There are a few things that make people successful. Taking a step forward to change their lives is one successful trait, but it takes some time to get there. How do you move forward to greet the success that awaits you? Welcome to Next Steps Forward with host Chris Meek. Each week, Chris brings on another guest who has successfully taken the next steps forward. Now, here is Chris Meek.

Chris Meek:

Hello, I'm Chris Meek, and you've tuned in to this week's episode of Next Steps Forward. As always, it's an honor and a pleasure to have you with us again. My guests this week are Dr. Christine Hardy and Dr. Kristin Weishauer of the Flint Animal Cancer Center at Colorado State University in Fort Collins, Colorado. Dr. Hardy is the Associate Director, Development Operations and Strategy Lead of the OneCure program, and Dr. Weishauer is the Clinical Trials Director and they're both on a mission to improve the prevention, diagnosis, and treatment of cancer in pet animals and translating their research and knowledge to benefit people with cancer. We'll talk about the incredible similarities between cancer in dogs and humans and the research that's creating a better understanding of both. Today on Next Steps Forward, Dr. Hardy and Dr. Weishauer, welcome to the show.

Christine Hardy:

Thank you so much for having us. Yeah, it's great to be here.

Chris Meek:

Now we appreciate your time, we know how busy you are. So as you read your biographies, I was fascinated by the fact that you both intended to be physicians rather than veterinarians. And neither planned to work specifically in the area of oncology, but fate and medical diagnosis led both of you to the same career paths and missions. Dr. Weishauer, let's start with you. The diagnosis in question was your own. Share your story of how you went from an aspiring physician to becoming clinical trials veterinarian.

Christine Hardy:

Thanks Chris, that's a really great question. So you know, that sort of thing where when I was a kid, I kind of wanted to be a veterinarian. I had pets growing up and thought that would be really cool, was always interested in science and medicine. Then as I got a little older, I sort of transitioned to thinking maybe I wanted to be a human physician and started out my undergrad studies with a focus on going into medical school. And things kind of changed throughout the years and I went back to wanting to be a veterinarian. And actually in my junior year of college, I was diagnosed with two malignant brain tumors and underwent surgery and radiation therapy for those tumors. And that really gave me an insight into the oncology world. And I was really just fascinated by all the different facets of the diagnosis and treatment options and working with the number of different people that I did in the human hospitals. And so that really kind of sparked my interest in oncology.

As far as clinical trials, after I finished veterinary school, I had the opportunity to work with some really great clinical trials professionals and had the opportunity to see patients that were enrolled in clinical trials in the clinic and also sort of work on the back end learning how to develop and sort of how clinical trials come about.

And it really was something that just sort of stuck with me and really fit a lot of my sort of characteristics as far as keeping good records and things and being attention to detail. And really just the idea of being able to move the needle forward and help patients, both pets and people with cancer, was something that really just stuck with me and it really became a passion of mine.

Chris Meek:

And Dr. Hardy, in your case, the diagnosis was that of a family member. Share your professional journey with us, please.

Christine Hardy:

Yeah, sure. Well, I knew I always wanted to study medicine. I grew up in a medical family. My dad's a physician. My mom's a nurse. And I have two siblings with some major medical issues. I think the transition into veterinary school was when my eyes were opened by another female veterinarian that I had the privilege of spending some time with. And once I understood that really excellent care can be given on the veterinary side, it was a.

It was a pretty obvious choice for me. Fast forward into my senior year of veterinary school and once I understood the connection between veterinary oncology and human oncology, and that was kind of a retrospective aha for me. So my brother's a childhood leukemia survivor. And I know we'll talk about this a little later in the podcast, but that is the A cancer type that we have made incredible progress on.

Had Russ, my brother, been born in the 50s, we probably wouldn't have him today. But his success really is to be credited to clinical trials that were done in the past. And thankfully, I can tell you, he's alive and doing really well. So it was pretty obvious. Once I understood the connection, then it was a no-brainer, and this is how I've dedicated my career ever since. It was meant to be, you're right.

Chris Meek:

Was meant to be. And another thing I noticed is that both of you own dogs. Now, my listeners and viewers have had the distinct pleasure of meeting my 30 pound killer Shih Tzu Zeke several times when the UPS guy comes, or Amazon. But tell us about your dogs.

Christine Hardy:

So I have two dogs. One is named Avery. She is a pit bull mix. She's about almost seven years old. And then I also have a four-ish year old Brindle Boxer named Waldo. And our family is made complete by Jesse Bean, the nearly 14 year old border collie, and Pepper, who we were fortunate enough to find as a starving stray dog along the side of the road in New Mexico a little over a year ago.

And it turns out she is joy wrapped in a tricolored coat. We call her the freight train of love. So she's our sassy New Mexican chili pepper. That's how she got her name.

Chris Meek:

I love it, I love it. And both of my dogs are rescues and so I appreciate that. And you just mentioned something there, Doctor, a former colleague of mine, she said, dogs bring love. And I just love that phrase, it just stuck with me ever since that.

Christine Hardy:

Yeah, I think they are the embodiment of what unconditional love really looks like.

