CURE Epilepsy Webinar
Epilepsy Service Dogs: The Science Behind the Sniff
September 4, 2025

Alysha Biehl: September, as most of you probably know, is Service Dog Awareness Month. And in keeping with that, today's webinar is Epilepsy Service Dogs: the Science Behind the Sniff. This webinar will be hosted by our very own, Channing Seideman, our Community Engagement Intern. Channing and her family have long been supporters of Cure Epilepsy through their events and fundraising and awareness building and their amazing social media. I'm sure she will give you all her handles so you can follow her.

And now thanks to the support of UCB, we are happy to call her, colleague. And so, she will be leading today's webinar speaking with our guest, who I will let Channing introduce.

Before we start, just a little bit of housekeeping. I already alerted everyone that we are being recorded, and you can also download transcripts of all our webinars on our website, if that's of interest to you.

We will be taking questions throughout the... we'll be taking questions during the Q&A session kind of at the end, but feel free to type in your questions at any time during the webinar. You can simply type a question into the Q&A tab and then click, send. It's on your WebEx panel and we'll do our best to get to all the questions.

I am going to hand the reins over to Channing. But I'll be here in the background to be helpful, but you will no longer see me. So, thanks so much to everyone. And I turn it over to Channing.

Channing Seideman: Thanks, Alysha. Firstly, I want to thank UCB and their incredible generosity for making today's webinar possible. UCB has been a large part of my personal epilepsy journey, sponsoring both of my service dogs and giving me the opportunity to be a part of Cure Epilepsy's Community Enrichment Program, as well as, of course, helping manage my seizures with Keppra and Nasolam.

I was, had my first seizure when I was nine. And after having my second seizure, I was diagnosed with epilepsy. My family held out hope for years that I would gain control, that I would respond to medication, that I would may grow it.

But that hope was crushed after a video EEG revealed a lifelong diagnosis of juvenile myeloponic epilepsy, and our world turned upside down with that diagnosis. But three years later, we found ourselves in Atlanta, Georgia at Canine Assistants getting matched with my first seizure response dog, Georgie.

And my world was turned around once again. The bond you build with your dog is simply unmatched. And that bond with Georgie was incredible, same as it is with the dog I have now.

But the one story that I just love to share that just really portrays that bond is a story I have with George. And for those who don't know, my life revolves around dogs and horses. And one day I was at the farm with Georgie and I went to go catch my horse.

I had clipped Georgie to the fence, but when I came back from getting my horse, I didn't see Georgie. I saw a highway and I saw a dangling leash and my heart sunk.

But then I heard the jingle and I know that jingle, that's Georgie's jingle. I looked over and there was George. There would been a point when I went to get my horse where she couldn't see me.

And so she, I don't know how, but she managed to tear a nylon leash in half, get to a spot where I was in her line of sight so she could keep an eye on me. That's the bond that you build with these dogs. It's incredible. And I still have that dangling leash, actually, that is [inaudible 00:04:21] to have.

Jennifer Arnold: Oh, wow.

Channing Seideman: My current service dog, Bishop, is Georgie's great nephew. Bishop is different than Georgie because he is a seizure alert dog. He gives me the alert that an aura might, but I don't have an aura. So, Bishop is my aura.

And he had some big paws to fill. He had to fill in Georgie's shoes. But knock on wood, Bishop has never managed to miss a seizure alert.

So, with September being National Service Dog Month, we are excited to bring you, "The science behind the sniff" that saves lives. And it's an honor to introduce my friend and someone who has changed my world and the lives of over 3000 others, Jennifer Arnold.

Jennifer Arnold: Well, that is an incredible introduction and it made me a little weepy. So, please forgive me thinking about Georgie and even Bishop. They've become parts of our family here, too.

I'm the Founder and Executive Director of a service dog school, Canine Assistants, and I'm excited to be here with you this afternoon, this evening for me in Eastern time. And I know I'll be able to give you information. I hope it will be helpful to you.

I hate epilepsy. It's something that, I mean, I have a visceral hatred of it. And anything, anything we can do to make it better, we will do.

