

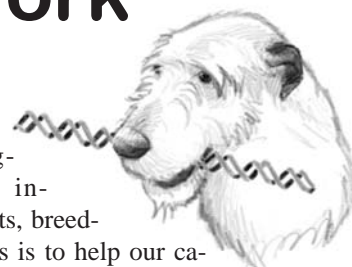


Focus

IW Genetic Health Research

Why It Takes Teamwork

by Nathan B. Sutter, Ph.D.



In this issue

IW Genetic Research	1
IWCA Specialty Preview	2
Bloodwork Basics	3
Osteosarcoma	
What You Need to Know	4
Meet Carolyn Dean	6
2003 IWTF Treasurer's Report	6
Samuel E. Ewing 3rd	6
IWF Donors	7
IWF Calendar	8

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Focus

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No one wants his dog to suffer from genetic disease. We have the best possible chance to improve the genetic health of a breed when scientists, owners, breeders, and breed clubs all work together.

Our first task is to describe the disease. This means developing a good assay for the disease, often called the phenotype, and understanding the underlying disease biology. Phenotyping can be either by simple observation, physiological measurement, or pathology examination. But in any case, it needs to be accurate, objective, and consistent.

Blood Samples Needed From Lifetime Cardiac Study IWs

The Irish Wolfhound breed is fortunate to have an excellent health study now underway. Dedicated volunteers have spent hundreds of hours organizing this effort, and many breeders and owners have contributed by filling out forms and submitting their dogs for phenotype analysis (in this case, EKG and blood pressure testing). Thanks to much hard work, the caretakers of this breed are well-poised to understand the genetic basis of disease in the Irish Wolfhound.

The next step is to localize the disease gene or genes. We can improve our odds of success at this stage by laying the proper groundwork. *Collecting DNA samples is an absolute must!* Obtaining a 10 cc blood sample from every dog enrolled in your health study, whether you think they carry a genetic disease or not, is a high priority. Information from every dog is useful.

Finally, once a chromosomal location is known, scientists can work to identify the exact DNA mutation or variant responsible for the disease in question. A genetic test, specific to this breed, can be developed from such information. Designing subsequent breeding programs, using information from genetic tests, can reduce the frequency of disease in your breed in a remarkably short period of time.

The long-term goal of involved scientists, breeders, and owners is to help our canine companions live longer and healthier lives. The road to success, however, starts with you, the caretakers of this breed, and your breed club. We will do everything we can to help you get started, and to help you understand the process along the way. We hope you will encourage other club members to participate by providing the needed samples and information.

If your IW is entered in the Lifetime Cardiac Study, and you won't be attending an event where Lifetime Cardiac Study testing and blood collection is offered, please contact mdwolfhound@aol.com (Mariellen Dentino) or pkwilson@crosslink.net (Kathy Wilson).

Good News for Irish Wolfhounds!

Kenine E. Comstock, Ph.D., has begun a research project to find the gene for osteosarcoma in long-limbed dogs. DNA collected from Irish Wolfhounds is of the utmost importance. **If your wolfhound has bone cancer—regardless of whether or not he is entered in any study—please consider adding your IW's blood to this research.**

To learn more about this project, plan to attend Dr. Sutter's presentation at the IWCA National Specialty in Lima, Ohio. On Thursday evening, May 20, Dr. Sutter and Dr. Margret Casal, University of Pennsylvania School of Veterinary Medicine, will both discuss genetics and Irish Wolfhounds. Dr. Casal's research involves two diseases in Irish Wolfhounds: epilepsy and primary ciliary dyskinesia. Dr. Sutter is a post-doctoral research fellow at the Ostrander Canine Genomics Laboratory, Fred Hutchinson Cancer Research Center, Seattle, WA, the largest canine genomics lab in America.

IWF SPEAKERS & EVENTS

at the 2004 IWCA SPECIALTY



Seminars Clinics Testing

DR. PAMELA J. GRASSO got her first wolfhound, Brae, when she graduated from vet school, and she has had them ever since. Pam works with Potomac Valley IW Rescue, and sees many IWs in her small animal practice. In addition to her DVM, Pam has an MS in veterinary science, and is certified in Acupuncture and Chinese Herbal Medicine. She will speak on Wednesday evening, in a program sponsored jointly by IWCA and IWF.