Chris Meek:

Exactly, exactly. So tell us about the Flint Animal Cancer Center. How did it get its start?

Christine Hardy:

Yeah, this place got its start in the late 70s, early 80s with a man named Steve Withrow. And he's really known as the founding father of veterinary oncology. We were just really fortunate here at CSU that he came here as a young faculty member. He had already had an exposure during his training at Sloan Kettering Cancer Center in New York City, which was co-located or in the same city, if you will, as to where he did his surgery residency.

And he made the aha leap of, gosh, what he was seeing in the human cancer patients was probably very similar to what he was experiencing with veterinary cancer patients, although that was ahead of when we were actually formally treating veterinary patients for cancer, if you will. And so when he came here,

he was actually challenged by the dean at the time to consider establishing a cancer center. Steve already had an interest, and the dean believed that it was something that would be possible.

Lots of people thought he was crazy, but as it turns out, that idea of, gosh, what I'm seeing in human cancer patients may very well be the same as to what I'm seeing in veterinary cancer patients. That became the foundational premise of this place. And really, it's our mission to improve the future for all cancer patients leveraging the platform of comparative oncology, which is that idea that what we learn not only helps pets, but may also very well help people as well.

Chris Meek:

And what's in the name OneCure? How did it come about and what does it mean?

Christine Hardy:

Yeah, well it came about thanks to a really wonderful client of ours who brought her dog to us for treatment for bone cancer. Her name is Meg O'Neill and she had just lost her mother to cancer, had an experience with her dog. I mentioned bone cancer, that is actually one of the cancers that tends to be very similar between pets and people. And Meg is a logistics expert. Literally the way you get your Starbucks or your Nikes anywhere around the world is thanks to Meg and her company. And she had heard a little bit about this concept of one medicine, this connection between pets and people, did some of her own research, and then I got a phone call one day from Meg, and it didn't take me long to realize when she had said, listen, you guys are really onto something, but people don't know the value of this, and I think you could tell this story. And so...

She said, I think it should be called OneCure. I've developed a logo. I've started test marketing some product. And I invited her to come out, and that was about 12 years ago. And while we were already doing clinical trials, that officially branded our efforts within that space.

Chris Meek:

That's amazing. I had no idea. She actually already had the name and the branding and marketing and that's incredible.

Christine Hardy:

She did. Yeah, oh yeah, it was a real aha moment of, you're right, why don't you come out here and help us and then let's all work together and it's really become something pretty remarkable. Yes, she is, she is a force of nature.

Chris Meek:

Force of nature I love it. I love it. Dr. Weishart, what is a clinical trial and how do they help your patients and potentially people?

Christine Hardy:

Yeah, so clinical trials is sort of just a broad general term to describe research that's used in pets and people with certain diseases to try to move the needle forward and find new ways to prevent, diagnose, or treat a disease. And so really, this is the best way for us to advance medicine and move things forward. And we learn so much from the clinical trials, and this is really how we have an impact in the clinic.

It's sort of a broad term, so it can represent a variety of things, but the important thing to know is that these are research studies in people and pets that have spontaneously occurring diseases. So in our case, these are, you know, clients are bringing their pets that have been diagnosed with cancer to the cancer center to find out about treatment options. And we talk to them about our standard treatment options as well as clinical trials. So we're not inducing cancer in these pets in any ways. These are, like I said, spontaneously arising cancers. So there's really kind of a broad spectrum of the term clinical trials. So they can range from something very basic where we're just taking a sample of either tissue or blood from a pet and that's sort of the extent of it, or they can be a more longer term study where we're following pets after they're getting a certain treatment and seeing how they respond to disease. And even in the treatment area of clinical trials, there's a wide variety and a big difference among trials. So some of these sort of early phase studies were looking at a new drug and were trying to find out what the best doses to use in pets. So that might be looking at drug levels after the drug is given to see if we're sort of getting to where we're looking for, also looking at side effects and kind of figuring out where to go forward with a drug. And then more late phase studies where we're actually looking to get FDA approval for a drug, so testing this drug in pets with a certain type of cancer, comparing it to our standard of care treatments that we use, and hopefully being able to actually use that drug in the clinic with our patients moving forward.

So, and also there's, you know, with these clinical trials, they usually have a specific variety of visits that are required and procedures that are specifically done at each of those visits. So, it's really important that we follow those protocols and procedures very specifically. And so, when we have clients that are interested in enrolling their pets in a clinical trial, it's very important that we relay all this information to them, let them know what's expected of them when their pet participates in a clinical trial and also making sure they understand what potential benefits and risks there are for participating in a clinical trial. So that's kind of where the ethical aspects of this come in and making sure that they are aware of what, you know, sort of what is gonna happen when their pet's enrolled in a trial. And we do that through an informed consent document. So these are used in human clinical trials as well that sort of lays out exactly what's gonna happen when their pet's enrolled in the trial, discusses potential benefits and risks.

Talks about funding and knowing conflicts of interest and things like that, all the important information that they need to feel comfortable in rolling their pet in a trial. And we make sure to go through that thoroughly with them and have them sign it before we do anything related to the clinical trial.

