An Interview with

W. Jean Dodds, DVM

By Jolene Hicks

Dr. W. Jean Dodds is a world renowned veterinarian, geneticist, and scientist always at the forefront in her fields of expertise. I had an opportunity to visit with Dr. Dodds at the offices of Hemopet, the first non-profit national blood bank program for animals.

When did you realize you wanted to become a veterinarian?

When I was very young, about grade five. My father was a doctor and many people in my family have been doctors or nurses, and I decided that I was going to be an animal doctor; my family was aghast (smiles).

When did you become interested in genetics?

When I was a student I had to have some jobs to keep myself busy during the summertime and during weekends to earn some extra money. I was determined to put myself through school without taking any money from my parents, so I did medical illustrations. Then I decided that I wanted to have a job and the job available was in the physiology department of the veterinary school. They had a colony of dogs with hemophilia, which was unique at the time, and I became this sort of Girl Friday/student/animal caretaker/lab person and I got very interested in the genetics of disorders like that. So it was the genetics of bleeding disorders that got me involved in animal genetics.

Are you currently working on anything in the field of genetics?

Yes, all the time. We are working on the genetic markers for autoimmune thyroid disease in the dog. We are working on nutrigenomics, which is the genetics of functional nutrition, where individual genes determine what foods you should eat—so genetic expression is changed in each individual by the type of food you eat. That is based on your inherent genetic makeup. You are a unique individual just like an individual dog would be unique. Every individual has a “molecular dietary signature” which is basically the genetic expression of what your diet should be. It is like a paw print or a fingerprint—which you have. It is a new field that emerged in about 2000. We are actively working in this field and hold several patents in molecular nutrition and related diagnostics.

Did your work at the New York State Health Department prompt you to start Hemopet?

Well a little bit. In my capacity for regulating the human blood supplies for the state of New York I was also an advisor to the regional Red Cross there. I started thinking of the fact that all of the dogs, donated over the years to our special care program because they had heritable bleeding disorders, needed to have a fully operational animal blood bank on our own premises to keep them alive with transfusions when they were bleeding. After a meeting with the Red Cross I finally asked myself—why isn’t there a blood bank for pets? If there was we could do what we were already doing, but as a non-profit commercial program for pets needing safe and effective transfusion therapy. I thought, yes, I will do that. But what will I call it? I will call it Pet Life-Line and it will be a blue, red, and white heart-shaped life preserver, so that is how Pet Life-Line became the logo. And then I thought for the company name I needed something more business-like. So I thought blood for pets… Hemapet does not sound right…Hemopet sounds better.

How long did it take from conceptualization to reality, to open the doors to Hemopet?

We started thinking about it and we registered it as a non-profit business in 1986. The first blood offered for sale was in April 1991. That is because it took us a year and a half after setting up the facility to get the regulatory Biologics License permit from the state of California.
We had brought in our first rescued Greyhounds in November 1990, and there were 29 of them. We were caring for them and giving them lots of TLC, but we did not get the permits until April; we were almost bankrupt by that time. But the regulatory authorities in the state did not care, it was all a bureaucracy. And finally people said sell us the blood, we need the blood, we need the blood! I said I cannot sell the blood with a date on it before I have got a license to do it.

So you were not able to use any of the blood collected prior?

No, we never ever collected any units of blood before receiving the license. A bureaucracy takes a long time, as there were not any animal blood banks, and they did not know what to do. So I had saved or courier services that were as good as they are today. But what we used to do was go counter to counter, take it to LAX to a plane that was going to Japan or Hong Kong. But we do not do that much now... although we sell a lot of our blood products for dog patients in Hong Kong but not so much in the other overseas countries. Probably 85% of our blood is sold in North America and then Hong Kong makes up the other 15%. We actually visited one of the largest veterinary clinics there when we were in Hong Kong at the beginning of the year. There are two large emergency clinics there that buy blood from us, and this was huge, a multi-story specialty small animal facility with specialists from China, Australia, and other places.

