict between people and them.

Dr. Rideout-Hanzak [00:03:41] Yeah, definitely. Apparently.

Andrew Lowery [00:03:44] Apparently.

Dr. Rideout-Hanzak [00:03:45] Apparently, I know nothing about elephants, except they're cool.

Brianna Slothower [00:03:48] Yeah. So just like when you know the little baby elephant reaches its little trunk and like holds its mom's tail, that's about what all I know. And I think it's cute.

Dr. Rideout-Hanzak [00:03:58] Yeah, it's pretty cute. Well, we're going to go from cute to the not so cute today or what most people would consider not so cute, but it's really interesting. We have a great interview with some professionals at the National Natural Toxin Research Center today. And if you're unfamiliar, that might be considered just a fancy name for a place right here in Kingsville, Texas that houses and collects venom from a variety of deadly snakes. So before our interview, let's just talk about Venom for a few minutes. You've probably heard people talking about poisonous snakes before, but typically what they mean is venomous snakes. The terms poisonous and venomous are often used interchangeably, but they really aren't the same thing. Yep, they both might harm you or kill you, but the differences is in the way they are delivered to their unlucky recipient. So poison is a toxin that's either swallowed, inhaled or absorbed through the skin. If an animal's poisonous, they are often not aggressive. They only release their toxins if they get eaten or they feel threatened. A good example of this is a poisonous animal called the cane toad, which secretes toxins from glands on each shoulder. Often, the toxins taste bad to serve as a warning to a predator that tries to eat a poisonous animal. And this will cause the predator to spit it out really quickly. There are also poisonous plants many of us have tangled with Poison Ivy, I know I have touching poison ivy can really result in an itchy, painful rash and breathing the smoke from burning it could cause temporary breathing difficulties. Now, venom is poison, too, but it's specialized for the purpose of being injected through a bite or sting. A venomous animal might bite to

immobilize its prey, or it may bite to defend itself against a predator or another perceived threat, like a person getting too close. Venom is a mixture of both small and large molecules, and in order to be effective, it has to find its way into the bloodstream. Thus, venomous animals are typically more active in defending themselves than a poisonous animal would be. There are a few animals, though, that are both venomous and poisonous, and the blue ring the octopus is a great example of this its venomous when it bites with its beak, but it's poisonous if it's swallowed. And this is because it has a myriad of different toxins in it, and the most potent is a neurotoxin that's able to be absorbed because it is a very small size. Both poison and venom are designed to be effective if delivered in the correct way. But what if you drink venom rather than having an injected would still be harmful? We looked into this and discovered that there haven't been any volunteers willing to test this out in the name of science. But theoretically, it's possible to swallow venom and not notice any effects. However, if you had a small cut or an ulcer in your mouth, it could be absorbed into your bloodstream. So we're definitely not advising you to do this. But let's head on out to the Natural Toxin Center to hear from the venom experts. We are here today, alive and in person at the NNTRC, which stands for National Natural Toxins Research Center, and you'll hear some of our in-person listening audience here in a minute. We're going to be talking to Mark Hockmuller and Juann Salinas of the NNTRC. And I'm going to move around just a little bit and make somebody unhappy so you can hear.

Dr. Rideout-Hanzak [00:07:55] All right, you guys hear that we're surrounded by our rattlesnakes.

Dr. Rideout-Hanzak [00:08:02] So I'm going to have really interesting dreams tonight.

Brianna Slothower [00:08:07] If you hear the screams throughout the podcast, you will know why

Juan Salinas [00:08:11] it's supposed to be like a waterfall, soothing. Nice soothing, very rambling.

Dr. Rideout-Hanzak [00:08:17] No, they are in cages. OK, so Mark and Juan, tell us what you do here. And tell us about about the center.

Mark [00:08:26] Well, we are half of the center. Important center is mostly studying venomous snake and their venom, and they're all the smart people around the biomedical research lab where they are looking for. Biomedical applications that are found in snakes can make venoms, have millions of molecules within them and every species every individual has. Molecules that are undiscovered, and we're seeking out the purpose of these molecules and how they could be used. But over here were the knuckle draggers, we were just handling the animals. We're not the canvas. The biomedical researchers were extracting the venom. We're acquiring the snakes, taking care of the snakes. And the mice,

Dr. Rideout-Hanzak [00:09:24] OK, so, so, Mark, what's your title

Mark [00:09:26] here? I'm the curator, OK? I'm just in charge of the personnel and the facility and an extraction of the snakes.