Chris Meek:

And when people hear the words cancer research, and myself included, they may think of all sorts of things. For decades, much of the focus seemed to be on tests conducted on mice or monkeys. So why dogs?

Christine Hardy:

Yeah, that's a really great question. So dogs are actually a really great model for cancer in humans. And so in our clinical trials that we're doing on pets, of course, we're trying to find better ways to treat and diagnose pets with cancer. But we can also take what we learn from these dogs and apply it to cancer in humans. So as you mentioned, a lot of cancer research is done in the lab whether that's on cancer cell lines or mice or rats that have been injected with tumor cells to create cancers. And as you can imagine, while it can provide us with a lot of important information, that may not necessarily translate to what we're seeing in a person who has a spontaneously developing cancer. So, like I said, in mice and rats, these are generally experimentally induced tumors, so we're injecting tumor cells in order to make the tumor grow. And oftentimes, to make those tumor cells grow and develop into a tumor, we have to suppress their immune system. So make sure that their immune system isn't fighting off those cancer cells like our immune system is supposed to do. Also, these are purpose-bred mice that all have similar genetic backgrounds, unlike people that are diagnosed with cancer or people in general and also have very specific environments. So they're living in a lab and very specific housing with food and water that's sort of similar among all these mice and rats. And so while we can learn things from these animals, they may not necessarily translate that well to humans. So dogs can actually sort of bridge that gap between the studies that we do in the lab and what we're doing in people. And so dogs, as we mentioned, have spontaneously arising cancer, similar to people. They have very diverse genetic backgrounds and also the environment that they're living in is very similar to what people are. So most of our dogs are living in our house, eating our food, drinking our water, even sleeping in our beds, you know, and so they're exposed to a lot of the same environmental factors that people are that develop cancer. We also see an increased incidence of cancer in dogs as they get older, much like we do in people.

Christine Hardy

And the tumors that we see in dogs are actually the same types that we see in people. They look the same under the microscope, they behave the same way, and they can respond to the same treatment. So a treatment that we see to be effective in dogs can be effective in people and vice versa. So it serves as a really great model. And incidence of cancer is also similar. So we see...

In general, one in three people, one in four dogs, and one in five cats will develop cancer within their lifetime. So, we see enough dogs, unfortunately, with cancer that we can do the research that we need to do to be able to find these answers. We can also do it in a more rapid fashion. So, unfortunately, our dogs don't live as long as people do, but in that way we can do the research a lot faster and often for lower expense. And so a study that might take five years to complete and get the results of in dogs might take decades in people. And so it can really speed up those results and get us to where we're trying to go faster. So just, you know, in general, these are studies that we can do in dogs and can provide information about what can help dogs as well as people with cancer. It's not always going to be, you know, 100%. It's not that everything that works in dogs is necessarily going to work in people and vice versa. But at least gives us...

a little bit more leeway to pick out treatments that have the potential to be more effective in people. One more thing is that from a genetic standpoint, mice and rats, rodents are only about 62, 65% like us. Dogs, however, believe it or not, genetically, we're about 85% the same. So they're a lot closer to us genetically as well. So I think that the real short version is they're a lot like us and they help to bridge that chasm, if you will. They may, literally, some of these answers to cancer may be walking on the other end of the leash.

Chris Meek:

So maybe as a follow up to that, are there specific challenges or limitations when translating research findings from dogs to humans? And if so, how are they addressed?

Christine Hardy:

Yeah, and you know, kind of like I mentioned, it's not necessarily gonna be that magic bullet that we find something that works great in dogs that's gonna be able to translate to humans, but it's really just having that extra information that is more relevant and more applicable than what we're doing in mice and rats. And so we always keep that in mind and think about that when we're doing the research.

Chris Meek:

What's a typical day like for a cancer researcher and what are the key responsibilities and tasks involved in your work? Is there a typical day?

Christine Hardy:

So, you know, my position is a little bit unique in that while I do conduct some of the research on my own, a lot of the time what I'm doing is helping to facilitate research for investigators in the cancer center. And so what we do is we have a clinical trial service here at the Animal Cancer Center that's comprised of two technicians and a clinical trials coordinator and a clinical trials intern.

as well as myself. And we bring patients in that are enrolled in clinical trials and perform diagnostics and procedures as required by the study, giving the cancer treatments, and also work on recruitment. So talking to clients who have brought their pets in for a diagnosis of cancer and informing them about clinical trials options and helping them to make the best decision for their pet and for themselves.

And then I also work sort of on the back end with these investigators and help them to get their clinical trials going. So, you know, when they get funding for some type of clinical trial, I'll help them to, you know, get all the data collection forms that we need, make sure that we're advertising the clinical trial, make sure people are aware of it, and sort of help them as we go through the trial to let them know where we're, how successful we are at enrolling patients, if there are any obstacles that we can potentially circumvent to have better enroll and also to see how the patients are doing throughout the study. You know, if we're seeing some sort of significant or unique side effect, making sure they're aware of that and making changes as we need to. I was just going to say my role is quite a bit different than Kristen's. In that I often see myself as somebody who, my job is to make sure that everybody else can do their job. When it comes specifically to wine cure and clinical trials,

Chris Meek:

Are there any life, oh sorry, go ahead please.