DR. R. SCOTT DOVE's presentation on Wednesday evening will focus on chiropractic therapy for sighthounds. Dr. Dove is a long-time Scottish Deerhound breeder and an avid foxhunter. He specializes in canine reproduction in addition to chiropractic and acupuncture therapy in his small animal practice. He has spoken to many breed and all-breed clubs.

DR. MARGRET CASAL is Assistant Professor of Medical Genetics at the University of Pennsylvania. In addition to her VMD, she holds a PhD in pathology and genetics. Her areas of special interest are genetic skin diseases and epilepsy and rhinitis in the Irish Wolfhound. Dr. Casal has worked with the IW Seizure Study since its inception. She will speak on Thursday evening.

DR. NATHAN B. SUTTER is a post-doctoral research fellow at the Ostrander Canine Genomics Laboratory at the Fred Hutchinson Cancer Research Center in Seattle, WA. Dr. Sutter will speak on Thursday evening, and help with DNA collection for IW health research on Thursday and Friday. Dr. Sutter spoke at IWADV in October, 2003.

DR. ANNE GEMENSKY-METZLER conducted our first IW CERF Clinic in Springfield, Ohio, last May. An Assistant Professor of Veterinary Ophthalmology at Ohio State University, Dr. Gemenisky-Metzler will once again examine the eyes of our hounds in Lima. The CERF Clinic will begin at 2:00 on Friday afternoon on the show grounds. Reserve a time by signing up at the Health Tent.

TUESDAY, MAY 18

- ❖ **THE IWF GIFT SHOP** opens its doors at the Annual Board Welcome Reception, Headquarters Motel (Best Western Lima).

WEDNESDAY, MAY 19

- ❖ **TESTING** on the Showgrounds
Lifetime Cardiac Study EKG & BP Testing
On the spot urinalyses for LCS IWs
DNA Collection for IW Genetic Research
- ❖ **IWF GIFT SHOP** opens on the showgrounds
- ❖ **SEMINAR** at the Headquarters Motel
Complementary Therapies for IWs
Dr Pamela J. Grasso and Dr. Scott Dove
Sponsored jointly by IWCA & IWF

THURSDAY, MAY 20

- ❖ **SEMINAR** at the Headquarters Motel
The Future of IW Genetic Research (Dr. Nathan B. Sutter) and Seizures and PCD in the IW (Dr. Margret Casal). Free pizza and Cash Bar.
- ❖ **TESTING** continues daily at the show site
- ❖ **IWF GIFT SHOP** is open for business at the show!

FRIDAY, MAY 21

- ❖ **CERF CLINIC** at the Showgrounds
Dr. Anne Gemenisky-Metzler, DAVCO
- ❖ **TESTING** continues at the Health Tent
- ❖ **ANNUAL IWF AUCTION** at the Headquarters Motel

SATURDAY, MAY 22

- ❖ **FINAL DAY OF TESTING**
Cut-off date for Lifetime Cardiac Study entry
- ❖ **RESEARCH RAFFLE DRAWING** following the Judges Dinner





Bloodwork Basics

A Reference Guide

Your vet can check the complete blood count (CBC), analyze blood chemistry to assess organ function, and check titers to see if disease-fighting antigens are present—all from one sample of your IW's blood. Many factors, such as drug interaction and fasting, can affect results; interpretation takes expertise.

COMPLETE BLOOD COUNT

The **CBC** evaluates three types of cells in the blood: red, white, and platelets. Blood cells are manufactured in the bone marrow, and each cell type performs a specific function which is critical to the overall health of the animal.

HEMATOCRIT gives the *proportion* of the blood, by volume, which consists of red blood cells. A low hematocrit (*anemia*) may have many causes. High hematocrits are seen in many sighthounds, and in animals living at high altitudes, and also in dehydration.

HEMOGLOBIN is the iron-rich protein in red blood cells. Since oxygen travels through the bloodstream bound to haemoglobin, this measurement indicates how much oxygen the blood can carry throughout the body.

WBC are the white blood cells, or leukocytes which fight infection in the body, and transport antibodies to sites of infection. An abnormal white cell count can indicate infection, inflammation, or other stress. *Normal WBC values for Irish Wolfhounds are frequently at the very low end of normal range.*

RBC or Red Blood Cell Count. In addition to carrying oxygen to the tissues, red blood cells also transfer carbon dioxide to the lungs.