Are all of your donor Greyhounds used in the Rabies Challenge Fund study?

No, none of them are. The Rabies Challenge Fund study does not do any of that; the study is performed by Dr. Ron Schultz in Wisconsin. The dogs in the study are all purpose-bred Beagles that live in a farm setting. The farm is owned and run by veterinarians.

After completing their time as life-giving donor dogs, the Hemopet Greyhounds are matched to prospective adopting applicants. How many family visits are needed until an adoption goes through or does it depend on the family dynamics?

It depends a little bit on the particular adopter's application, but we really want the people to come more than a few times, typically four to six times. They need to bond with the animals if they are approved to adopt one or two. The dogs need to bond with the family before going home with them.

$200,000 of my own money from giving seminars, etc. and we used that money to pay for everything until we opened. The first units were already spoken for and sold. Colleagues of mine had put in their dibs for the first unit of red cells and the first unit of plasma years ago. Today, we have 209 Greyhounds here and we are getting another 5 next week. Our canine blood products are shipped all over North America and to Hong Kong to save lives, and we are basically sold out all the time. Over 20 years of operation, we have rescued and adopted out over 2000 Greyhounds as family companions.

Was it initially difficult to ship blood and frozen plasma overseas?

Shipping overseas was difficult because we did not have the permits

How many years into the Rabies Challenge Fund Charitable Trust Study are you?

There are two concurrent trials, a five year and a seven year, and we are in the fourth year right now. So, the one study will finish in a year and the other one will go on for two more beyond that. We will be finished with the first trial in the fall of 2012. We are not sure how long it will take to get all of the data reviewed by the USDA, probably another year. So I hope, if all goes as planned, that we will have a five year rabies vaccine ready by 2013.

When it is completed, will the protocol for rabies change nationwide?

We certainly hope so.

In your paper on The Immune System you point out that "Some veterinarians trace the increasing current problems with allergic and immunological diseases to the introduction of MLV vaccines some 20 years ago." Do you feel that MLV vaccines have a place in canine vaccinations or would it be safer to use only killed virus vaccines?
Killed (inactivated) vaccines are always safer, that what Jonas Salk has always said. The problem is that they also have a lot of other materials in them, like adjuvants to stimulate the immune system. If you want to look at it purely objectively, the leptospirosis vaccine produces more reactions than anything, and that is a killed vaccine. Most of those are anaphylaxis; they are not the kind of delayed reactions we see with the MLV or some potent killed vaccines like rabies. Why do they make MLV (attenuated) vaccines? Because they are cheaper to make and because they produce a more complete immunity immediately. I have never been an MLV vaccine fan but, realistically, we do not have a choice today. So because they induce immunity at all three levels, the serum, the tissues, and the secretory system, basically in a simultaneous assault, they will more rapidly produce complete immunity. A killed vaccine will only stimulate one branch of the immune system which then stimulates the others, so it will eventually do the same thing but there is the lag effect—probably 10 days to two weeks longer for it to complete its cycle. So we have to balance the trade-off here. I think the immunologist would say it is much easier to make what I refer to humorously as “toxic tissue culture soup” quickly, stir it up in a pot, lyophilize it, and sell it that way, than to make a killed vaccine product by inactivating the product, and make sure that it is truly inactivated.

already titering their dogs. Why do you think more veterinarians are not recommending titer? Is it a lack of informed education at the veterinary schools? [This information is misleading and factually outdated.]