Dr. Rideout-Hanzak [00:09:36] OK. And Juan, what's your title?

Juan Salinas [00:09:38] I'm an animal technician. I actually handle the snakes and clean, you know, all the cages. Mm-Hmm. We split the duties of feeding and, you know, selection of breeding specimens, and we oversee the mouse room. Usually we have a student worker that works in the mouse room and we we oversee what they do and training training purposes and handling of other animals.

Brianna Slothower [00:10:09] So this is a pretty interesting job that you guys do. How did you get involved with doing this type of work?

Mark [00:10:17] Well, I would say it's all sort of accidental, but we both have backgrounds in being interested in reptiles, amphibians, but it was not our. It's not our educational pursuits, but we ended up here. I was in marketing, I was in the dot.com era doing all kinds of web design and web marketing, and I ended up moving here and. I moved here without a job, so eventually I looked for a job and ended up doing more marketing because they needed someone to work at the facility and try to find collaborators, and I'm going to do newsletters and that kind of thing at a technical writing background. Hmm. But at some point. Well, they knew that I had a background with reptiles and amphibians. I used to write about them in magazines. Really? Yeah, I was. That's cool. A hobbyist and I had a minor in wildlife biology, but I was a technical journalism major. So it doesn't really match, but that's OK when you're at a place like this, because the most important thing is to not get bit and be safe and out of a comfort level with these kind of animals. And I always did. I worked with some dangerous pets in my past. OK, but at some point there was a need for someone to do extraction, and the director at the time just asked me if I wanted to try it and I tried it. Mm-Hmm. And after three attempts with non-venomous snakes , I was suddenly doing multiple extractions.

Juan Salinas [00:11:51] You got you got to use non-venomous first. Yeah. I got thrown in with a C. helleri , which they sometimes the anti-venom doesn't work for them. Yeah.

Dr. Rideout-Hanzak [00:12:01] Oh my goodness.

Juan Salinas [00:12:02] So but as long as you keep in mind, don't get bitten. It's all the same.

Dr. Rideout-Hanzak [00:12:07] So so yeah, is that like when my alarm clock goes off in the morning, I think about the things that I need to do when your alarm clock goes off, do you think, OK, don't give it today is the number one goal. Is that the number one thing?

Juan Salinas [00:12:19] Yeah, that's always the priority. So that's as as a good worker for someone to be here. That's that's the priority is is not to get bit and not to let anyone else get bit.

Dr. Rideout-Hanzak [00:12:32] OK. OK.

Mark [00:12:33] It's far more important than having a degree in herpetology or

Dr. Rideout-Hanzak [00:12:37] yeah, that makes sense. Degree doesn't matter if you got bit.

Mark [00:12:41] Yeah, I've been here quite a while and have a pretty darn good record.

Dr. Rideout-Hanzak [00:12:45] So, yeah, good. So Juan, how did you get started?

Juan Salinas [00:12:49] I actually got introduced to this place through the university. I started as a freshman and I took a tour back when this whole thing was actually in a dorm and an old dorm that was modified. And so, you know, I started off as a bio major and so I was in the field and I was interested and they just happened to be hiring a student worker at the time. So I started off in the mouse room as an animal technician in the mouse room and eventually, you know, worked my way up to full staff and ended up changing my major to a fine arts degree. And so I worked my way through college through and through this place. So as I was working here, I got my degree. And so this is where I've been for the past. What are you like, 14,

Juan Salinas [00:13:42] 14, 12,

Juan Salinas [00:13:43] 14 years here? Mm-Hmm. And so just m. Mark, me and him started at around the same time with off and on periods of, you know, going through different jobs and coming back. So we kind of knew each other throughout the years here.

Dr. Rideout-Hanzak [00:14:01] So the lab, how is the lab funded? Is it all grants so you guys have to go out and get or what? Where does the money come from?