Christine Hardy:

My goal is to really help to raise public awareness, so thank you for the opportunity to talk about this. The reality is for us to conduct these clinical trials, it requires both financial and human resources to make that happen, and that we've been really fortunate that Meg, the founder of OneCare, if you will, here, she's the client that I referenced earlier, she helped to get us started. Since that time. There have been a lot of people that have joined the cause, including our mutual friends, Graham and Courtney Rahal. And it's thanks to their support and other financial donors like them that they have helped to fund this mechanism. So literally, we know that Dr. Weisshaar's salary and that of her team is covered, and there is money available to actually help support the research. And that supplements the money that comes in from the National Cancer Institute, or various other funding sources that helps to cover the cost of conducting these trials. The other thing that's really important is that we partner with the owners on the cost of cancer treatment. So it's typically quite expensive. Any specialty care is. Typically the real difference between veterinary medicine and human medicine is on the human medicine side. If you go in and you're treated, your insurance probably picks up the vast majority of the cost. Here in the United States, less than 5%, actually less than 3%, of dogs and cats are covered by health insurance. And so it's almost always an out-of-pocket expense. Given that, veterinary medicine is significantly less expensive on a, you know, like when I get my bill for a CT, for example, it's a fraction of the cost as to what my insurance would pay for my own CT if I have to have one on the human side. And that said, it can be expensive. And so each of these clinical trials comes with a partnership opportunity from a financial standpoint. So we help to offset some of the costs for the owners. We're also fortunate to have some patient assistance funds. And so we really try to reduce the financial burden for the owners. I can tell you as a veterinarian, one of the very worst things is to know you can do something and that finances

become your barrier. We do our best to eliminate that as an issue. And truthfully, you know what Dr. Weissar was talking about in terms of the commitment for the pet owners to participate in these clinical trials, pretty frequent visits. And so in a lot of ways, it's our way of saying thank you for your commitment to participate and let's, you know, you're doing your part by bringing your pet, enrolling them in this clinical trial. You're helping us to learn not only for the benefit hopefully of your pet and future pets, maybe also for people. And part of our thank you is to help financially offset some of that. It makes it a lot more attainable for a lot more people.

Chris Meek

Well, this is a perfect opportunity. If people want to get involved and donate, where do they go?

Christine Hardy

Yeah, so OneCure.com is, that's our website. You'll learn all about the program there, both why dogs, what the clinical trials program looks like here. There is an opportunity to donate via that link as well. We very much appreciate whatever support can come in. We are, you know, we conduct, oh gosh, how many clinical trials are? About 30 unique trials per year. Yeah, so it's quite a number. It's a lot of patients that are enrolled. So how many patients roughly and how many visits would you say over an annual? So usually about 120 patients enrolled in a trial per year and we see approximately 800 appointments and 135 unique patients per year. Yeah. We're busy. They're really quite busy and we want to continue doing this work and funding this research and we're ready to expand this. And so, you know, this support goes directly to funding this program and making certain that we are doing the work. And by the way, this is in concert with our general oncology service where clients have access to medical oncology, surgical oncology, radiation oncology, all within one service. So it's a comprehensive service. And our clinical trials team works together as part of that overall service. So for example, if my dog is enrolled in a clinical trial, and for whatever reason, maybe they're having really adverse effects. There's always the option to be transferred back to the regular service and to continue on with whatever standard of care is. Often we say it's standard of care plus or minus something. That's a big generality when it comes to clinical trials. But the point is that we are always focused on what is the best thing for the patient. How do we preserve their quality of life along the time of their treatment? And, you know how do we do right by them and their owners and work all together such that we can both learn and very importantly, take good care of the patient that's right in front of us. The other thing I'll add to that, while donations are wonderful and we appreciate anything that people can do, one of the biggest things that people can do to help is to spread the word. So there are people out there that don't realize that pets can get cancer let alone that there are people out there that can treat it and there are options and clinical trials. And so, you know, if you're watching this, if you can just tell five people that what you learned today, that makes a huge deal. And they tell five people and they tell five other people, the word of mouth is a huge thing for us. Yeah. And maybe the last part that I will add, cause I know we're going to break here in just a moment, is that... We're not the only oncology center across the United States. In fact, there are veterinary oncologists like Dr. Weissar, like other members of our team. And your listeners, by searching for veterinary oncologists near me, they could very easily find a veterinary oncologist. So a lot of people think that cancer diagnosis is a death sentence in a dog or a cat, and that is not the case anymore. There

are lots of options. The key is to find an expert in the field to understand what your options may be. And one of the greatest opportunities that pet owners have is to enroll their pets in a clinical trial. Think of it as one of the most important contributions to public health.

Chris Meek

Again, that website is onecure.com. It's the word one, O-N-E, cure.com. We've been talking to Dr. Christine Hardy and Dr. Kristen Weishauer. And we'll be right back after a short break.

Christine Hardy

Can you tell us what we need to get to surpass that? What do we do in here? What should we eat for? Oh, oh, we can do that. Well, we both really effing hate cancer. That's why we're doing this. How about that? Yeah. Something tells me that your listeners, I mean, truthfully, I don't think I've ever talked to somebody who hasn't been touched by cancer in one way, shape, or form. This is something that is a ubiquitous experience, right?