MCV or Mean Corpuscular Volume. This value gives the size of the red blood cells, by measuring the volume of a single red cell.

MCH or Mean Corpuscular Hemoglobin. This measures the average weight of hemoglobin in the red blood cell.

MCHC is the mean corpuscular hemoglobin concentration. This test uses hemoglobin and hematocrit for calculation, rather than the red blood cell. *MCV, MCH, and MCHC are most useful in assessing anemia, and in choosing therapy to treat it.*

PLATELETS are also known as thrombocytes, and are vital to coagulation. Decreased levels may mean an immune system failure, or deficiency of B₁₂ or folic acid. Increased levels are seen in dehydration.

The **DIFFERENTIAL** count measures the numbers of the different types of white cells in the bloodstream. Each of these five cell types has a specific role to play.

NEUTROPHILS are the body's soldiers, defending against invaders. They are the body's chief defense against antigens and infection. Bands are immature neutrophils

EOSINOPHILS and **BASOPHILS** in the blood may be increased in allergic conditions, or in infestations with ecto/endo parasites. (EOS and BASOS).

LYMPHOCYTES produce antibodies, but most circulating in the bloodstream either attack invaders or coordinate the attack of antibodies. They are especially important in fighting viral infections.

MONOCYTES are the body's second line of defense against infection. Elevated levels are seen in tissue breakdown, chronic infection, and certain types of cancer.

BLOOD CHEMISTRY

GLUCOSE is the main source of energy. It is regulated by insulin produced in the pancreas, and other hormones and enzymes

KIDNEY FUNCTION

CREATININE AND B.U.N. are normally removed by the kidneys and excreted in urine. Elevated levels may reflect heart or kidney disease, among other things. Urea Nitrogen (B.U.N.) is the end waste product of protein metabolism. Creatinine is a waste product of muscle metabolism.

PROTEIN

TOTAL PROTEIN Proteins are the most numerous compounds in serum. Elevated levels can indicate, among other things, liver disease, lupus, or chronic infection.

ALBUMIN accounts for over 50% of serum protein, and it is manufactured by the liver.

GLOBULIN is important in immunologic responses, especially its gamma component. Higher levels in the bloodstream can be from chronic infection, whereas low levels results from immune compromise or liver or kidney disease.

LIVER FUNCTION

ALT (Alanine aminotransferase), was formerly called SGPT. It is an enzyme found primarily in the liver, and its level is useful in diagnosing liver damage

AST (Aspartate aminotransferase) is found primarily in the liver. Increased levels are found when there is severe diffuse hepatic insult, and also when there is tissue damage, kidney infection, or other problems. When levels are decreased, along with increased cholesterol levels, it is seen in cases of congested liver disease.

ALKALINE PHOSPHATASE This enzyme is produced in the cells of the bone and liver, and elevated levels can be a marker for tumors.

BILIRUBIN is a by-product of the breakdown of hemoglobin. It is a good indication of the liver's function.

GGTP (Gamma-Glutamyltransferase, or Gamma-Glutamyl Transpeptidase). Elevated levels are found in liver disease and bile-duct obstruction.

CHOLESTEROL is a critical fat that is involved in many important cell functions. Dogs, unlike humans, do not really suffer from the atherosclerosis associated with consuming high-fat foods.

PANCREAS

LIPASE is a pancreas-specific enzyme, and, when elevated levels are found in the blood, it is an indication that damage to the pancreas has occurred.

AMYLASE is manufactured in the pancreas and in the digestive tract, and, along with lipase, can indicate damage to the pancreas. However, the pancreas can be very inflamed without a rise in either value.

ELECTROLYTES

CALCIUM All cells require calcium to function. It is crucial in bone structure and neuromuscular activity. Calcium deficiency in the body fluids causes hyperexcitable nerves and muscles.

POTASSIUM is the major positive ion within cells. Abnormally

Continued on page 6

Osteosarcoma

What You Need to Know

by Kathy Wilson

Why you need to know now!

Osteosarcoma is the type of bone cancer that kills over 25% of all Irish Wolfhounds. It is an extremely aggressive and malignant tumor. Because of the swift progress of this disease, time is of the essence. New insights into the biology of tumor growth, along with an expanding arsenal of drugs available for treatment, have made it possible to extend quality life for our hounds. Early diagnosis is the key to capitalizing on the effectiveness of these treatments.