Mark [00:14:10] Majority is of federal funding. We do have grants. The major one is it has to be renewed every five years. We also get assistance from the university, but its majority grant funded. Yeah. And then there's multiple grants and then the individual researchers at the lab can propose their own grants and be funded just for individual projects.

Juan Salinas [00:14:33] OK, that makes sense. Yeah. And I believe it's the NIH, as is our main grant funder, and I think that's called the Viper Grant Viper Resource Grant.

Mark [00:14:44] OK, so that's the only we're the only federally funded snake facility in the

Mark [00:14:50] US, really? Yeah, wow.

Mark [00:14:52] And then we have some competition. Well not competition? But other similar institutions, only a handful of them exist in the world. So the one in Brazil, one in Thailand and. The other two escaped me. There's very few of them. Mm-Hmm. And we're the only one in the US, so we are the resource for any other institutions that want to do venom research.

Dr. Rideout-Hanzak [00:15:16] Okay. Wow. I didn't realize you're the only one in

Juan Salinas [00:15:18] the U.S. there's privately owned ones, but we're the only government grant research facility.

Dr. Rideout-Hanzak [00:15:28] So are you for the US or are you like the the are you the folks responsible for antivenom?

Mark [00:15:37] We definitely are. One of the biggest contributors. But there's other programs around the US, but we probably have the largest inventory.

Dr. Rideout-Hanzak [00:15:47] OK.

Mark [00:15:48] And so we would be one of the top people that would help to assist in testing antivenom or anything venom related, not just antivenoms, but OK, medicinal applications, that type of thing.

Brianna Slothower [00:16:06] Well, that's interesting. Now you said testing venoms and extracting venoms. What does a typical day here look like for your job?

Mark [00:16:17] Well, we always want to keep up with the extraction because it's just to keep up with our skills and to keep the inventory from piling up because one order could take all of our venom away for one species. So we try not to let that happen. So every day we do some extraction that doesn't really take up the majority of our time. This facility is, you know, we have 400 plus excreting animals and that's just on the snake side. So all these cages that they maintain and that's, you know, Juan is in doing a lot of that work, plus some help from student workers. And then we have the mice that are used for experiments, but they're also used as snake food and mice are even dirtier than snakes. They have to be cleaned out those cages have to be cleaned out weekly. And so that's a full time job, but that is a student worker position, just handling that. That's true. So a lot of maintenance and a little danger mixed in there. What would you say, someone? Would you add to that?

Juan Salinas [00:17:26] I would just say, like, you know, throughout the week, usually the morning time will do what's been either preparing venoms for the laboratories. You know, we'll get requests from them or, you know, someone buying venom. So in the morning, usually that's what we take care of and then we do extraction in the morning and then the rest of the day would be, you know, focused on caring for the snakes as far as cleaning and feeding. And, you know, overseeing what's going on in the mouse room as well. And then we squeeze in whatever, you know, tours or certain events that were going on through this facility.

Dr. Rideout-Hanzak [00:18:03] Yeah. So you mentioned that one order might take, you know, a whole chunk of inventory so who orders from you. Where does the venom go from here?

Mark [00:18:16] Well, we have our own projects that we work on, so it could be right over at the lab here, but they generally are selecting something that we will work with them on something that we know it's a young snake. We can provide the snake on an ongoing basis. We try to steer them in that direction, something that we know that they'll be able to use on in an ongoing way. But after that, it's kind of unpredictable. We have people from all over the world that we collaborate with or just have a need for our product. A lot of product is shipped to Mexico. There's a Venom Lab, our antivenom company down in Mexico. We send them a lot. There's Singapore, there's researchers there, and I'm not even sure exactly what they do with the venom in

Mark [00:19:02] a lot of cases.

Mark [00:19:03] But there's a guy that has a small version of our program there that wants, you know, a lot of North American species that he can't get his hands on. And sometimes we'll do trades. And so there's different universities around the world that are doing venom researchers and research that we can help one more so.

Dr. Rideout-Hanzak [00:19:26] So it goes to a variety of both research and then also producers of antivenom.

Juan Salinas [00:19:32] Correct. OK. And we're not only a venom resource center, we provide any kind of tissue or samples from snakes as well. So like, if they need blood to a blood sample or, you know, tissue sample, we've had some that actually they needed organs from the snake. So we're a resource center, so we provide any resources having to do with the snakes as well.

