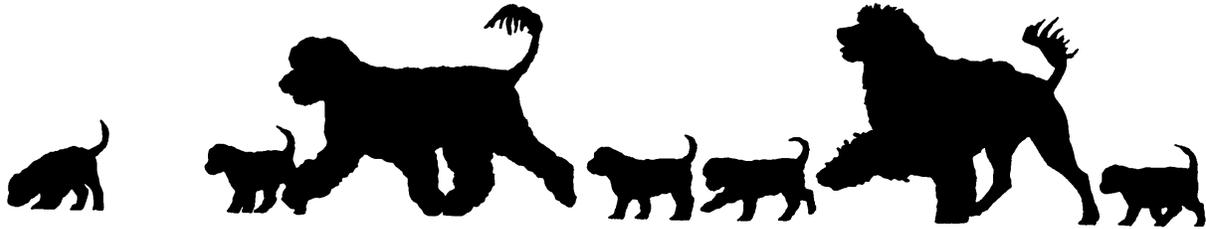


# Portuguese Water Dog Foundation, Inc..



## 2010 SPRING UPDATE

### AKC CHF CO-SPONSORED RESEARCH PROGRESS REPORT

#### #1131 - Genetic Background and the Angiogenic Phenotype in Cancer

**Jaime Modiano, VMD, PhD**

**Leslie Sharkey, DVM, PhD, DACVP**

*University of Minnesota*

**Abstract (Researcher):** Certain dog breeds are prone to develop certain types of cancer; yet, there has been little progress to define genes or other factors that account for this risk. Our recent work on hemangiosarcoma is the first to clearly demonstrate that a dog's genetic background, defined by "breed," can influence the profile of genes that are expressed by tumors. Among other important implications, this implies that certain breeds are diagnosed with specific cancers more frequently than others because of the behavior of tumors after they arise, and not simply because they arise more frequently. Specifically, this may apply to the observed predisposition for hemangiosarcoma seen in Golden Retrievers, German Shepherd Dogs, and **Portuguese Water Dogs**. In addition, one-size-fits-all therapies may be inadequate to effectively treat this disease. This project will extend our observations on gene expression profiles in hemangiosarcoma from Golden Retrievers to German Shepherd Dogs and **Portuguese Water Dogs**, and it also will define how new targeted therapies may effectively control the disease in these and other dog breeds.

**Early UPDATE:** Hemangiosarcoma is a devastating cancer that can affect any dog. For reasons we do not fully understand, Portuguese Water Dogs develop this disease more frequently than most other breeds. The **Portuguese Water Dog Foundation** has had a long and productive relationship with Dr. Jaime Modiano, supporting work that is helping to paint a clearer picture of hemangiosarcoma and other cancers. At present, there are no clearly defined subtypes of hemangiosarcoma, and no test can predict how fast the tumor will spread or if the disease will respond to treatment. Even though some 15% of dogs with hemangiosarcoma can respond favorably to treatment, no treatment is consistently effective, and recent clinical trials have failed to show improved outcomes. This highlights how little we know about why this disease happens and how it behaves. A recently completed study from Dr. Modiano's lab showed that, while none are detectable under the microscope, there are molecular differences between hemangiosarcomas of Golden Retrievers and hemangiosarcomas of other dogs. Some of these differences might explain the frequency with which the disease is observed in Golden Retrievers, and even why the disease fails to respond to conventional cancer treatments. But much work remains to be done before these suppositions are confirmed. In addition, nothing is known about possible features that might distinguish hemangiosarcoma of Portuguese Water Dogs. This is the focus of the current project that is being done jointly by Dr. Modiano and Dr. Sharkey at the University of Minnesota, with support from the **Portuguese Water Dog Foundation**. Specifically, Dr. Modiano and Dr. Sharkey will determine if

hemangiosarcoma of **Portuguese Water Dogs** has unique molecular features, or whether these tumors are indistinguishable from those that occur in other high-risk breeds. They will determine how hemangiosarcoma interacts with other cells as it grows and spreads to different tissues, and they will use sophisticated technology to test a large number of highly specific drugs for their ability to kill hemangiosarcoma cells. These complementary objectives will probe tumors for keys to hemangiosarcoma behavior on the path to identify new, more effective strategies for prevention and treatment.

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## AKC CHF CO-SPONSORED RESEARCH PROGRESS REPORT

### #1139 - Immune Targeting of Canine Hemangiosarcoma Using a Canine Derived Single Chain Antibody Approach

Nicola Mason, BVetMed, DACVIM, PhD,  
University of Pennsylvania

**Research Summary (PWDF):** Hemangiosarcoma is a devastating cancer affecting Portuguese Water Dogs. Despite aggressive surgery and treatment, survival times are very poor. Targeting cancer cells with the use of antibodies in an effort to activate the immune system, resulting in the immune system's attack of these cancer cells, has shown promise in human and animal research. The goal of this study is to use an antibody that targets hemangiosarcoma cells and helps to deliver a potent local treatment. Using this method to target tumors allows for more effective treatment with the potential for less systemic side effects. The goal of this study is to develop the first canine derived, tumor specific targeting approach for the treatment of hemangiosarcoma.