Chris Meek

I think it was eight. It's not a lot. But just say F cancer, right? That's it.

Christine Hardy

So it's one of these things that I'm like, it's kind of a non-controversial mission. Nobody likes cancer. Most people like dogs. We'd love the cancer to go away, and isn't it great that dogs can potentially help us with that? They are helping us with that.

Chris Meek

Totally agree. Win-win for everybody. I totally agree with that.

Chris Meek

All right. Let me put some more lipstick on here.

VoiceAmerica

You are listening to Next Steps Forward. To reach Chris Meek or his guest on the show today, please call in to 1-888-346-9141. That's 1-888-346-9141. Or send an email to chris at nextstepsforward.com. Now, back to this week's show.

Chris Meek

And we are back. I'm Chris Meek, host of Next Steps Forward. My guests today are Dr. Christine Hardy and Dr. Christian Weishauer of the Flint Animal Care Cancer Center at Colorado State University in Fort Collins, Colorado. They're on a mission to improve the prevention, diagnosis, and treatment of cancer in pet animals and translating their research and knowledge to benefit people with cancer. Dr. Hardy, you mentioned the first half of the show, two people that you and I especially admire are Graham and Courtney

Chris Meek

but also the nonprofit that I co-founded, Soldier Strong, by connecting them with revolutionary technology. Would you share Graham and Courtney's connection to OneCure and what their support and involvement means to the Flint Animal Cancer Science Research?

Christine Hardy

Yeah, absolutely. Yeah, Graham, according to you, you're absolutely terrific. So we were connected via a really wonderful Colorado-based philanthropist who tends to like to kind of fly under the radar, if you will. She happens to be a major sponsor in racing. She is one of Graham's sponsors, and she can put any logo she wants to on that car. She has been associated with us for a very long time. Once she knew about the OneCure initiative and our goal to also raise public awareness, she chose to, on our behalf, sponsor Graham with the OneCure logo on Graham's car. Just so happens that Graham is also very phil anthropically minded, motivated. I think that was because of his wonderful connection with Mr. Paul Newman early on in his life. Paul is, was very active in helping children, in particular with cancer through Camp Hole in the Wall. That was his, one of his many contributions. In fact, I went to a camp very similar to that with my brother when I was a kid, when he was a kid. And so that connection of kids with cancer, Grandma Courtney also happened to have dogs. They loved dogs once they understood that connection between dogs and people and making a real difference when it comes to cancer, they were all on board. So, Grandma's become, they both have become incredible spokespeople for us. As you mentioned, they have chosen through their foundation two really wonderful charities, ours and yours. And we've had the great opportunity of kind of meeting you, your staff, myself, and some members of our team here at a variety of different events. And Graham has really, I think, helped both of us further our causes through public awareness. And they financially support both OneCure and Soldier Strong through their foundation. In fact, we have leveraged their contribution to help fund. A clinical trial that was very successful in dogs with bone cancer. So it's a combination therapy and just for a little bit of background if that's okay with you, bone cancer is a very common cancer that we see in dogs. Happens to also happen in people. When it does, it almost always is a pediatric cancer. Happens in the same bones, same locations, behaves the same, we treat it the same. This also happens to be a cancer that has been a real challenge for us to treat and make major.

strides forward against, if you will. Way back in the day, Dr. Withrow, who founded the Flint Animal Cancer Center, was a pioneer in developing a surgical technique called the surgical limb spare. So literally, instead of amputating a limb, which, by the way, we often say that dogs are born with three legs and a spare, by and large, they do fine with an amputation that is still often our primary surgical treatment for that disease, assuming that they have a cancer in their limb.

However, a lot of parents see that as not the best option to consider an amputation. So Dr. Withrow, it wasn't a unique idea, but he was the first person to do it successfully in dogs repeatedly. And then he worked with a human cancer surgeon in Denver. And actually one of the very first patients is a personal friend for my husband and I. Literally Dr. Withrow was in the operating room with Dr. Wilkins, performed his limb spare was nearly 30 years ago. I'm happy to tell you Travis is still doing well, still walking on that leg, and that is an adaptation of the surgery that was developed in dogs. So that's one thing that was developed a long time ago. That was 30 years ago. This trial called the Losartan combination trial that Dr. Weissherr and her team conducted enrolled dogs who already had metastatic disease, which means that the cancer had already spread to their lungs. That's the terminal phase of that disease. Dogs typically only live for a few weeks, maybe a month or two if you're lucky, once the disease has gotten to that point. We had dogs living out well over a year often. So about half of the dogs had a remarkable response to the point where we then worked, we already have a partnership with University of Colorado Cancer Center and the pediatric hospital in Colorado. The results were strong enough that and the drugs, by the way, that are used are already well known on the human market. So we were able to move that forward very quickly. And I'm pleased to tell you that we are now enrolling children in that clinical trial, the same clinical trial that the dogs benefited from, both in Denver and now one of the children's hospitals in Atlanta has signed on. And we're hoping to open a third enrolling site soon. So the support from Graham and Courtney, we have earmarked. And this is the first a human clinical trial ever funded by a veterinary institution. So we're really, really proud of that and we're very hopeful that the kids with metastatic bone cancer benefit like the dogs did.