Juan Salinas [00:19:58] And that could be shed skins. Yeah, there was a university in Ohio that just wanted to do a. Genetic research, and they could get what they need just from a shed skin, so we collected a bunch of skins and sent it to them. And system. The Department of Defense we've worked with on a universal antivenom. I think that's an ongoing project. Wow. That doesn't exist yet, but that is it would be great if that could ever be developed.

Juan Salinas [00:20:30] Wow. Currently, how many different interventions are necessary?

Juan Salinas [00:20:37] Well, we have our domestic snakes are covered. So all our pit vipers that are from North America and most of most of the ones from Mexico are covered by the same antivenom that many hospitals not all will have in their inventory. But there is no way we could expect them to have given Viper Antivenom our Cobra antivenom or Cobra from Asia, Cobra from Africa. So in order for us to house that species here, we're going to have to buy that antivenom that goes along with it. So that's a huge expense that has to be it has to be renewed because they have an expiration on them. So we have to have that in the fridge here. And if we ever get that, we got to have it with us because like I said, there's no way they're going to have. Red spitting cobra from Africa, antivenom sitting in their lab over there, so you'll

Juan Salinas [00:21:31] think if you go, you're here and Kingsville, you get that.

Juan Salinas [00:21:36] I don't know very, very

Juan Salinas [00:21:40] smart because

Juan Salinas [00:21:40] you keep it on hand. Yeah, yeah. And it's a requirement and it's a very sensible requirement if we're going to be doing this and we've got to be ready for anything. So, yeah, so yeah, there's a lot of different antidotes for different species if you're talking international and. That's why there's always a need or a desire to make an improved version. I don't know how close we are or how feasible it is to have a universal antivenom because they're so different, but. There's people that are interested in trying.

Juan Salinas [00:22:16] So you were talking about meeting all these different types of venoms, and, you know, there are some that you can double up on or whatnot if someone gets bit by a snake. I guess the more my question is, where do you get all these different types of snakes for, you know, for your facility?

Juan Salinas [00:22:35] There's a variety of places we we could get a knock on the door at any time from a local rancher than has one in a bucket, and that's very common. Yeah, you might call us and say they found one in the parking lot and we'll get one there. And then you got collectors, people that have heard of us. You know, there's a I don't want to call it underground, but there's a type of individual that is very interested in reptiles and and specifically venomous reptiles, and they're a lot more interested in venomous reptiles and one and I. But they love to be of help and they will catch them for us, or they'll be

aware of someone that has one that's trying to get rid of them. So contacts like that will get a lot of snakes from them. Then we get exotic ones are mostly from zoos. So they may have a pairing, um, couple that ends up giving birth to 20 snakes. What's a zoo going to need more than one exhibit for? And so they would call us and we'll take it off their hands. Then the confiscations, law enforcement confiscations, we have one from

Juan Salinas [00:23:49] the work state. Those get a little weird.

Juan Salinas [00:23:52] Yeah, but there is a hobbyist and they can get some really beautiful. We can show you some. You know, they're treasured by these people that are collectors, sure. Beautiful colors, but they may live in like in this case, it was upstate New York. He was keeping those and selling them illegally in some parts of the country is perfectly fine. It comes down to the, I think, the city level. I think what the rules are and this guy was afoul of the rules. And so they confiscated 40, maybe 50 exotic specimens. I mean, it was a big loss to this guy, but he was breaking the rules. So they took him. And then they ran to the Bronx Zoo in New York City and we got a call from them asking us if we would take them. They put them in crates, and Delta Airlines is the only carrier that will take venomous snakes. As last time I checked, they're still allowing it. But they have to be carefully packed, as you can imagine.

Juan Salinas [00:24:51] Yeah, we've all seen the movie.

Juan Salinas [00:24:53] Yeah, yeah. And so I went and did a pick up there. That's a good example of an odd place to get a snake.

Juan Salinas [00:25:01] And then we had the Craigslist cobra that we had, and this was actually local in Corpus. Really? Yeah, they they are listing a bunch of like guitars, amps, no monocle cobra speakers.