**Abstract (Researcher):** Canine hemangiosarcoma is a common and highly aggressive tumor of blood vessels that is oftentimes fatal. At diagnosis most dogs have evidence of metastatic diseases and despite chemotherapy, survival times rarely exceed 6 months. Novel approaches to the treatment of this disease are needed. The use of monoclonal antibodies and antibody fragments to directly target different tumors has shown promise in clinical trials in man. It is the aim of this proposal is to use a novel canine synthetic antibody system to specifically target the tumor and deliver cytotoxic agents directly to both primary and metastatic lesions. Using advanced molecular techniques, we intend to recapitulate antibody responses that dogs with hemangiosarcoma may make against their own tumors and use these as a template to generate canine antibody fragments that specifically recognize tumor particles. Tumor-specific antibody fragments will be linked to an exotoxin and evaluated for their ability to kill canine hemangiosarcoma cells in vitro. Immune-mediated targeting of tumors allows for the direct delivery of cytotoxic agents to the tumor, thus decreasing side effects and increasing therapeutic efficacy. This work aims to develop the first canine-derived, tumor-specific targeting approach for the treatment of HSA and to provide proof-of-principal for this approach that can then be used to therapeutically target many other tumor types in this species in vivo.

#### Original Grant Objectives:

*Objective 1:* To generate phage display combinatorial antibody libraries from dogs with HSA.

*Objective 2:* To identify tumor-specific scFv of canine origin that bind specifically to canine HSA cell lines.

*Objective 3:* To generate a canine scFv based immunotoxin and evaluate its specificity and cytotoxicity against canine HSA in vitro.

#### Report to Grant Sponsor from Investigator (update):

Canine hemangiosarcoma is a common and highly aggressive tumor of blood vessels that is oftentimes fatal. At

diagnosis most dogs have evidence of metastatic disease and despite chemotherapy, survival times rarely exceed 6 months. Novel approaches to the treatment of this disease are needed. Our work supported by the Canine Health Foundation and its associated breed clubs aims to generate a platform technology for generating canine derived antibody fragments that can specifically target tumor cells. Such antibody fragments can be linked to toxic agents and used to deliver these drugs directly to a cancer cell allowing for increased drug delivery and reduced toxic side effects. No such targeting system is currently available for use in the dog although similar targeting approaches are used commonly and effectively in the human cancer clinic. The work performed during the first year of this two-year proposal has led to our ability to generate libraries of synthetic, canine antibody fragments. Each fragment is specific for a particular molecule. Such

molecules may be those expressed on the surface of cancer cells, molecules associated with tumor growth factors or molecules expressed on the surface of infectious agents. Indeed, in theory, any molecule may be recognized by one or more antibody fragments contained within our canine antibody fragment libraries. Having generated these libraries we are now able to use simple panning techniques to isolate fragments that specifically bind to molecules of interest. In order to provide proof-of-principle that antibody fragments that target specific molecules exist within the libraries that we have generated, we have utilized canine parvovirus (CPV) molecules to select CPV specific antibody fragments from antibody libraries. This approach was successful and we have now isolated an antibody fragment of canine origin that specifically targets and binds to canine CPV parvovirus. This finding provides proof-of-principle that these libraries contain a diverse array of antibody fragments that can be selected based on their ability to bind to certain target molecules. We are now performing further screening studies to determine whether the selected CPV-specific antibody fragment is capable of targeting and neutralizing CPV, a finding that would possibly provide us with a much needed therapeutic agent to treat dogs with clinical parvoviral disease. While this work was intended to provide proof that generated antibody libraries contain antibody fragments that target specific molecules, it also clearly provides an insight into the potential of this technology to impact the treatment of multiple disease processes including infectious disease.

We have now generated several different canine antibody fragment libraries from dogs with hemangiosarcoma and are now starting to screen these libraries to identify and isolate antibody fragments that specifically target hemangiosarcoma cells. In addition, we are screening our antibody fragment libraries for fragments that can bind to and neutralize Vascular Endothelial Growth Factor (VEGF). This growth factor plays an important role in ensuring that new blood vessels are generated in response to the presence of the tumor. New blood vessels support tumor growth and agents that inhibit growth factors like VEGF are important in the treatment of many different malignancies. A human antibody known as Avastin that targets VEGF is currently used to treat patients with advanced colonic adenocarcinoma. It is important to note that since the antibody fragments we have generated are replicas of canine antibody fragments, they should elicit minimal immune responses when used in vivo. As such, these antibody fragments should be able to be administered multiple times if necessary, without losing their potency. The results of our work to date have been compiled in a manuscript that is nearly complete and will be submitted shortly to the Journal of Immunological Methods. In the second and final year of this grant

support, we aim to vigorously screen antibody fragment libraries generated from 10 dogs with hemangiosarcoma for fragments that specifically bind to hemangiosarcoma cells. Once we have identified such fragments we will link them to a cytotoxic agent and determine their ability to specifically kill malignant cells in vitro, prior to testing these agents in canine patients with hemangiosarcoma. **In summary, our work has led to the development of the first canine-derived, antigen-specific targeting approach that may be used for the treatment of many different cancer types including HSA.** Furthermore, we have identified potential agents that might be used to neutralize canine parvovirus in pups and adults with clinical disease.

We are exceptionally enthusiastic about this novel technology and wish to thank the CHF and its supporting breed clubs that have made and continue to make this work possible.

*The Spring and Fall Updates are a publication of the Portuguese Water Dog Foundation, Inc.*

*P. O. Box 203*

*Parker Ford, PA 19457-0203*

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←—————→

The mission of the  
**Portuguese Water  
Dog Foundation**  
is to generate significant  
resources to fund research into  
genetic and other canine diseases  
that will improve the life  
and health of all  
Portuguese Water Dogs.