So, I'm going to tell you, I got questions as people registered for tonight, and if I think about it as I'm going through just not many slides, but a few slides with you guys, we'll answer those questions.

If I don't get to them going through the slides, at the end of the slides I will answer those questions. And then any other questions you guys have as I'm speaking, please don't hesitate to ask them. And at the end I'll answer them and I'll give it my best shot to give you all the information that I possibly can.

So, if you want to go to the next slide. I can't share my own screen. I could do it at practice, but tonight I failed. So, if you'll advance to the next slide, that'd be great. There you go.

We are based just north of Atlanta in Milton, Georgia. It's about 45 minutes north of Atlanta, and we've been here since 1991. So, we've been around for a while now.

You want to go to the next one? Okay, new slide.

And we raise our dogs here. And despite the fact that it said training on our sign, we don't use that word here anymore. We don't train. We teach. And I'll explain more about that as we go along.

But we raise dogs here. We, pre-COVID, were at about an average of 120 dogs on the property at any given time in school. And we now have about 80 dogs here.

So, we cut back. We're doing more research and facilitating a home school program that I will tell you guys about as we go along. So if you'll go to the next. Great, here we go.

I'm going to tell you first who we serve. We work with people who have a need for various assistance dogs excluding signal dogs for people who are hearing impaired and guide dogs.

But we do medical alert dogs. We work a lot with epilepsy because, as I've already told you, that's my personal nemesis. And we also work with Type 2 diabetes and Addison's, a number of other conditions where dogs and their ability to scent changes in the human body and provide assistance.

We also work, if you want to advance to the next slide, we work a lot with people who have, oh, that's one of our, okay, sorry, have to stop and tell stories. I try to go in a straight line. Sorry. But I have terrible ADHD. So, I never end up going in a straight line. I always end up squirreling into stories.

But this is a wonderful young man from New York, who had gotten his dog just several weeks before this photograph when he was in the EMU. And the parents thought that Fanta, was the dog's name, that Fanta would be okay if the dad just took her home at night, that she would be fine and mama would stay at the hospital, and Fanta would go home with the dad.

Well, about 20 minutes after the dad got home, he had to call the mom who said, "What is that horrible noise that I hear?" And he said, "That's Fanta."

Fanta is howling this grief-like howl. She just went nuts being separated already from her boy. And they ended up having to take her back to the EMU where she spent the duration of his visit mostly in his arms as you see him, see her right now.

Okay, next slide, please.

In addition to placing dogs with people who have medical needs, we have also a number of dogs now in pediatric hospitals across the country and some adult hospitals even. Our dogs are, just the way we raise them, I think, makes them really good at doing this job.

So, next slide.

We also work with people who have mobility difficulties, people who use chairs. So, our dogs learn, and this is helpful for all recipients, our dogs learn to do things like tug open doors and pick up things that you drop.

Let's look at the next slide maybe. There you go. Retrieve medication. They're good at those things. That's easy and fun for a lot of them.

All right, next.

Okay, they can help tremendously. If we say, we look at, when someone applies, a Canine Assistants, what we're looking at, and there is no age limit for us. A lot of organizations do have age limits. We will take applications from really all ages.

When you are talking about a dog who is with a really young child, the dog ends up functioning kind of as mama or daddy's lieutenant commander. But that was one of the questions asked. So, I wanted to say that at Canine Assistants, there is not an age limit.

In addition to the things that dogs can do physically and medically for people, and socially, too, I think that the greatest two things they do are they bring enormous joy as you can see here. And go to the next slide. They help people feel safe. And I can't think of anything that's a whole lot more important than that.

So, I'm going to tell you a little bit about in my years here, I have come to appreciate dogs just more than I can tell you. I knew they were wonderful before we started. That's why, I actually started the program because I was diagnosed when I was 16 with multiple sclerosis.

I got sick my junior year in high school. I woke up one morning and got up to go to the bathroom and I kept falling on the floor. And I'm so pig headed that I kept getting up and falling all over again.