Chris Meek

I want to stick with Graham for just a minute, if I could. He was one of the very first guests I had in the show three and a half-ish years now. And he talked about his interest in philanthropy because of, to your point, Paul Newman. And I actually have the book behind me that Paul wrote called Newman's Own. And I live about four towns over from where Mr. Newman lived and just that the footprint here that he's left. But I think to Graham's point, he was 19, we started driving for Paul Newman. When you're 19, you're not thinking about philanthropy, but Graham was. And so I just want to tip the cap to him one more time and Courtney, obviously, because the work that they do is just so invaluable.

They're an incredible partnership. This past year, Graham and Courtney absolutely rolled out the red carpet. And we hosted a boy named Colin, who is a bone cancer patient in Atlanta at the race at Birmingham. And honestly, Graham made him and his family honorary members of his team. His name was on the car.

Dr. Dan Regan, who is the PI of the Losartan trial that I was telling you about, is now collaborating with the pediatric cancer centers. He was at the race along with me. And Graham and Courtney, it was incredible. We were at the Barber Museum. That museum actually allowed us to come in after hours, have a tour with Bobby and Graham and Courtney. It was incredible. I think it was really a full circle opportunity for Graham and Courtney to see the impact of what they're supporting to understand that This really is meant to ultimately benefit kids like Colin. So yeah he's very forward-thinking and he really thinks about helping others and It's not just something he talks about. It's something he really follows through in action.

I think that's one of the things that's really special about Graham is that one cure is not just a name on his car or a name on his helmet. It actually really means something to him. He's behind it and he supports us and that it means so much to be able to have, you know, a public figure, figure like he is to back us and to get the word out there. So we really appreciate everything that he and Courtney have done for us. Yep. Oh yeah. They're clearly a team. We all know she goes faster than he does in a car. He doesn't like to talk about that.

Christine Hardy

I know, I know, I always like to rip up just a little bit about that. He knows, he knows, but they're an incredible team. We're very, very grateful.

Chris Meek

No question. And to learn more about the Gram and Courtney Rahal Foundation, that's gramrahal.com, R-A-H-A-L, gramrahal.com, that's for you, Gram, I had to give you a plug, because we love you and we owe you. So, doctors, you've been talking about all this research and the clinical trials. How can the general public support and stay informed about cancer research and its progress?

Christine Hardy

Yeah, that's a really good question. OneCare.com is a great place to start in terms of learning about comparative oncology. So when we talk about how pets can help people, that's really what we're talking about is this concept of comparative oncology. So that's one really great resource. Kristen, what other resources come to mind? You know, um yeah, so I think if you have a pet that's diagnosed with cancer, starting with your local veterinarian, because they often have insights into if there's a veterinary oncologist in the area and clinical trials that may be going on there, there is also a online searchable database of veterinary clinical trials, not just for cancer, but for any type of disease. It's on the American Veterinary Medical Association's website, the AVMA website. It's called the Animal Health Studies Database. And so you can go onto that website and type in your pet's diagnosis. You can filter it by location, and it'll give you an idea of potential clinical trials in that area for whatever disease you're looking for. So it can be a really great resource for pet owners who are looking for clinical trials options.

And so far as federal agencies go that tend to really oversee a lot of this, the National Cancer Institute is one. The Comparative Oncology Consortium is another. Yeah, so those may be some resources. The American Cancer Society is also one that of course always comes to mind. So they tend to be really up to date on the most current research in the cancer space.

Chris Meek

And what are the most common types of cancer in dogs?

Christine Hardy

So there's a number of different cancers that dogs can get, much like people. One of the more common ones that we see is lymphoma, so cancer of lymphocytes or white blood cells. Very similar in dogs as non-Hodgkin's lymphoma in people. We see a number of skin tumors in dogs very commonly. The most common one is something called a mast cell tumor, which is actually not something that people get, but that's the most common skin tumor in dogs. We also see soft tissue sarcomas, a number of different skin tumors. Bone cancer, like Dr. Hardy mentioned, is very common, unfortunately, especially in larger breed dogs. And there's a whole wide variety, pretty much most of the things that you can see in people you can also see in pets.

Chris Meek

And what are the early warning signs and symptoms of cancer and dogs that pet owners should be aware of?

Christine Hardy

Yeah, so oftentimes these are pretty nonspecific signs. So certainly if you notice any new lumps or bumps in your pet, especially ones that are growing quickly, those are potentially a sign. Things like just decreased appetite, decreased energy level, weight loss, bleeding from the nose or mouth, those are all types of things that might sort of give you a clue that your pet might have cancer. But really the most important thing is to have yearly checkups with your veterinarian because that's the easiest way to find these things. And if there's anything you're concerned about, go see your veterinarian. Pet owners know their pets really well. They know when something's not quite right. And really, it's our job as veterinarians to listen when a client comes out and says, fluffy isn't quite right. I'm not sure what's happening. Maybe it's their breath is different. It's a little stinkier than normal. Who knows? As Dr. Weissauer says, often very nonspecific. But then we do a really thorough physical exam, see if we can find something amiss, follow up with blood work, maybe some imaging like x-rays or ultrasound. And then your veterinarian can be a real great partner either in helping to find this diagnosis or referring you to a center like ours or one of many other centers across the US.