## MAF CO-SPONSORED RESEARCH PROGRESS REPORTS

### D07CA-085 Pooled Association Mapping for Canine Hereditary Disorders

**Gregory M. Acland, BVSc**

*Cornell University*

**We should have the final report very soon.**

This research is to develop a system that will map genetic traits causing health problems. More than 450 canine genetic traits are listed on the Online Mendelian Inheritance in Animals list. These traits affect all body systems in dogs and can cause health problems ranging from mild disease susceptibility to severe illness and death. Researchers will use a genetic tool called the Affymetrix Canine SNP Chip to develop a mapping strategy using pooled DNA samples that will map genes for hereditary canine disorders. This method promises to be 10 times more efficient and cost effective than current methods for analyzing canine inherited traits. Once this method is validated, it will be used to map a series of hereditary retinal disorders affecting multiple breeds.

**Progress Update:** More than 450 diseases in dogs have a genetic cause. Collectively, these diseases affect all body systems in dogs and can cause health problems ranging from mild disease susceptibility to severe illness and death. The task of researching and identifying genetic reasons for disease traits is daunting. Researchers from Cornell University are exploring a more efficient way to use the relatively new genetic tool called the Affymetrix Canine SNP Chip. They hope to develop a “pooled sample” strategy that will more rapidly identify genes for hereditary canine retinal disorders – diseases that cause blindness. This method promises to be 10 times more efficient and cost-effective than current methods. Currently, the blood from each dog is analyzed for DNA — one sample from one dog at a time. With pooled sample strategies, scientists combine the DNA from several affected dogs into one sample and run them together. This allows more samples to be tested at a reduced cost — sort of like a screening test to first determine if the “bad” gene might be present prior to developing the test that would test for the gene in individual dogs. However, this research strategy also creates complexities of data analysis. So far, the researchers have validated the process of using pooled DNA samples and have worked through the complexities using an improved genotyping method developed at Cornell University. In addition, they have successfully mapped the chromosomal location of genes for cone rod dystrophy (a cause of blindness) in American Pitbull Terriers and Irish Glen of Imaal Terriers. The specific gene mutation for one of these forms of cone rod dystrophy has been identified, and a diagnostic test will be announced shortly.

### D08CA-402 Genetic Analysis of Hypoadrenocorticism in Nova Scotia Duck Tolling Retrievers,

**Angela M. Hughes, DVM**

**Anita M. Oberbauer, PhD**

*University of California-Davis*

**This project has been completed**

**Results:** Research Takes First Step in Eliminating Addison’s Disease in Nova Scotia Duck Tolling Retrievers -- Addison’s disease, also known as hypoadrenocorticism, is a deficiency of hormones that are produced by the adrenal glands and help regulate a dog’s metabolism, blood pressure, electrolyte balance and stress response. Though the disease is relatively uncommon in dogs, certain breeds—including Nova Scotia Duck Tolling Retrievers, Bearded Collies, Great Danes, Leonbergers, **Portuguese Water Dogs**, Standard Poodles and West Highland White Terriers—have a much higher risk than the

general dog population. Researchers identified a region of the genome that is associated with the development of Addison’s disease in Nova Scotia duck tolling retrievers. Additionally, it appears that dogs that are homozygous (both chromosomes carrying the same genes) with respect to this region are at greater risk of developing Addison’s disease, even at a young age (under 2 years). Although additional genes are likely involved, this information is the first step toward understanding the genetics of this disease and developing a genetic test that will help eliminate Addison’s disease through informed breeding practices.

### D07CA-034, MicroRNA Expression Profiling of Canine Osteosarcoma

**W.C. Kisseberth, DVM, PhD, DipACVIM** (Oncology)

*Ohio State University*

By studying miRNA expression in osteosarcoma, the investigators hope to identify new molecular targets for therapy that will lead to better treatment of this disease. Osteosarcoma, commonly known as bone cancer, is a significant cause of death in large and giant dog breeds. Because cancer is believed to be fundamentally a genetic disease, genomic approaches are needed to study canine bone cancer. Recently, scientists have determined that microRNAs (miRNAs), small non-protein-coding molecules, play an important role in a variety of human cancers. Using a custom microarray technology, which the investigators have developed in their laboratories, this study will identify miRNAs that are expressed in canine osteosarcoma. Researchers will then identify which miRNAs are expressed in osteosarcoma and which are associated with certain breeds and prognoses. By studying miRNA expression in osteosarcoma, the investigators hope to identify new molecular targets for therapy that will lead to better treatment of this disease.

**Progress Update** Osteosarcoma, commonly known as bone cancer, is a significant cause of death in large and giant dog breeds. Because bone cancer is believed to have an underlying genetic component in these breeds, genomic approaches are needed to identify causes of canine bone cancer. Researchers at the Ohio State University have developed a customized genetic tool to study osteosarcoma. This tool, called a canine microRNA microarray, is being used to characterize microRNA expression in osteosarcoma and to determine whether there are differences in microRNA expression between tumors and healthy tissues. Preliminary data are encouraging. MicroRNA expressions in tumor samples are different from those of normal bone cultures. Osteosarcoma tumor samples and osteosarcoma cell lines also have similar expression of microRNAs, suggesting that cell lines can be used to investigate microRNA-based treatments for this disease.