But I was hospitalized. And back then in the old days we didn't have MRIs, yet. So it was a clinical diagnosis and one based on what they saw in my spinal fluid. My diagnosis has since been changed to relapsing, a related condition called relapsing polychondritis.

They think that initial episode was probably Guillain-Barre, but I was told that I would likely use a wheelchair for the rest of my life. And I didn't know anybody other than people who were really old that used wheelchairs. I mean, I knew no one. So, I didn't handle that very well. I fell apart.

And my dad, I was the fourth and final child. I might've been a little bit of a surprise, I hope a good one to my parents. But, my dad's practiced by the time I came along, he was an eye surgeon in Atlanta. It was well-established and we were able to spend a lot of time together. So, he was my very best buddy in the whole world.

And my dad had just read, he got really excited when he remembered that he had just read an article in a magazine. It was one of the big medical journals, maybe New England, but it talking about a woman from California named Bonnie Bergen, who for the first time in the world was using dogs to help people with conditions other than visual impairment. And she specialized in dogs assisting people who had mobility impairments.

And my dad, when he realized that I was falling apart and not willing to kind of get out of my bed and try, he called her. And, unfortunately, she had at that point, four or five dogs in her house. She was just starting out; sending a dog across the country to Atlanta was not going to happen.

But my dad had this great idea. If I needed a service dog in this area, and we'd always been big animal lovers, especially my mom and I, if I needed a dog in this area, other people would, too.

So, he sat on the edge of my bed one night and said, "I would never tell you this is why you got sick, but maybe this is something we can do with the fact that you got sick. Maybe we can start a program of our own."

And I thought, "Wow, that is a great idea." I mean, it really helped me because who better to teach dogs to help people in chairs than somebody who was using one? So I was super excited about that.

With my blessing, the Friday after Thanksgiving in 1980, my dad went to CPA to start the establishing a nonprofit. And they, again, my blessing, named it Canine Assistants.

And, unfortunately, my dad was hit by a drunk driver walking home from my grandmother's house. She lives just one street over. And he was on a sidewalk that goes around a big park in Atlanta and a drunk driver on a motorcycle jumped up on the sidewalk and hit him. And he died the next morning in the hospital where he worked for most of his career.

And that destroyed me. But I held on to the idea of starting this program. It became the, I mean my lifeline, really. And it took my mom and I, 11 years to raise the money.

My dad was a brilliant surgeon and a really smart guy in most things. He was not a very good business person. And so, we had some significant financial difficulties after he died.

But we finally started in 1991. And I don't think there's been a week here that I haven't fallen more in love and in awe with dogs. They're just stunning animals to me. So I'd like to tell you a little bit about what I think makes them so extraordinary, and then I'll tell you what we know about how they can recognize seizures and we'll get into specifics.

But if you'll go to the next slide, that'd be great. Okay.

So at Canine Assistants, we raise our dogs. We started with all rescue dogs, and I still believe with all my heart that you can adopt a dog who can learn to do this.

We just got to the point where we needed so many dogs that it made sense for us to start a breeding program of our own. And we do that now. So, you can see they start when they're really young.

If you go to the next. Oh, I don't think I had a slide, a cute little slide of a puppy, but go to the next slide and I'll talk back about raising them. Oh, there you go. I didn't take it out.

So, they do start really young around here. We stopped training dogs about 14 years ago when I realized, when we first started, the methods used with working dogs were pretty rough. They were pretty old school. It was choke chains and pinch collars and yanking on the leash. And that felt incredibly uncomfortable to me and to my mom, and to most of the folks here.

So, as time went along, we drifted more and more into positive reinforcement. But despite the fact that we were using positive reinforcement, we saw enormous anxiety in our dogs. Going into our recipient camps, which is a two-week period when people come here to get matched with the dog and to learn how to work with their dog, going into camps when we trained, we would put our dogs on Imodium because we knew they'd get terrible diarrhea.

And I assumed, as did my husband, who I wisely married a vet, a brilliant veterinarian, we both thought it's because we're using more treats. But when we stopped training, that diarrhea went away even during camp. So, I don't think it was ever the extra treats.