Chris Meek

Are there any risk factors that contribute to the development of cancer in dogs?

Christine Hardy

So, you know, unfortunately, as in people, we often don't know the cause of cancer. So oftentimes we think it's a combination of genetic and environmental factors. As I mentioned previously, age is certainly a factor that can affect the incidence of cancer as we see more cancers in our age and populations, but certainly as in people can see it in younger dogs as well breed predilections for certain types of cancer. So things that we may look for in certain types of breed when they're diagnosed with cancer, we may have a better idea of what type of cancer it might be. But really it's, you know, there's environmental exposures. For example, as we know in people, lung cancer has a really strong association with smoking. And there has also been implications of secondhand smoke for developing cancer in pets. So there's a number of things that can potentially contribute, but generally there's nothing that we can generally pinpoint that this is the cause of cancer, much like in people.

Chris Meek

Cancer diagnosis in pets used to be a death sentence, if nothing else. We know we talked about the high cost of treatment paired with the low odds of successful outcome. What is the typical prognosis for dogs with cancer today and how do various factors influence it?

Christine Hardy

So it's really going to vary depending on the type of cancer and also the stage of disease when it's diagnosed. So stage meaning how far the cancer is spread. So some tumors when we diagnose them are very localized and are just going to stay localized and we can cure them with something like surgery. Whereas other cancers are going to be more aggressive and no matter what we do they are going to be, unfortunately, life-ending for that patient and require multimodality therapy, so surgery, radiation therapy, chemotherapy, a number of different things to be able to treat their pets. And so we know that diagnosing cancer earlier is gonna result in a better prognosis. So getting it before the tumor is too big for surgery or before the tumor is spread. Ultimately, the goal is prevention of these cancers. That would be the Holy Grail to find But right now we're just working on finding better ways to diagnose it earlier, screening for cancer, and also better treatments. And just a quick add-on to that, you're right, this did used to be a death sentence, you know, back when the Flint Animal Cancer Center and before it was founded, you know, before the early 80s. That has really changed. There's pretty much always something we can do to help. Be that palliative care in those really difficult tumors, we can still help support quality of life and assist the pet owner in terms of decision making going forward. I'm pleased to tell you we have made great progress, just like on the human side, where if we look at all cancers together, we can now manage or cure about 50% of them. That is obviously a long way from where we want to be, and we have to remember that cancer is really, it's not one disease.

There's some commonalities, but it's a spectrum of diseases. So on the human side, certain types of breast cancer, you're going to have a really rough year in terms of the non-scary type of breast cancer, if you will. A bit of a rough year in terms of treatment, but you'll probably go on and live a full life. And at the end of your life, it probably will be caused by something other than your breast cancer. Something like pancreatic cancer is still a really difficult diagnosis, right? So we still have a lot of work to do, but the important thing is to focus on the fact that we have made progress certainly in some cancers more than others that Also helps us to understand that we just need to keep putting you know The proverbial take the next first step right the next first step in the next first step in the next first step It's like a really long and sometimes frustrating marathon but one in which we just have to keep trying and all of us have the opportunity to do our part. And one other thing I will add to that, that's a little bit different about the treatment of cancer in pets versus people is that we really focus on quality of life. Like Dr. Hardy mentioned, if we're treating cancer in people, oftentimes people are getting really sick from their treatments, from their chemotherapy and they're in and out of the hospital and on all kinds of medications and feeling really crummy for a long period of time, especially if they're getting things like chemotherapy. And we really want our pets to not go through those types of things. And so we wanna maintain their quality of life. So oftentimes we're not treating the cancer quite as aggressively as they do in people. So therefore the outcomes may not be quite as successful, but the pets don't know why they're getting sick from the chemotherapy. We don't, the pet owners don't wanna be dealing with a pet who's really sick going through treatment. And so we really try to focus on their quality of life while extending the quantity of life as well. And I've had that experience. Our wonderful golden retriever named Winston was treated here for his cancer. He had surgery, radiation therapy, chemotherapy as well. I can tell you that. And we got way more than the average survival with his type of cancer. He had a pretty aggressive kind of cancer. I can tell you it was the best worst experience we've ever had. Best being the care that we and Winston experienced, the worst being the cancer part of it. Ultimately, we felt incredibly empowered. Winston had pretty much all good days and we were able to make what my husband Eric and I knew were the best decisions both in terms of his treatment and when we knew we needed to switch to palliative and eventually to hospice care and to make an end of life decision on his behalf. And from a pet owner's standpoint, that was exactly what we needed. We benefited from clinical trials in the past, and we know that Winston's treatment hopefully will help another pet in the future, and that's what really meant a lot to us.

Chris Meek

So we've been talking about clinical trials and other research that you're doing. How far has research come and how can trials like the ones we're talking about today help with more progress?