Juan Salinas [00:25:16] Yeah, he patted the ass. Yeah. Is it just kind

Juan Salinas [00:25:18] of threw it in there in the middle? And then, you know, someone reported it and the cops set up this whole fake by and, you know, they contacted, you know, the animal control there. And then they got a hold of Dr. Buckley here on campus because apparently he knows them. He's handled snakes in his past before, too. And then he got a hold of us like, Hey, we got a cobra over here. You guys wanted and you're like, OK, I've got to get anti-venom for it before we can do much with it. But yeah, we'll take it.

Juan Salinas [00:25:47] Yeah, I think they're calling us either at the same time or right before they're about to read out sometime because they need to. At some point, they have to figure out where we're going to, where

Juan Salinas [00:25:56] are we going to take this thing? I'm sure animal control is super thrilled about going to pick up a spectacle.

Juan Salinas [00:26:03] Cobra Yeah, they're used to possums.

Juan Salinas [00:26:06] Rattlesnakes get paid for this. So speaking of zoos and such, since you guys here have have all of this exotic, you know, for for red spitting over spectacled or whatever. Do you ever get like an emergency call, say, from Houston, where maybe a keeper has been bitten and. And you're the closest with the antivenom that ever happened.

Juan Salinas [00:26:32] It's always something that we're prepared to do on Earth. And since I've been curated the curator, I have not had to do that. It's good, but it's actually part of what we offer to the community. OK. We let it be known that if you do have a case like that, I'm a hobbyist or a handler or a law enforcement person that gets bit. Obviously, we'll get them the optimum place it. Yes. And if a hospital in Houston maybe only has four vials and they need five more, 10 more, then we'll definitely ship it out to them. Mm-Hmm. It just hasn't come up. Fortunately, it's kind of a rare incident, but when it happens, it happens and you have to know what you have to do in that case.

Juan Salinas [00:27:17] So that's A. It's rare.

Juan Salinas [00:27:19] And I think for the most case, though, they they usually the places that have it usually buy enough to to actually treat when they are serious and have their OK. Yeah, like the zoos and they're required to have them as well. OK, so that's good.

Juan Salinas [00:27:34] And venomous snakes are pretty popular and it's not like when we were growing up, there probably wasn't that many. Every zoo probably has a little section of them. And so they would be required to have it too. So that may account for once. We don't get a lot of calls like that. OK. Case, there's an oddball situation we might be able to help.

Juan Salinas [00:27:53] Yeah, you brought up the spectacle of Cobra in Corpus Christi. What about Texas in general, is it OK to have venomous snakes? We might cut this later, but this is for my own curiosity. Is it OK to have venomous snakes as a pet?

Juan Salinas [00:28:12] Well, yeah, depends on where you are. Like, I got a call from the Rob's Town animal control room and they wanted to know if we can take. And it wasn't even a venomous snake. This was a large python. Mm-Hmm. And he said, I don't care what you do with it, it just has to be out of the county. So we took it away. We eventually got it to a happy home, I assume. And then but every municipality has its own rules.

Juan Salinas [00:28:41] OK, so we're below. Yeah.

Juan Salinas [00:28:44] So we're just so

Juan Salinas [00:28:45] concerned about pythons because of what happened in Florida, you know, they're just destroying the ecosystem.

Juan Salinas [00:28:52] So, yeah, definitely.

Juan Salinas [00:28:54] There's a lot of reasons for those rules. It could be environmental or it could be safety. And it changes everywhere you are.

Juan Salinas [00:29:02] I hadn't even thought about that, but yeah, certainly it's warm enough here that is. Several were released. We could have the same problem that they had in Florida.

Juan Salinas [00:29:12] Hmm. Till we get a good, hard frost like last year, that's why we took care of a lot of them. But we don't see a lot of iguanas out here, and I'm sure there been a few released. But there is one more way we get snakes and I go on a hunting trip

once a year. Although last year was a complete bust, I didn't see one snake when one live snake, but sometimes I've had successful. Yeah, I generally go to Arizona or California or West Texas and try to find some.

Juan Salinas [00:29:43] Is this hunt that you talk about? Is it like a hobby or you do it as part of your job?