I think the vast majority of it was anxiety in the dogs. And we saw anxiety in them in other ways, and we didn't, this is asking a lot of a dog, regardless of where they're placed.

You're putting a lot of pressure on the dog. And it's not fair to do that if you're not going to do everything in your power to be sure that the dog is as happy, which means, really, as functional as they can possibly be.

So, we started, my husband and I started a little research project of our own. We looked back at the partnerships that were incredible, just amazing partnerships where the dogs seemed really happy, and the people really did well, and the team was really functional.

What we found was those were the people who, I'm sure with great love and respect in their hearts, left camp and really at least over time stopped doing what we told them to do with the dog, and got out of the dog's way, and started letting the dog figure things out on their own. And that gave us some pretty good ideas.

So, we developed, about 14 years ago, as I said, a new approach to educating dogs that we call bond-based. So, using the bond-based approach, we no longer train the dogs to sit, down, stay, shake. We really don't use commands. They're not super necessary. We found they're not necessary really at all.

We talk to the dog. So, when you ask a dog to sit, what you usually mean is, "Be still for a second, please." So instead of demanding that the dog put their haunches on the substrata, as sit has been defined, we simply say, "Can you be still for a minute, please?"

And remarkably, they do. They're still. Dogs are willing to work with us, they really are. They just need to understand what we're asking of them.

So if you go to the next slide, I'll keep talking a little bit about this. Oh, my babies, getting ready to go on an outing. They're big puppies.

So, we start doing outings fairly young with our dogs. We have a group, we're doing a research project here right now to determine the best time to actually start getting them out in public.

Our standard right now is that they start before they're seven weeks old. They go out in baby slings and with volunteers who have Purell in their hand in case people want to touch them. But, I mean in their pockets.

So, right now, the standard is that they go out really early. My son would fuss at me because the data has not been analyzed by the statistician. But my gut feeling is that we're going to find that it is probably better to wait until they're a little bit older, maybe six to eight, to even 10 months of age.

They need a childhood and that seems to give them a lot of confidence as they grow into adulthood. So we're working on that right now.

All right, next slide.

Okay, so that's a dog who has never, that's a leash, actually, that I developed that has a handle for the person and a handle for the dog. And it allows them to feel like they're kind of holding your hand in a weird way.

But that's a dog in that photograph who was not trained, really, to walk on the leash. He simply learned that he wanted to be next to his person and it was easy. We use a lot of food sharing to get them to that, they want to be next to you part, by the way.

But all right, next slide.

Ah. This is just the magic of dogs to me. So, dogs can recognize, as, well, expressions on people's faces, emotions on people's faces. There are four universal mammalian emotions among them, disgust. And I should have, Channing, actually, has a wonderful photograph with Bishop of her making a face, a disgusted face, and Bishop making it back at her.

But joy and happiness, and disgust are two of those emotions, and they replicate our emotions remarkably well. They're just crazy about us for some reason, which is why they're able to do all this.

Okay, next slide.

If you notice the curvature of the spines, they replicate our posture, as well. Okay, next.

They will imitate gestures, and they will also imitate actions that we take, which is largely how we now teach them using imitation. So, for example, teaching a dog to pick up a pill bottle and hand it to someone, we simply ask the dog to pay attention to us.

We'll say something like, "Watch what I'm doing," and you'll show the action. And then you ask the dog if, "Can you do that like me?" So we call it, like me.

And they learn incredibly fast that way. That's cut our teaching time down significantly and makes it much easier for people when they get home to teach the dogs to do new things. Okay, next slide.

This is one of my favorite things about dogs. You can kind of tell I like them, right? So, dogs have something known as left gaze bias.

And if you start, you're going to be mad at me because you're going to be kind of weird for the next few hours. But if you start paying attention, you will notice that you have a tendency to focus more on the right-hand side of people's faces when you look at them. It's just, emotions can be read more easily on the right-hand side of a person's face, especially negative emotions.

So, we have evolved to focus on just ever so slightly more on the right-hand side of people's faces than the left. It's called left gaze bias.