## NUTMEG PWDC CALENDAR PROFITS TO BENEFIT PWDF CANCER RESEARCH

The Nutmeg Portuguese Water Dog Club has graciously offered to donate all their profits from the 2011 calendar to the PWDF for the sole purpose of Cancer research. This is a well known calendar that usually sells out every year. Each month pictures a PWD(s) that was selected by a committee from submissions from any PWD owner who would like to send one in. Please support their efforts as well as ours by submitting a photo and then by buying the 2011 calendars which make great gifts. For more information please go to: [http://www.nutmegpwd.org/html/calendar\\_photos.html](http://www.nutmegpwd.org/html/calendar_photos.html) OR just Google NUTMEG PWDC and click on Calendar Photos.

**Please Note:** The PWDF neither endorses nor recommends the following vaccination schedule. We are reprinting this article because we thought it would be of interest to our readers since it was written by a leading authority of vaccinations and because Dr. Schultz is the chief researcher of the Rabies Challenge Fund.

## Duration of Immunity to Canine Vaccines:

### What We Know and Don't Know

Ronald D. Schultz, Professor and Chair

Department of Patho-biological Sciences

School of Veterinary Medicine, University of Wisconsin-Madison

It has been common practice since the development of canine vaccines in the late 1950's to administer them annually. The recommendation to vaccinate annually was based on the assumption that immunity would wane in some dogs, thus to ensure immunity in the population, all dogs required revaccination since it was not practical to test each animal for antibody. Little or no research has been done to demonstrate that the practice of annual revaccination has any scientific value in providing greater immunity than would be present if an animal was never revaccinated or was revaccinated at intervals longer than one year.

In 1978 we recommended an ideal vaccination program would be one in which dogs and cats would be revaccinated at one year of age and then every third year thereafter (1). That recommendation was based on a general knowledge of vaccinal immunity, especially the importance of immunologic memory and on duration of protection after natural sub clinical or clinical infections as well as on limited studies we had performed with certain canine and feline vaccines. Since the mid 1970's we have done a variety of studies with various canine vaccines to demonstrate their duration of immunity. From our studies it is apparent, at least to me, that the duration of immunity for the four most important canine vaccines (core vaccines) that the duration of immunity is considerably longer than one year. Furthermore, we have found that annual revaccination, with the vaccines that provide long term immunity, provides no demonstrable benefit and may increase the risk for adverse reactions. We have assessed duration of protective immunity primarily by two procedures; the first is held to be the "gold standard and that is to challenge the vaccinated animal with the virulent organism, the second method is to measure antibody and compare the antibody titer to that which is known to prevent infection (e.g. provide sterile immunity). The studies we report here include challenge studies as well as studies that determine antibody titers. A summary of our results show the following (Table 1).

Table 1: Minimum Duration of Immunity for Canine Vaccines		
Vaccine	Minimum Duration of Immunity	Methods Used to Determine Immunity
<b>CORE VACCINES</b>		
Canine Distemper Virus (CDV)		
Rockbom Strain	7 yrs / 15 yrs	challenge / serology
Onderstepoort Strain	5 yrs / 9 yrs	challenge / serology
Canine Adenovirus-2 (CAV-2)	7 yrs / 9 yrs	challenge-CAV-1 / serology
Canine Parvovirus-2 (CAV-2)	7 yrs	challenge / serology
Canine Rabies	3 yrs / 7yrs	challenge / serology
<b>NON-CORE VACCINES</b>		
Canine parainfluenza	3 yrs.	serology
Bordetella bronchiseptica	9 months	challenge
Leptospira interrogans ser. canicola	?	
Leptospira icterohaemorrhagiac	?	
Borrelia burgdorfen	1 yr.	challenge
Giardia	?	
Canine Coronavirus	Lifetime (whether vaccinated or not vaccinated)	Challenge / serology

The minimum duration of immunity data does not imply that all vaccinated dogs will be immune for the period of time listed, nor does it suggest that immunity may not last longer (e.g. the life of the dog). The percentage of vaccinated animals protected from clinical disease after challenge with canine distemper virus, canine parvovirus and canine adenovirus in the present study was greater than 95%.

Although there is much more that we need to know about duration of immunity to canine vaccines the information we have at present provides adequate justification for the vaccination recommendations that I and others have made and continue to make regarding frequency of vaccination (2)

1. Schultz, RD. and F.W. Scott. Canine & Feline Immunization. In: Symposium on Practical Immunology. R.D. Schultz, Ed., Vet Clinics of N. Am., Nov. 1978, W.B. Saunders Co.

2. Schultz, R.D. Current and Future Canine and feline vaccination programs. Vet Med 3: No. 3, 233-254, 1998.

**The Portuguese Water Dog Foundation, Inc.  
P.O. Box 203  
Parker Ford, PA 19457-0203  
Tel (610) 707-2589**

The Portuguese Water Dog Foundation, Inc. needs your help and support to fund research to improve the quality of life and health of our Portuguese Water Dogs. Your **tax-deductible** donation, **in any amount**, would be greatly appreciated. In addition to personal donations, a donation may be made in memory or honor of a friend or loved one, whether human or canine. *Donors' names will be kept anonymous upon request.*

**Donor levels are: Deck Hand** (up to \$49); **Sailor** (\$50 to \$99); **Boatswain** (\$100 to \$249); **First Mate** (\$250 to \$499)  
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Enclosed is my donation, in the amount of \$ \_\_\_\_\_, payable to PWDF, Inc.