Juan Salinas [00:29:48] Part of my job is I'm required to do a hunt once a year or. At least once a year.

Juan Salinas [00:29:55] OK, what's the need a snake you picked up on your hands before?

Juan Salinas [00:30:00] Oh, wow. Well, I didn't pick it up because I wasn't fast enough, but I saw a Sonora coral snake on the side of their own. So it's not exactly your question, but I almost got one of them. And then Sidewinders, those are really neat to pick up because they because they have those unique movements and you see them across the road in Tucson. And I always like catching those. I've only got three or four of them.

Juan Salinas [00:30:36] Have you got any snakes or what do you do any of that?

Juan Salinas [00:30:39] I generally don't. I've done local calls and then once in a while, we'll go out back over here because we used to have that cactus farm out back over there and we'd go walk through there and we actually find some just in the back here before they started clearing all this area. Yeah, funny story. We did catch a coral snake on our way to a snake called down the road. We were, we were going. We were responding to a snake call and we saw a coral snake on the side of the road. So we caught that. And then when we got to the house and we found two rattlesnakes together together, they thought it was just one and ended up being two. And I think it was right before a cold front right. So everything was kind of moving around and it's crazy. So we ended up with three snakes instead of just one that we were responding to.

Juan Salinas [00:31:32] Yeah, in the span of 10 minutes

Juan Salinas [00:31:34] and it was a coral snake, which those are not as common as a western diamondback. So they're really timid and they like to hide.

Juan Salinas [00:31:41] So let's in the middle of the day, you know? So, yeah, see at dusk or very wee hours of the morning?

Juan Salinas [00:31:49] Yeah. So that was a fun call a.

Juan Salinas [00:31:53] So the venom you mentioned this a little bit for the venom is a precious resource for them that they don't want to give up. Mm-Hmm. How do you get them to give up the the venom?

Juan Salinas [00:32:06] Know, usually once once we're actually messing with them, they're they're pretty riled up and angry, they're OK, you know, they're think they're being, you know, targeted as a prayer or something, so they feel threatened. So, so once Mark pins their head, generally, they just we just need to put something in front of them for them to buy it. And I'd say, what, 90 percent of the time they do it voluntarily. Yeah. And we have a certain few that are a little less aggressive or they've been here a really long time

and they kind of got used to the process of us doing it. And then maybe they'll give a drive by it here and there. And we have to, you know, wiggle on a little harder just to to get them to give up their venom freely.

Juan Salinas [00:32:51] So once you have the venom. So we we got to film you milking us here. Now what happens with that? What would you do with it from there?

Juan Salinas [00:33:02] So from there, we take the venom we move it into because we have sample cups that we collected and we moved them into tubes and then we centrifuge all the sediment that's found in the venom. That's all, you know, particles and cells that we consider trash as far as the research is concerned. And so we take the clarified venom and freeze that. And then usually within the next day or two, we freeze dry it and then it's stored in a powder form for whoever wants to needs to use it.

Juan Salinas [00:33:36] I was surprised when we were watching them at how little you got from each snake. So I mean, how many snakes do you have to milk to get a useful amount for somebody, you know, for research or for antivenom purposes?

Juan Salinas [00:33:53] Well, for research, you really don't need a lot. I mean, they they've used as small amounts is like five milligrams for what they keep on the equipment that they use. I mean, they're measuring tiny molecules. So like five milligrams of venom is like a week's worth of work that they could be looking at. So usually when we sell large amounts, it's because they want to buy enough to last for maybe like the next two years or something. And so they'll buy a gram of it and that'll last them, you know, a year or so, depending on what they're they're using it for. So actually, just researching it doesn't take much. If they're using it for something like creating antibodies or something and then large volumes that they need, then you know, it'll take a lot more.

Juan Salinas [00:34:44] Yeah, but something they can't duplicate and they do a lot of, OK, so they're producing something with the venom. They might need more venom then rather than just putting it through certain tests.

Juan Salinas [00:34:56] Mm-Hmm. And because they could be just you looking at one, you know, protein in, it's found in the venom. So all they really need is to isolate that protein. And then they you know what the labs will do. They'll they'll actually clone that protein in in bacteria. So a lot of times they just need a small sample to get what they need, depending on what they're doing.