Dogs show left gaze bias, as well. At this point, they appear to be the only other animal that does this. And dogs only show left gaze bias when they're looking at human faces. So it's something that, obviously, they've learned on their own, which stuns me.

Okay, next.

Yeah, as great as all of those other things are, you are looking right now at one of the most powerful machines known on earth, the nose of a dog. They are extraordinary.

Dogs can recognize parts per trillion in terms of odor molecules. That means a single teaspoon of sugar. And I wanted to check to be sure I was right about this, a teaspoon of sugar in a million, a million gallons of water.

The way that I can bet, because we're such visual creatures, people are, dogs experience all of the world through their noses. We tend to do it through our eyes. And so somebody once, I heard somebody talking about the scent detection abilities of dogs.

And they said in visual terms, what a human could see from a third of a mile away, a dog would be able to see with equal clarity from 3000 miles away. That's how powerful their noses are.

A single rotten apple in 2 million barrels, a single rotten apple in 2 million barrels, their noses are what enabled them to do so many of the incredible things that they do for human beings. Next slide.

All right, so I just find this really interesting so I had to share it with you guys. Dogs inhale through the center part of their nose, but they exhale through the slits on the side. It creates kind of a swirl effect and it prevents molecules going in to the nose from being sort of pushed out.

It's a brilliant design. Dogs... Of inhaled air, about 88% is used for respiration. Normally, about 12% are sent on scent to the back of their nose for evaluation.

Dogs have an organ that sits just on top of the roof of their mouth called the vomeral nasal or Jacobson's organ. And that's where they push air into the vomeral nasal organ, especially air that contains pheromones, which is what we're most interested in their ability to detect. So, because that's what allows them to recognize various medical conditions.

They can't scent well when they're panting. But, otherwise, and especially if they really, and you'll see dogs put their noses up in the air and scent.

And sometimes, a lot of times for our dogs, we first notice that when we're holding a really yummy treat and they love the smell of it, and we'll see their teeth start sort of chattering and you can kind of hear that they gnash their teeth a little bit. Well, they chatter them more. That's them pushing more up into the Jacobson's organ. It's really interesting. And a lot of the seizure alert dogs do that, as well.

So, we owe a lot to the nose of a dog. Oh, look, I love this. That's empathy. Is that the next slide? I'm assuming that it was.

Dogs not only show empathy and there've been some good replicated studies that indicate that dogs do experience a feeling of empathy toward human beings. But they show compassion, as well. So they not only recognize the distress in human beings, they want to do something about it. All of this sets them up to be brilliant as assistance dogs.

Okay, that may be our last slide. No. I think that's our last slide. Oh, that is. Okay. Go back to the one before if you can. Does it let you go back?

Here we go. So I want to talk about this for a minute. So all the incredible things that dogs are capable of doing would be worth nothing if they weren't willing to do it on our behalf. And I feel certain that there are a lot of dogs that can smell that a seizure is oncoming and they just don't know what to do about it.

So, one of the big reasons that we went to bond-based, and obviously, this is an incredibly bond-based dog with this little girl, is because the connection between human and dog is what really ensures that you have the best chance of the dog worrying about the fact that they smell a seizure oncoming.

And one of the questions I was asked was about, do you have to seizure a certain amount for dogs to be able to alert to seizures? And my answer is, if you have seizures that are significant enough to cause distress, then one every six months is likely adequate for the dog ultimately, and it might take them a little longer to alert, a couple of seizures to alert there, but they will get it.

If you seizure 89 times a day and they've become just sort of part of who you are, and no one around you reacts with any sort of distress, the dog is undoubtedly still smelling that smell, but they're going to start to try to block it

out because that's a lot. And you don't really need them alerting under that circumstance, though. That would become kind of annoying, actually.

So, often enough for the dog to remember is kind of, and that's not a great answer, but it's just the reality of it. Most dogs, like I said, if the seizures are significant enough for people around you to react, probably once every six months or so is often enough.