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The official registration and financial information of The Portuguese Water Dog Foundation, Inc. may be obtained from the Pennsylvania Department of State by calling toll free, within Pennsylvania 1-800-732-0999 or out of state 1-717-783-1720. Registration does not imply endorsement.

Tear Here

**Commodore \$1,000+**

In memory of Chester & Sydney  
 Deb Bender/Calimel  
 Susan Hopkins & Chulsa Kennels in honor of the PWD PSG  
 Val & Mary Ellen Jensen in memory of Seabreeze South  
 China Sea – Cindy - died 4/28/09 – pancreatic cancer  
 Jessie C. Kushell in memory of Ch Camerell's Duel at Diablo  
 Art & Jane McEwen in memory of Delilah – Mare  
 Alta's Out on the Town CGC our 1<sup>st</sup> PWD  
 J. D. Northway in memory of Ann Northway, Cassie & Splash  
 Paulsen Family Foundation  
 Geri Zuckerman – Seadream Portuguese Water Dogs

**Captain \$500-\$999**

Reverend Elizabeth Carl in memory of Senator Edward Kennedy  
 Shirley Coleman & Allan Barnes  
 Barbara & Donald Niemann  
 John Northway & Lisa Grote in memory of Ann Northway, Cassie  
 and Splash as well as in honor of J.D. Northway and Polly  
 Barbara Stratton in memory of Moliero Abby  
 Gale of Sun Joy – My Grace on the beach  
 Thank You to Verne Foster



**In Memory of...**  
**In Honor of...**  
**Thank You...**  
**Congratulations!**

Looking for reasons (or excuses) to support the PWD Foundation and health research throughout the year? You can show your support and at the same time acknowledge a human or PWD friend or family member. Send a donation to honor that friend or a memorial donation in the memory of a departed friend. The PWD Foundation will send a card embossed with our logo acknowledging your generosity to the person or family you designate.

**First Mate \$250-\$499**

Roberta Capuano & Tom Heffernan in memory of BISS Ch Freestyle First & Foremost OA NAJ CWDX AOM GROM (Allie), thanks to Allie we are blessed with two amazing water dogs  
 Roberta Capuano & Tom Heffernan in memory of BISS Ch Sea Sprite's Trick or Treat AOM (Boo!), Quiet, confident, gentle, well mannered, handsome & intelligent. How fortunate we are to have his son. Boo! forever in our heart.  
 The Colorado Portuguese Water Dog Club in honor of the following beloved companions of our members who have crossed the Rainbow Bridge in 2009:  
 Ch Hi Country Cause For Applause AOM CGC "Corey" loved by Joanne Cook  
 Am/Intl Ch Driftwood's Excellent Journey "Ted" loved by Scott Quirin  
 DoMarco's Sovereign Land "Isla" 7-4-2000 to 9-23-2009 loved by Joy Rochester  
 "Happy Holidays" from the Great Lakes Portuguese Water Dog Club  
 Bettie & Hill Hastings  
 Jay & Cheryl Hoofnagle – Blue Run PWDs in memory of Ch Providencia's Lucky Yardley  
 Barbara Isaacs in memory of Milo – Piedelai Helios de Legado 1996 – 2008  
 Michael & Linda McLean in memory of Martha Stern  
 Chris & Amy Nordstrom in memory of Janice Garner – Rockhill PWD's  
 Stan & Milarie Rude in memory of Ch. Timbermist Blu Water Lorelei  
 Nancy L. Schlemmer in honor of Buddy (11) & Zoë (9)  
 Cari & Jeffrey Schnipper  
 Abby Silva & The Riverside Six  
 Peggy & Don Van Slocum in memory of Susan McMahon and her care and commitment for PWDs  
 Jennifer C. Walsh in memory of Dutch

**Boatswain \$100-\$249**

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 Deb Bender/Calimel in memory of "BOO!"  
 MBISS CH Sea Sprite's Trick or Treat AOM  
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 Keeper of the Ketch CD RE AX MXJ OF MAD CWDX SROM  
 Deb Bender/Calimel in memory of  
 "Vasco" Ch Absolute Vasco de Gamma  
 Steve & Bobbie Benninga in memory of Bossanova & D.J.  
 Bev & Dick Boccaccio in memory of Zach  
 The Boxer Family  
 C E & Ann W Brady  
 Dyanne Brewster  
 Candi Bubert wishing a Merry Christmas to & in honor of our friendship to Judy, Lisa, Marianne & Mary-Kay  
 Chuck & Candi Bubert in memory of Grande  
 Lago Augusta Caesar, 'Augie' aka Shifty Fell  
 Bob & Denise Buonaiuto  
 John & Diane Burke  
 Linda & Jim Carey in memory of our  
 "Frannie" – Ch Pennkrest's Bela Francesca  
 Phyllis Crane & Howard Talesnick in memory of Jiggs Crane, our first beloved PWD  
 John & Susan Cucura  
 John, Susan, Viva and Indy Cucura in memory of Alex,  
 CH Lisbons Marchena CD MX NAP MXJ NJP, WWD  
 Pat DeVries/Marshview in honor of the PWD PSG  
 Fair Skies PWDs in honor of the PWD PSG  
 Kristi & Steve Fairfax in honor of  
 Stargazer's For Love of Oscar  
 Foxtails PWDs in memory of "Maggie"  
 Debbie & Ollie Giewont as a Thank You to  
 Joan Bendure for aid in getting me home