I think it is quite clear, that if a person from Tufts University Vet School would make a statement that titters cost from $70 to $200, which is not true, many other uninformed veterinarians who have never done this testing tell people it is $250. So, they just turn the client away. The actual cost for measuring both distemper and parvovirus titters runs around $40-50 today. The other thing that is not right—they say well, you can do a titer and get a measurement today, but the titer level can drop off a cliff tomorrow. That is totally wrong. I just do not understand the huge lack of education here; it is a huge educational gap because practical, applied immunology is not taught. You go to these lectures and the typical research PhD immunologist professor is going to tell you all about the immune system, with all the T-cells, the interferons, and the complement pathway, etc. The students’ eyes just glaze over. They do not retain the common basic principals. So unless you happen to be blessed to go to the University of Wisconsin, where Dr. Ron Shultz gives the lectures, people will not understand basic applied immunology—physicians do not either, by the way.

In the 1990s, when I first asked my general practitioner to titer my dogs, he asked, “Why don’t you just give them the shots?” Why do you think that some veterinarians do not keep up with new advancements in the field of veterinary science?

It is almost impossible for them to keep up with the explosion of new information available today. We had a veterinarian this week who had a client out of state that he had no idea that sighthounds had different basal thyroid levels than other breeds. He had taken this 12 1/2 year old Greyhound and prescribed 0.8 mg of thyroxin twice a day, when she weighed 54 lbs. And not only that, but the thyroid levels were not low to begin with, because they did not know how to read the norms for a sighthound. There is really no excuse for that ignorance, because that is widely known as more and more people rescue retired racing Greyhounds. They may not understand that this is a sighthound (referring to my Silken Windhound), although I assume they would, but a Greyhound everybody knows because veterinarians are likely to see someone that has rescued one or more. So, these dogs are just grossly overdosed with thyroxine. I think that veterinarians may just be frightened to embrace change and so are reluctant to comply with current vaccination guidelines, even though the national policies say this is what we should be do-
ing, and that they should be giving informed consent. Clients should be informed about the issues with over-vaccinating, etc. Why do we have three year vaccines now? Because you do not have to give them every year. Why do we tell someone that a 15 year old dog is due for vaccinations? I had a case in a Dachshund that was 15 that started acting weirdly in January and then in February, another veterinarian gave it DHLPP plus rabies "combo wombo" vaccination, and now it has a serious neurologic disease. And the cardiologist, the dermatologist, and the neurologist cannot diagnose it. But somebody in the practice said call Jean, she will help you. I said, "The dog has vaccinosis and vasculitis from vaccination." "Well how do you know that?" I said, "Because adverse vaccine reaction. They are not always accepted; it depends on what state you live in and what county you live in. But many veterinarians in good conscience will not vaccinate an animal with a chronic illness, even if their state does not allow exemptions. They will just "fly under the radar" and say I am not going to be responsible for killing this dog or cat. I am not going to do it. After all we are not supposed to do any harm, right?

Can you tell us about your Thyroid 5 panel and how it is preferable to the previous methods of testing?

The Thyroid 5 panel, firstly, is "green" because the assay does not use radioisotopes, so it is environmentally friendly — it is the only one available. The other different pass because they are too high. So the small dogs would be too high and the sighthounds would be too low. You end up in a dilemma with perfectly healthy dogs not being able to be certified and it is an indictment they do not deserve. I do not know that the OFA is ever going to change their pass/fail criteria, because how many small breeds and sighthounds are there to worry about among the "gazillion" dogs tested over the years! So we are just going on our own doing what we know works.

Can you explain how your parameters for thyroid testing differ from the traditional?

The age, the breed, and also the activity of the dog are all taken into consideration. A working, lure coursing, or very athletic dog is going to have down-regulated thyroid activity levels, and so he will test lower than he would be as a couch potato.

There are good publications to document all of this. I had a veterinarian today, a very nice person, question why I told her that the dose of thyroid hormone she had

Two successfully adopted Greyhounds with their forever owner.

A prospective adopter bonding in the Love Shack area at Hemopol.