And even, later on it can be longer than that. What we've learned here, okay, so, because I dislike epilepsy so much, I'm no longer using the H-word. I realize it's kind of a harsh word, but I do feel that way. But I wanted to understand when we first started. So this is how we got into doing dogs for people who have epilepsy.

This young man just burst into our office one day, and I mean he did. He found, knocked the door off the hinges. And he came in and said, "My name is Jason. I'm going to need a seizure dog because I've just been diagnosed with epilepsy and I really am not sure I want to live anymore."

And I thought, "Wow, that's a lot." And I was racking my brain. I'd never done this before.

And I thought I saw a show about a women's prison in West Virginia where they were training seizure dogs, but I know nothing about this. But I promised him that if he would stick with me, I would do everything in my power to figure it out.

And we did finally. And he was matched with a wonderful dog. And I got an inside look at what life is like with epilepsy.

And I became, just at that point, we didn't know to what stimuli the dogs were responding when they reacted. There was a school of thought that it was changes in behavior, but I couldn't accept that because, first of all, I had seen dogs do it from the other room. I mean, I had seen dogs be in the other room and suddenly run in and alert their person. So, it couldn't be behavioral. And if mama can't see it, I don't know that behavioral changes are really, I didn't buy that.

The other was that there was some electrical change. And there's still a potential that there's some subclinical electrical change. But we know now that that's not what allows dogs to anticipate the onset of seizures. And they do and they tend to be pretty accurate.

They have to fall asleep. Sometimes when they're sleeping, it wakes them up and other times they're so deeply asleep that it doesn't wake them up. So I can't tell you that any dog would be a hundred percent on it. But they're accurate. I mean, once they learn to do it, they tend to continue doing it.

And we found with our bond-based approach now, and somebody else asked how we imprinted that scent with the dog, how we registered that smell in the dog's brain because it is an odor. We went to the man who's the guru of dog scent detection related to the human body. He's now the provost at Florida International University in Miami. He was then the head of the science department.

And we asked him to help us figure this out. Was it electrical, was it scent-based, as was my gut feeling, or was it behavioral? And the first thing that we decided we would examine was whether or not it could possibly be scent-based.

So, UCB by the way, in addition to underwriting all of the seizure alert dogs that we place, sponsored this study. It just so happened that Dr. Fulton is a chemist. So, we decided to look first at the potential that there was a change in the bodies, the volatile organic compounds the body was releasing.

Dogs tend to, I mean, I've seen dogs, I've personally witnessed a dog anticipate the onset of a seizure in the EMU at about a little over two hours, two hours and 10 minutes in advance of onset. I have many anecdotal reports of dogs anticipating onset earlier than that.

But most regularly, dogs will be somewhere 10 to 45 minutes in advance, we believe. And we're going to do our best to study this next. We know that there are, thanks to the study done at FIU, that there are three volatile organic compounds that the body releases apparently only prior to seizures.

The body may release one of those in response to terror, which is sort of fitting. But we know these three volatiles, they call it volatile bouquet, it only found in the sweat, saliva, exhalation breath of somebody who's going to have a seizure.

Type of seizure doesn't matter. Age of the patient, doesn't matter. As long as it is a true epileptic rather than a non-epileptic seizure your body is going to release those volatiles. And chances are the body releases volatiles, a different odor prior to non-epileptic seizures also. But that's not been our area of study.

So, in the old days when we trained, we would expose the dog to, we would get, we'd collect swabs, scent swabs, just sterile Q-tips that go in a tube. We would have people who were just post-ictal. We know from several studies that I've done with a man named, Ed Ma, who is an incredible epileptologist based in Denver, Colorado. And these studies with Ed Ma showed that the scent seems to last about 45 minutes.

So, I would ask applicants and recipients to collect samples from the palm of their hands post-ictally. And we would use that to imprint the scent on as many dogs as we could. The samples don't last terribly long once you start using them. So that's...

In the old days, too, we really used them up because we would expose the dog to the smell over and over again. And as we got more into positive reinforcement, we would click when they would smell the smell and then give them a treat. So we were pairing the smell with a treat to get them excited about the smell.