Juan Salinas [00:35:21] So what we saw when you guys were milking them was just a few drops really from each one, it seemed like. And I don't know what I had in my head, but I don't know about you, Brianna. But like you hear stories in there and they're like, you know, their mouth is on your leg and they just keep and I'm just thinking that they're just like, I'm being, you've all of them over and over again.

Juan Salinas [00:35:46] Cobras Cobras will do that. Really? Yeah. Well, we didn't necessarily give you the best sampling, which is fine, but they'll do that. They'll just pump on to that pair film. And they would give a lot when we just did them yesterday. Sorry, you missed it, but OK, they would give probably two or three times the amount that you saw some of these, for example, that I got. And then the given Viper, he'll give a lot, um, like that whole bottom would be filled with them.

Juan Salinas [00:36:13] Really?

Juan Salinas [00:36:13] Yeah. Eastern Diamondback will give a lot. So our larger specimens that are a little more prolific

Juan Salinas [00:36:20] than we have a lot of. Yeah. So generally the larger the head of the snake, the larger the venom glands are. Mm hmm. So when we're done

Juan Salinas [00:36:26] filming, you know, there's a lot of stuff that can go wrong. So the more dangerous bigger ones maybe aren't the best for us to be filming.

Juan Salinas [00:36:35] I, I kind of do because the door was open and I thought,

Juan Salinas [00:36:40] Wow, I wanted to go on some sure thing, but a cobra can make its way out. We wouldn't. We wouldn't have that door open if it was a cobra because they can bolt

Juan Salinas [00:36:50] out of here. Yeah, they're so fast.

Juan Salinas [00:36:51] And then the big eastern Diamondbacks. Sometimes they need a third person and a big bucket over here, and it's just a little clunky for film work.

Juan Salinas [00:37:02] Yeah, well, we appreciate.

Juan Salinas [00:37:04] Yeah, we definitely have a good producers.

Juan Salinas [00:37:08] Yeah, but do you think like what you get in the cup

Juan Salinas [00:37:15] from like from the

Juan Salinas [00:37:16] rattlesnakes in the copperheads that we saw today? Is that what a typical bite would get?

Juan Salinas [00:37:23] Yeah, maybe a little more, maybe a little teaspoon or so.

Juan Salinas [00:37:26] So do you guys do either of you have a favorite snake?

Juan Salinas [00:37:33] I like that a wobbly one that we're talking about because I tried to breed snakes the very first time and it was a success. And he came out, he was a survivor and he's an albino, which is kind of cool. It was intentional. I thought we did have the right combination of an albino and ones that are carrying the genes for albinism. So I was hoping it would work, but it actually worked on my first try. Now that a lot of try since then, that didn't go very well, but he's still around. And so you

Juan Salinas [00:38:04] made that snake on purpose. Yes. We're going to have to try and describe this snake to people because it's pretty special. I got to see it. I don't think you ever get to see it, Brianna. Oh, wow. So describe this

Juan Salinas [00:38:15] snake. Yeah. Well, albinism is not really a good to have. It's really it's I'll describe the snake is very beautiful because it's, you know, it's yellow, bright yellow and it's got really light eyes. And but he has a neurological issue. So he likes to do unnatural movements and tilt his head back and kind of rub his own back with his snout. There is no other snake in the facility that does that. And they call it the wobbles. No

matter what the issue is with reptiles, sometimes they'll just have a neurological issue. So we call them wobbles and oh, you got a tender spot in my heart for them.

Juan Salinas [00:39:04] And he was born that way. So he's been like that every since he was born. And he actually outlived some of his siblings. They were normal.

Juan Salinas [00:39:13] Yeah, yeah. You should've seen him, Brianna. His head is like completely upside down, and he's like almost doing the cobra like back and forth thing, but he

Juan Salinas [00:39:24] never missed one meal. Now you can gauge how healthy a snake is by whether eaten, and sometimes I'll skip just a skip. Never has given

Juan Salinas [00:39:34] baby

Juan Salinas [00:39:35] and we and we actually have to be careful with him too, because he will he, unlike other snakes that strike forward because he's always like that. He will actually strike straight backward sometimes. And so we really have to be careful, as funny as it looks. We really have to be careful with him because he's just totally abnormal.