Sight & Scent • June • 2011 • 63
prescribed was too high for this 12 year old dog. I said, “Well, first, the dog is twelve and second, you drew the blood for diagnostic testing at 7 ½ hours post-thyroid pill, which is beyond the peak drug response timing.” She said, “Well, how do we know that the metabolism of older dogs is lower like you said? It sounds sensible but is there any data on it?” I said that this has been known since the late seventies and eighties, and I mentioned the name of the endocrinologist at Cornell that had done the work. I remembered it was cortisol they were monitoring as well as thyroid activity in relation to age and breed, etc. So while we were talking I went on Google and I found the paper in the American Journal of Veterinary Research and she said, “Well, I can go on my computer too. Oh! I see it, there’s the abstract; it says exactly what you said.” So she was thrilled. She was not questioning that I knew. She was saying that for her own interest she would like to have confidence that she could say there are publications and that she had seen them. She said, “Well I can see it was 20 years ago now, or more, and no wonder we do not know that. We were never taught any of that.” I said, “It’s not published in mainstream, clinical journals, so you have to know where to look.” She was very nice and said, “That’s a tremendous memory you have.” I said, “Yes, I do know these things and I’ve never forgotten. Our data shows the same things but you don’t have to blindly believe our data, you simply need to look and see that other people have said the same thing.”

You have the only “green” non-RIA technology diagnostic lab. How long did it take to convert your lab or was it built here at your newest location and then you moved into it?

We actually had it operational before we moved, for about eight months. Then we had to move it – which was a huge thing – because the machinery we use is very costly and under lease. We had to get special insurance to get a truck to take it apart and bring it over here. So the new “green” assays have been going 2 ½ years now and we have our patents to protect that, so we are lucky. Not that it matters, none of the other places have shown an interest in licensing the technology and that is because they will continue to use their current RIA technology until the federal government and industry finally forbid it for environmental safety reasons. They have already said so, but have not put any teeth behind it. When they actually come down and give a moratorium on RIA diagnostic use at a certain date, then these larger commercial diagnostic labs are going to be scrambling.

And quite a few of the corporate practices use our testing system even though they are part of VCA or Banfield. That is because the client wants it. If they will not do it, the client will find another veterinarian. Most of the pressure to change things comes from clients. And the veterinarians, once they know what we offer, invariably stay with us. So we have had veterinarians that have been following us for 20 years, and as we evolve new things they still stay with us. Or they drop out for a few months; I just had one this week, who came right back again. That is good and comforting. When they want to have something that really is cutting edge, they will return to us.

We have just installed a unique Laboratory Information System (LIS). It is the only one in North America so far, like this. We had a chap from Europe come and set it up for us, custom built. That is a customized, computerized way of transmitting the lab data directly to a computer, so you do not have to enter it by hand. There are quite a few LIS systems like it in use. Human hospitals use it and the large database laboratories use it, but they are all hardwired to a terminal and are very expensive. If you want six terminals where people could log in and review the data and sort it, you have to pay for six modules. Our system is based on “cloud” (satellite) technology – that is what makes it unique. You can have as many people as you want access the database, and it does not cost any more. Our Phase One cloud technology system is operational already. We already have online test request forms that people can just access on the Hemopet website (www.hemopet.org) and download the whole thing, putting in all of the information online. It tells us that they are sending a sample so we will know its coming, and they will know when we get it, as it will show up electronically.

What are you working on now?

We are working on our patented salivary food intolerance diagnostics. The initial testing protocol involves six food antigens: wheat, corn, soy, beef, eggs, and milk. We have designed a clinical trial where thirty veterinary clinics collected samples from their patient dogs with “leaky guts.” In the first run we got over 40 samples, but there are still more to collect. We know that the samples are stable for 30 days, probably up to 90 days. For the completed clinical trials we would like to have a total of 100 samples. And it is all done with signed, informed consent from the pet owner. We hope to start offering this testing commercially as NutriScan by mid-April.

How do you keep the schedule that you do and manage to balance everything?

I am a workaholic I guess (laughs). No, I just have a passion for what I do.

References