And we did it over and over again. I cannot believe that the dogs were patient enough to put up with us because what I've learned since we went bond-based is you really don't have to do that. They smell the smell, they remembered the smell. You remember things you've smelled. The dog simply needs to know how you refer to it.

So, for most of our dogs, it's a single exposure. We let them smell the swab and we say, "Your smell," or "Seizure," whatever terminology we're going to use for a particular dog. And they remember.

And we teach our dogs to answer binary yes/no, either/or questions using our hands. I'm left-handed so when I started this, I did, yes, with my left hand and, no, with my right hand. So. We've kind of stuck with that around here, but it's not necessary.

But we ask our dogs, we'll present a swab and we ask the dogs, "Do you smell your smell? Yes or no?" And they either point their nose toward the palm of our hand. A lot of scent detection dogs don't want to actually put their nose on your palm, which is smart. They learn not to put their nose on the samples.

But they will, it's called a nose point indicator. They will turn their head and look at the hand that they're trying to indicate. So they are, I mean, from the first time you expose them to it, they are right on it. This is not a difficult for dogs to detect.

I'm leaving no time for questions. I'm so sorry. I hope I'm answering some, though.

So, it's quick now, teaching them that happened, teaching them the smell and what we call it is usually accomplished in a single exposure. With Dr. Ma, the studies that we did with Dr. Ma, he would ship samples. I mean, he would send us 200 swabs at a time.

The dogs who were kind of the lead on that study would look kind of in despair at all his swabs they had to go through. But they were either blanks or samples that they had collected every 15 minutes from patients who were in the EMU.

So, what we learned from that is that they are incredibly accurate. Even he would store the samples for a long time and then they'd ship them in a big batch. So it was weeks sometimes coming through the mail.

So these samples had to be really degraded by the time they got to us. And they were still about 87%, and we were using young dogs and experienced dogs, they were about 87% on target always. So, they're good at it when they learn it.

It's not the learning the smell that when you have an assistance dog, it's not teaching them the odor that is the challenging part. Sometimes the challenging part is getting them to go from being able to smell it on swabs to spontaneously alerting you.

So, what we do to make that easier is we ask people to hold out their hands to be sniffed. And then ask the dog, "Do you smell your smell? Yes or no?" And if the dog indicates, yes, we hold out our hand lightly fisted, and this is one time they do, they learn that they do need to touch our hands. We say, "Tell me, tell me." And they nudge your hand.

Before we did the hand nudge, and I probably still prefer the old method, honestly, each dog sort of developed their own alert. I'm sure Channing can tell you that Bishop has an alert of his own but they're remarkably clear. And it just takes, I mean some dogs start alerting immediately. Those tend to be the higher strung dogs.

The more laid back dogs may take a little bit to go from recognizing it when asked to realizing, "Oh wow, I smell it. I need to tell them." But it usually happens fairly quickly.

And once you're matched with a dog, I'm answering questions now from registration. Once you're matched with a dog, it doesn't take very long for the dog to have bonded with you strongly enough to start alerting.

And in terms of ongoing education, Continuing Ed with the dogs, life is Continuing Ed for them. The only thing I would say that you have to do on a continual basis is something I hope you do in all your relationships, which is continue focusing on the bond.

You don't just teach them and then use them as a medical device. They're living, breathing, feeling, thinking creatures who need to become your partner. And so, that's really, in terms of upkeep educationally.

All right, a lot of people have asked financial questions and I want to answer those that I can. I don't know about the specific grants for seizure alert dogs. At Canine Assistants we don't charge at all for our dogs. And we will provide lifetime aftercare, upkeep, veterinary, food, even if necessary, if families need it.

So, it is fairly expensive to have a dog. I would advise you guys not to buy seizure alert dogs if you can help it. And if you do and it's not working out for you, then reach out to me and I'll help you fix it.

Because a lot of times when you purchase a service dog, what you're getting is a dog who's been well obedience trained. And I got to tell you, obedience doesn't have squat to do with this. And in a lot of ways, I would say that the more obedient the dog, the less likely they are to spontaneously alert because they're waiting for you to give them some directive, another reason that we decided to go bond-based.