Christine Hardy

Yeah, well, so I'll take this one and answer this in the context of my brother Russ, who is a childhood leukemia survivor. So he had something called acute lymphoblastic leukemia, which we now know as if you're gonna get leukemia as a kid, that's the one to get, okay? It's highly treatable. Well, how and why is

that now highly treatable? Had Russ, so Russ was diagnosed in 1984. Had he been diagnosed in 1950, less than 15% of those kids made it past the first year. I mean, it was a devastating diagnosis. So what changed? How did we get from that to now, one of my classmates in veterinary school, his daughter was treated. Today, the survival rate for those kids is well over 98%. It's an incredible example of progress. So what happened? Well, the parents were really frustrated. The pediatricians were really frustrated, tired of seeing these kids die. They basically all glommed together to help the federal agencies understand that they needed more funding. St. Jude's Hospital came to the table and basically, I'm shortening the story pretty significantly, but what the collective group decided was every kid was going to get enrolled in a clinical trial and tenure in publications was really nice, but really they needed to share the information as they were gathering it and then make the changes. So in other words, not just sticking to what we had done before, but learning from the experience and as they were seeing success to really capitalize on that. So those clinical trials that I was mentioning before, which is why Russ is alive today, because the chemo protocol that he experienced in the 80s, which by the way, now I look at that as a bit of the shotgun approach. He has some long-term health issues as a result of the side effects of those, of his chemotherapy protocol. He's very fortunate to be alive, doing really well. He's a dad of two kids. He works in the human healthcare field. But kids that go through treatment now have far fewer side effects from their treatment and the results are even better for them. And that's again, as a result of ongoing clinical research. So I think that is probably one of the poster child, pun intended, examples of how and why this research is so important. The Lissartin clinical trial that I mentioned to you earlier about dogs with metastatic bone cancer and that trial was so successful is now enrolling children both in Atlanta and Denver, hoping that we will have a similar positive effect in those kids. That's just an example of the next first step that we hope will contribute positively to the future of those patients.

Chris Meek

I love how you keep talking about next steps forward in there. That's great, great plug. I appreciate that.

Christine Hardy

Yeah, well it's true, right? I mean, I think sometimes we get really overwhelmed. I've had people say, well, all this money is being dumped into cancer research. How come we don't have big answers? And this also goes back to the fact that it's a spectrum of diseases and it's unfortunately a really smart disease, tends to adapt in spite of our best efforts. And so instead of getting frustrated that we haven't reached the the summit of the mountain, we just really have to always think about what's our next first step and our next first step. Yeah, thinking about you know, what questions can we answer? Okay, we've answered those questions. What are the next questions and just taking it one step at a time versus trying to move mountains to do something, you know, set these lofty goals that we can't attain. And so just trying to have small successes and documenting those as we move along. And it's probably worth adding on that, you know, our initiative is called One Cure. The idea that as we collectively work together as one, we can move towards a cure, but it's really important that everybody knows that there is not one cure for cancer. It's really different across the board. So as long as we just understand the spirit with which our brand has come apart, that come to pass, that we're really all in this together as one.

but that we're not seeking one cure. We're really looking for the next first step and then we're the next first step.

Chris Meek

We have just a few minutes left. I'd like to close on a positive note. Would each of you take just 30 seconds or so to tell us what gives you optimism and hope for a better future for humans and canines?

Christine Hardy

You know, I think just the fact that we're actually doing these studies and contributing to the research that's, you know, going to move the treatment of this disease forward for both pets and people, you know, not every clinical trial is going to be successful, but we learn something from every clinical trial patient that we enroll. And I think just, you know, knowing that we're contributing to that and that we have OneCure, which is a foundation that's going to help support clinical trials and help raise awareness, I think it's just, it's really great to be a part of such a wonderful institution and be supported by the people that work here. I think from my perspective the more conversations I have with folks and the more they understand, I mean, I can't tell you how many times, you know, on a plane, in a conversation anywhere, wait, dogs get cancer or oh, yeah, my dog got cancer. What do you mean? Like, My pet's experience could actually, that's similar to what a human experience is and literally what you learn taking care of my pet with naturally occurring cancer, the same type that happens with us, might also benefit a person. You know, when I tell them yes, usually it's like a big aha moment. So I think for me, the hope that comes with helping people to understand how they can participate, how they can pass the word, you know, I hope that for everybody listening, that their pets don't get cancer, that they don't get cancer, their family members don't get cancer. The sad reality is, chances are, we all have been affected, and we're likely to be affected by cancer during our lifetime, right? Either us personally or somebody else. But there's a lot of hope, and we really are making progress. And I'm an optimistic person by nature. I refuse to be anything otherwise. And so opportunities like speaking with you and your audience the support of our philanthropist here in Colorado, who connected us to Graham and ultimately to you. From where I'm sitting, having been in this field for about 20 years and seeing what's happened so far, I'm really excited about what's coming down the pipe.

Chris Meek

Dr. Hardy, Dr. Weishauer, thank you so much for being with us today. I'm Chris Meek, run of time. We'll see you next week, same time, same place. Until then, stay safe and keep taking your next steps forward.