**Boatswain \$100-\$249**(cont'd)

Vicki & Ken Goldberg in honor of Blue & Maggie  
 Donna Gottdenker in honor of the PWD PSG  
 Roger & Diane Greenberg in memory of Maggie  
 Angela & Stan Harding in honor of The California Beaches Litter  
 Mr. & Mrs. James Harrington in memory of  
 "Griffin" Pennkrest Havana Daydreamin'  
 Lance & Heidi Harris  
 Melinda Hatton in honor of Lilly our PWD  
 Highwood PWD in honor of the PWD PSG  
 Carol & Howard Hillman in memory of Riva  
 Ron & Sandra Holden in memory of Ch Alto Mare Oceana  
 Brisa & Ch Alto Mare Le'Vado Nick of Time, CD, RN, CGC  
 Linda & Krista Hunt/Kalista as a Thank You to  
 'Marco' Kalista Let's Play Two for the OFA Pledge  
 Jayne L. Kenyon as a Thank You to Bev Jorgensen for Moby  
 Otto A. Kuehne & Cynthia A. Kuehne in  
 honor of Joan Bendure for cancer research  
 Mary B. Lansing, M.D.  
 Carol Rae and Mario Lanza in honor of "Belle" Afortunado A Belleringer  
 Stephen Lawroski & Monika Hadrian in memory of Mambo  
 Arthur & Roberta Levin in memory of our beloved PWD Bissa Levin  
 Warren Lloyd in honor of the PWD PSG  
 Lou Ann & Bob Lindquist in memory of Maggie Mae & Bump  
 Thomas & Linda Majcher  
 Tom & Tina March  
 Pam Marshall  
 Pam & David Miller in memory of Lazer  
 Susan Myrick in honor of: Pickwick's Blue Suede Shoes, Pickwick's Shake Rattle  
 N' Roll, Pickwick's Jailhouse Rock, Pickwick's Don't Be Cruel, Pickwick's Let  
 Me Be Your Teddy Bear, Pickwick's Roubabout Domino, Pickwick's Viva Las  
 Vegas, Pickwick's Little Sister, Pickwick's A Little Less Conversation &  
 Pickwick's Ku'uipo  
 Linda Nielsen in memory of Grizzly, lost to soon to cancer  
 Kim Nye in honor of Gallitzen a Rose is a  
 Rose is a Rose – Gallitzen Puppy Pledge  
 Planalto/Highbid PWDs in honor of the PWD PSG  
 Sherry Rady in honor of the PWD PSG  
 Marilyn Rimmer in memory of Elenore Doris Gorrell &  
 Am/Int BOSS Ch Questar's Athena Nike "Lily Bean" &  
 Ch Questar's Shooting Star, NF, NA "Missy"  
 Ellen E. Rivers in memory of Martha Stern  
 Donna & John Sack in honor of all our  
 Zohar Portuguese Water Dog puppies  
 Robert & Virginia Santoli in honor of the PWD PSG  
 Sonja & James Santos in memory of the Do Mar Dogs  
 Ellen Sard - Imagine PWD in memory of Jack & Montana  
 Betsey Schimpff  
 Susan Scheff Wells & Don Wells in  
 memory of Robert W. (Bob) White  
 Charles & Marge Schreiber in memory of  
 "Zara" loved by Marie & Charlie Kapetanakis  
 Lynne Schwartz & Rivendell Kennel in memory of Susan McMahon  
 Cheryl R. Sears  
 Donna Shalala in memory of Cheka  
 Linda Shultz in honor of Charlie & all the Neaptide pups  
 Southern California Portuguese Water  
 Dog Club 2009 Donation in Memory of:  
 Leslie Arner's CH Lisbon Marchena WWD CD  
 MX MXJ AOM & Agility HIT 1996 Specialty "Alex"  
 Judy Berger & George Ziemba's "Dylan"  
 Christa and Larry Diamant's Roseknoll All that Jazz "Jazzy"  
 Bobbe Kurtz's "Tipper" and "Frankie"  
 Denise Latty's Roseknoll Lolita Lourdes Latty "Lola"  
 Marilyn Rimmer's BOSS, Ch Questar's Athena Nike  
 "Lily Bean" & Ch Questar's Shooting Star NA, NJ "Missy"  
 Bee Sousa's Ch. DeLeos Musicals Celebration "Cela"  
 Kathy Sousa's - Sete Mares Cruiser "Cruiser"  
 Chuck & Susan Teasley's Roseknoll Connie of Sunrider "Connie"  
 Geri Zuckerman's Int'l/US/Mex CH Roughrider Saltwater  
 Serenade CDX CWD U-AI GROM 1995-2009 "Salty"

**Boatswain \$100-\$249**(cont'd)

Stacy, John & Tony Stahl in memory of Zsa Zsa  
 Ken & Caren Stanley in honor of Gilligan & Gulliver  
 Jim, Phyllis & Gussie Stanton in memory of Amadeus  
 Bobby & Mimi Stein thanking Jodi Whetzel  
 Gloria, Mike & Bailey Sullivan  
 Elaine Suter  
 Donna & Jim Tieman in honor of Gallitzen  
 Sophie-Simone & Charlie – Gallitzen Puppy Pledge  
 Andrew Wagner & Lynne Brady Wagner in honor of  
 Gallitzen The Raven – Gallitzen Puppy Pledge  
 Cristi Fogus Wetherholt, Bruce Wetherholt &  
 Allyn PWDs in honor of Calimel Cares  
 Penny & Frank Yamamoto in memory of Ch Timbermist Trey  
 Margarita – Maggie – you were our hearts for 14 years.