But there are a lot of people out there. I know there are places that sell dogs to help people who have epilepsy, who are reputable. I have not had experience with any of those. I tend to have more experience with, "Help me, help me. I've spent $50,000 or even $20,000 on this dog and the dog won't do anything."

All right. So, really quickly, not on the list, but I need to tell you this. We have a homeschool program now. And so we will help people raise and educate their own dogs. You can do it.

Some insurance does cover dogs, but it's incredibly rare. Incredibly rare. It's worth reaching out to your provider and asking. Sometimes you can get them to cover upkeep, but you're going to want...

And dogs of NEA, you're going to want to, if something happens and you need help with veterinary care, et cetera, I mean, you're going to want to be sure that you've got the money to do that or a program like ours to back you up.

And I have to say, in terms of raising money, social media is a brilliant place to go because dogs and people love dogs. And when you show an assistance dog in need, it's possible to be able to raise the money for things that you need for a dog via social media.

Okay. Dogs of all ages can learn how to do this. There are programs that don't want you to have other dogs in your home when you get a dog, an assistance dog.

We are not like that. They can absolutely live with pet dogs. As a matter of fact, I think it's great for them to have a buddy. So, it just depends on the philosophy.

Ours is, that's awesome. And they're not going to get so distracted by the other dog that they don't smell their smell, I promise. They just don't work that way.

Okay, what else do we absolutely need to cover? We provide dogs to people in every state. We have a pre-app that we ask you to fill out, really to see, okay, so I'm giving you inside information here. We need to know how comfortable you're going to be with this bond-based approach, how old school you are in your thinking.

So, let that guide you as you answer the questions on the pre-app if you really need our help. Although, I encourage you to be honest with us because it's the

only way it's really going to work. So, we are having great, we're beta testing the homeschool program right now, but having great success with it.

Anybody else? Do we have other questions? I know we have other questions on the...

Channing Seideman: Yeah, so thank you so much, Jennifer. All that information, that was absolutely incredible.

Jennifer Arnold: That's a lot.

Channing Seideman: Good.

Jennifer Arnold: And breeds, wait, let me talk about breeds really quickly.

Channing Seideman: Oh, absolutely.

Jennifer Arnold: All right. Even flat-nosed dogs like Boston Terriers, for example, can pick up the odor. My advice would be that you get a dog who is comfortable working with people. So you notice we use mostly retriever breeds and mixes because they're not threatening to the public. They're used to working side by side with people. They've got noses that are big enough and roomy enough to do a great job of scent detection.

So, we have a waiting list. Everybody has a waiting list. I mean, it can be, we evaluate each application based on how much the dog can do physically, socially, emotionally, and medically. And then that's 50%. And the other 50% is how appropriate the placement is for the dog.

So, it's not first come first serve. But I will tell you that even here, the squeaky wheel gets the grease. So, if you apply here and pester, don't tell her I said this. No one send her a transcript, but our Recipient Services Coordinator, Nicole, call or email her, stay on her. Show that it's a priority.

All right, now I'm all done. Are we done?

Channing Seideman: I think you've answered all the questions and I don't think anyone new ones came in over the site that you did not, or over the webinar that you didn't answer. So thank you so much.

Jennifer Arnold: You're so welcome.

Channing Seideman: If you have any questions that we didn't get to, please feel free to contact us at Research@Cureepilepsy.org and we will see if we can get those answered.

Jennifer Arnold: Oh, may we show our last slide really quickly?

Channing Seideman: Absolutely, Jennifer.

Jennifer Arnold: Can we switch it to, it's just Canineassistants.org. There you go. I just wanted y'all to note, and I'm happy to jump back in and answer any questions if you send it later to Care, to Cure. Sorry. I ran on steam there

Channing Seideman: And like Jennifer just said, if you want more information on Canine Assistants, Canineasstants.org.

Jennifer Arnold: There you go.

Channing Seideman: But thank you all for joining us today. It was great having you. And thank you so much, Jennifer.

Jennifer Arnold: My great pleasure.