Juan Salinas [00:39:57] So in the old days, every farm had a kid that was really strong baling hay, but was not so bright. Maybe that's our problem.

Juan Salinas [00:40:10] What about you? One What's your favorite snake?

Juan Salinas [00:40:14] I have a couple. Some of them are just because of how well they're tempered, I guess you could say. I mean, they don't mind being handled, so they're easy to work with. And then I really like the Bush Vipers because they just have the way their heads look and their skills are. They really look like miniature dragons and they just have those really keeled scales and the snout is kind of stubby. And so they just really they look really cool and they come in so many different variations of color. I think those are the ones that Mark was telling you about. There were confiscated and we have like four or five different colors, so we

Juan Salinas [00:40:53] call them the Christmas snakes. The other day, you get to go see who's got a green,

Juan Salinas [00:40:57] yellow, orange and red, but then they're really mean. So they sit there with their mouths open, flashing their fangs.

Juan Salinas [00:41:05] I realize they're so tiny.

Juan Salinas [00:41:07] It kind of looks cute when they do it, but it's like, if the glass wasn't there, I'd be really scared.

Juan Salinas [00:41:13] Yeah, they ruin Christmas completely.

Juan Salinas [00:41:17] They don't have good Christmas cheer. Well, one other question we like to ask a lot is what is a biology blunder like? Do you have a story where you had a situation where something went south? That kind of is a funny story that you like to share to make people laugh about your job. Do you have any stories you'd like to share like that?

Juan Salinas [00:41:43] I have one the I don't know if you were here for. We used to have this big eastern diamondback rattlesnake and his name was Diablo because he was really mean. Really big gave tons of venom like four or four or five miles of venom and one by. And the funny story is usually it takes three people to handle that one because he is just so big. So we had a person using the grabber, the person pinning and then the other person helping with the tail end, you know, four body control. Well, like we said, sometimes they'd they'd like to defecate in defense. And so when that happens, there's not really much you can do because you're trying to not get bit. And you kind of have to let it happen. Well, Alusi, which is one of the old workers that trained me, you know, she she's passed on over the years and was she had it by the tail. And so he started defecating and he's such a big snake and it went right into her lab coat pocket. And that's just all. You know, that size snake was like a cow patty just straight into her lab pocket,

Juan Salinas [00:43:00] and

Juan Salinas [00:43:00] it's just you can't do anything about it. And so you're done and get the snake in a safe place. And she like to have all her pins and markers in there, and it was just like a total loss for her and she would always like label her stuff Lucy's, you know, pins or markers. And it's just one of the hilarious things that happened.

Juan Salinas [00:43:20] Was there anything else you'd like to share with us?

Juan Salinas [00:43:26] We appreciate your coming out. It's been fun.

Juan Salinas [00:43:28] Our first podcast, yeah, is something new for us.

Juan Salinas [00:43:31] Yeah, yeah.

Juan Salinas [00:43:32] Well, it's it's a new for us, too. I mean, but we're about all things wild in Texas. This is the perfect topic.

Juan Salinas [00:43:40] At some point we have every venomous snake in Texas, really. I think we're missing one now, but we have most of them, and that's not easy to do. There's a lot there's there's a 13 or so. Really?

Juan Salinas [00:43:54] Yeah, I see. I'll see postings like on Facebook and stuff. Oh, here's another venomous snake we got to worry about. It's like it's been here. It's always been here. It's not something new.

Juan Salinas [00:44:05] So you want to show us those Christmas trees?

Juan Salinas [00:44:09] Yeah, that's our next stop. Definitely.

Juan Salinas [00:44:11] OK, well, thanks so much.

Juan Salinas [00:44:14] Yeah, that was fun. Yeah.

Juan Salinas [00:44:16] All right. I'll talk. On the wild side is a production of the Caesar Claver Wildlife Research Institute of Texas A&M University Kingsville. Funding for this project is provided by the Harvey While Sportsman Conservationist Award by the Rotary Club of Corpus Christi. Editing was completed by the talented Gabby Olivares, Andrew

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