**Sailor \$50-\$99**

T. & K. Adams in memory of Chuck and his girls; Olive, Abigail and Coco  
 Mary Barbara & Michael Alexander in honor of  
 HiSeas Vineyard Periwinkle & HiSeas Rosa do Mar  
 Charles & Dale Anderson in memory of 'Hershey'  
 Ann & Jim Arens in memory of "Huxley" Anji's  
 Formal Bow Tie de Galvez 8/22/95 – 9/2/09, 13 years  
 Ann & Jim Arens in memory of "Robin" Ch Anji's  
 Robin Deriva Galvez AWD CGC 4/14/96-8/5/09, 13 years  
 Charley & Frank Arruda & Leala in memory of Revo  
 Karen Kirby Ash in honor of the PWD PSG  
 Ann Benninger & Willie in memory of CH Mariner  
 Flagship Jetty VCD2 UD RE MX MXJ CWDX  
 June & Jorge Berdichewsky wishing a Happy Birthday to Vasco da Gama  
 Merry Christmas Luke  
 Hannah & Maxine Brainer in memory of our boy Harley  
 Dyanne Brewster in honor of the PWD PSG  
 Art & Gwen Brock in honor of Brinkley  
 In memory of Pennkrest's Bela Francesca - Frannie you  
 will be missed by your extended family the Browns!  
 Kenneth Buckwalter  
 Mary Jo Burgess  
 Sandra L. & Robert J. Caruso  
 Nigel J. Clark in honor of the PWD PSG  
 Julie Conger  
 Meg DeFore in honor of the PWD PSG  
 Meg DeFore in honor of Torrid Zone's Intrepid Skipper NJA & Paul  
 Byrum III as well as congratulating them on earning a new title  
 Brian & Melissa Deutsch  
 Libby & Nick Devlin in honor of Ragmop  
 Diamante Portuguese Water Dogs/Jim &  
 Kim Beach in honor of the PWD PSG  
 Roslyn Eskind & John H. Brown, Seabury (reg'd) in honor of the PWD PSG  
 Roslyn Eskind & John H. Brown, Seabury (reg'd) in  
 memory of Ch Makitso's Almirante Da Armada  
 Susan Ferla & Kala in memory of our friend Moleiro  
 Abby Gale of Sun Joy owned by Barbara Stratton  
 Scott S & Dolores F in memory of Helen Berg  
 Carol & Beck giving a gift of PWD Research and wishing all the  
 Seaworthy PWD Dogs and owners a healthy, happy Christmas Season  
 Richard A. Frankel  
 Nancy Gills in memory of "Allie" Ch Stargazer's  
 Hanalei Voyager RN NA NAJ NF NAP  
 Nancy & Paul Gwyn  
 Angela Harding in honor of the PWD PSG  
 Laurie Hardman in honor of the PWD PSG  
 Meg Harper in honor of Annie & Bentley  
 Chris Harris in honor of the PWD PSG  
 Michelle Hemenway in memory of Zaphod  
 Silke Hirtz-Schmidt in honor of the PWD PSG  
 Pat Hogan in honor of the PWD PSG

**Sailor \$50-\$99** (cont'd)

Linda Horton in memory of Alestka Sambuca CD AWD TD  
& Ch Scrimshaw Brandywine CD WWD TD  
Linda & Krista Hunt, Kalista in honor of HIT Kalista's  
Icebreaker CDX RA WWD 'Breaker' on his HIT and his CDX!!  
Katrina Jackson in honor of Jewel De Agua Sophia  
Peter & Gerd Jordano in honor of Chelsi & Mia (our PWD's)  
Katie Katinas  
Linda E. Keel in honor of Queen Anne's Revenge  
Diane Keppen in honor of the PWD PSG  
Barb & Kirk Kerensky in memory of Marco Polo  
Ralph & Karla Klump in honor of Abby  
In honor of "Winston the Water Dog", from the book  
sale proceeds held at a Mayflower PWD club event  
Dorothy F. Kowey  
Bobbe Kurtz in memory of Starview's Tipper  
The Labovitz Family  
Amy C. Lane in honor of the PWD PSG  
Janet Lankester in honor of the PWD PSG  
Tom, Judy Max-A-Million & Miss Margaret Leather in memory of our friend,  
Bob White, loving husband of Margaret White and lover of all PWDs  
Kathy Maguire in honor of the PWD PSG  
Cynthia Maritato  
Jane McEwen in honor of the PWD PSG  
Stella & Charlotte in memory of Gus  
Susan Myrick, Pickwick in memory of Pickwick's  
Molly owned by the Bobovsky Family  
Leslie Osterhout in honor of the PWD PSG  
John & Diane Parks in honor of Dacher's Lullaby Lyrics 'Bella'  
Mark & Deb Phelps in honor of the PWD PSG  
Joyce Polak & Barbara Williams in honor of the PWD PSG  
Carole Prangley-Mclvor in memory of  
Susan & Jeff's very special "Cocoa" Weiss  
Carole Prangley-Mclvor as a Thank You to Dr. John  
Pisciotta & Mr. Tom Allen for their care of "Cocoa"  
Janine Richter & Tony Paton in honor of Puddles  
Mary Salvary in honor of the PWD PSG  
Lynn & Dave Saturno as a Thank You to Janis Watts  
& Mart Miller for Legado Guardacostas Schooner  
Lynn & Dave Saturno as a Thank You to Linda Kelly  
& Janis Watts for Ashbe Legado Steamboat A-Comin'  
The Saunders Family - Deb, Rhom, Anna Mae & Lilah in memory of Bool!  
Sandra Saybolt in honor of the PWD PSG  
Randy & Joan Severance in memory of Tobie Marie  
Victoria Shulman  
Cindy Simon  
Kathleen Skeels as a Thank You to the PWDF  
Joan L. Snyder in memory of Nemo  
Kathleen Souza in memory of Sete Mares Cruiser  
Kathleen Thornton wishing Mary Korr Happy  
Holidays and in memory of Winston  
Dr. Elizabeth Trainor in honor of the PWD PSG  
Kristina Winkler in honor of Max Winkler  
The Wolcoveick Family in memory of Curly, Faro, Frannie & Cassie  
Denise & Ken Woodring in honor of the PWD PSG

**Deck Hand up to \$49**

Jan Allred in honor of the PWD PSG  
Doris C. Appleby  
Ann & Jim Arens in memory of "Zack" Anji's  
Black Tie N' Spats 8/22/95 - 9/2008, 13 years  
Ann & Jim Arens in memory of "Ayza" Ch Anji  
Formal Attire de Galvez 8/22/95 - 7/25/08, 13 years  
Lisa H. Asbury in honor of the PWD PSG  
Ann Benninger in honor of the PWD PSG  
Kim & Michael Bonner  
Dyanne Brewster in honor of the PWD PSG

**Deck Hand up to \$49** (cont'd)

Gail Browne-McDonald in memory of Alto Mare Sebastian  
The Burke Family wishing Arlo a Merry Christmas  
Camlin Seadancer PWDs in honor of the PWD PSG  
Ann Camp in honor of the PWD PSG  
Barbara Crowther in honor of Aidan, Bandit & Mister  
Cheryl & Tom D'Altrui in honor of Bella D'Altrui  
Pat & Bill Daubert wishing Deb & Dean Mease a Merry Christmas  
In honor of Rio  
Amanda Ford in honor of the PWD PSG  
Giving Tree, LLC  
John Haeger in memory of Piedelai Allegretto Con Brio  
Jane Harding in honor of the PWD PSG  
Petro Haring in honor of the PWD PSG  
Petro Haring in honor of Ch Sandstone's  
Material Girl - thanks for Bangle and Ziggy  
Rita Hasel in honor of the PWD PSG  
Tom & Hersha in memory of Jazzy  
Lee & Susan Haygood in honor of Gator, Jazz & Sage  
Hallie Howe in honor of the PWD PSG  
Linda K. Hunt in honor of the PWD PSG  
Linda & Krista Hunt in memory of 'Capri',  
loved and dearly missed by the Rudin Family  
Linda & Krista Hunt in memory of Encanto  
Red Sky at Night CDX RN WWD 'Ruby'  
Rebecca & Jonathan Hynek in honor of Sox  
Carolyn Kalett in memory of Homer, Chester & Jim Kalett  
Angela Kalmanash in honor of the PWD PSG  
Kerk Family in memory of Black Hills Olive  
Evelyn & Robert Kern in memory of Willy  
Barbara Lachney in honor of the PWD PSG  
Tom, Judy Max-A-Million & Miss Margaret Leather in  
Memory of Ed Trahan, loving husband of Linda Trahan  
Margaret Lester in honor of the PWD PSG  
Sarah Maas in honor of the PWD PSG  
Pam Marshall in memory of Martha Stern  
Jack & Yvonne McCredie in memory of "Comet"  
Paul & Cheri Mezydlo  
Susan Myrick, Pickwick in memory of Ch Abadessan's Tantrums and Tiaras  
Karen & Water Paulick in honor of Misty Rose  
Shannon Pryor in honor of the PWD PSG  
Donna Reif Sack in honor of the PWD PSG  
John & Lynne Renaud in memory of  
Bayswaters Happy Hooligan CWD (Kramer)  
Marilyn Rimmer in honor of the PWD PSG  
Angela Robinson in honor of the PWD PSG  
Martha Ruskai in honor of the PWD PSG  
Julie Rust in honor of the PWD PSG  
Linda Schooner in honor of Leo, CGC, TDI  
Heather Shilo in honor of the PWD PSG  
Patricia Snyder in honor of the PWD PSG  
Kathleen Souza in honor of the PWD PSG  
Barb Stanek in honor of the PWD PSG  
Suzanne Steele in memory of Jesse and  
as a Thank You to Michele Montgomery  
Elaine Suter in honor of the PWD PSG  
Tanaki in honor of the PWD PSG  
Mary Beth & Troy Turner in honor of the PWD PSG  
Harriet Underwood in memory of Sweetie Ophelia, Chloe and Frannie  
Deborah Vaccaro in honor of the PWD PSG  
C.P. von Meysenbug as a Thank You  
Janis Watts, Legado Portuguese Water Dogs in  
Memory of 'Romeo' Legado Galante Romeo  
Janis Watts in memory of Stephanie Yee  
Lisa Wilkinson in memory of MACH Ch  
Downeast Song of the Sirens "Gema"  
Sue Wilcox-Hall in honor of the PWD PSG  
Matt & Kendra Yociss in honor of Ferncliff Thunder by the Sea, "Thunder"