This article was written to help you recognize the symptoms of this disease, and to prepare you and your veterinarian to deal with it as expeditiously as possible.

Diagnosis

The classic scenario is a wolfhound who has lameness and swelling near a joint on one of his legs. When first brought to the vet, the IW was lame, but no swelling was detected. Often, rest and a little Rimadyl bring temporary improvement, but the lameness recurs, and this time the hard swelling is noticed. Radiographs (x-rays) of the affected limb go a long way toward a positive diagnosis

Most malignancies occur in the major weight-bearing bones of either the front or hind legs, with about a 60%/40% split front to rear. The most common site is the distal radius (the foreleg near the pastern, or 'wrist'), with the proximal humerus (upper arm near the shoulder joint) running a close second. The old adage, "away from the elbow, toward the knee" is accurate in the front, but in the rear, tumors can occur in both the proximal and distal femur (thigh bone, close to and away from the knee) as well as the distal tibia (shin bone, near the rear pastern, or hock joint). Osteosarcoma is not found mid-shaft, but at the ends of the bone, in the metaphyseal area where growth occurs (growth plates).

Investigate lameness promptly. Don't be afraid to be proactive! Ask your veterinarian to x-ray your wolfhound if he is limping and you can't recall an injury. By all means, investigate all options for treatment, but be aware that in most cases, survival time following diagnosis is measured in days and weeks, not months and years. Treatment begun immediately has a better chance of controlling this disease.

Prognosis

Osteosarcoma and hemangiosarcoma share a predilection for older, large and giant breeds, but dogs of any age and size can—and do—suffer from it. A dog who weighs over 80 pounds is about 60 times more likely to develop osteosarcoma than a smaller dog. There are other malignancies found in bone, but this tumor is by far the most common type of primary bone tumor in dogs. Between 8,000 and 10,000 dogs in the US will develop it this year. Our breed is not alone.

In humans, most osteosarcomas occur in adolescents, especially those undergoing growth spurts. It is likely that the rapidly-dividing cells found in the growth plates (both human and canine) are at a greater risk of genetic mutation.

Blood chemistry is often performed at the time of diagnosis, and alkaline phosphatase levels are indicative of prognosis. Very high activity (i.e., two to four times normal) of alkaline phosphatase is a sign of poor prognosis. The tumor's location is also prognostic, with tumors on the proximal humerus faring worst. Young dogs with osteo usually have very malignant tumors, with a poor prognosis. Also, dogs who show overt signs of metastases at time of diagnosis fare poorly.

Metastases

Cancer cells which break away and spread to other areas of the body are called metastases. Micrometastases have already spread in about 90% of dogs by the time of initial diagnosis. However, only about 10% of these dogs will have metastases large enough to be found at the time of diagnosis. Bone cancer does not spread across the joint, but rather spreads through the blood stream or the lymph system. Common sites for metastases are the lungs and other long bones, but metastases can be found anywhere. Palpation for skeletal and extra-skeletal nodules and additional radiographs of the chest can aid in diagnosing metastases. Chest films should include two lateral thoracic views as well as a ventrodorsal view. Bone scans (scintigraphy) are also extremely useful in picking up metastases to the other limbs, but are available only at veterinary teaching hospitals and specialty referral centers, and require an overnight stay. Biopsy is not routinely recommended, because it carries additional risk of fracture

to the already-weakened bone. In some cases, though, it may be essential to rule out fungal disease, which has a similar appearance on film.

Tumor Type

There are several subtypes of tumors, but, in general, osteosarcomas can be described as osteoblastic, osteolytic, or mixed (a combination of both cell types). In lytic (osteolytic) tumors, the destructive processes outstrip the laying down of new bone. Osteoblastic tumors stimulate production of excessive, unsound new bone matrix.

It is believed that most tumors start out as lytic, but progress to mixed. Tumor type, as well as staging (extent of the disease), account for much the variation encountered in response to treatment.

TRADITIONAL PAIN MANAGEMENT

Osteosarcoma is one of the most painful types of cancer; most dogs are euthanized because of it. The pain increases as the tumor grows and destroys the bone from the inside out. Traditional methods of pain relief include use of analgesics (pain-relieving drugs), radiation of the primary tumor site, or amputation/limb salvage surgery. Acupuncture may also provide some relief.

NSAIDs and Steroids

NSAIDs (non-steroidal anti-inflammatory drugs) available for veterinary use, include Rimadyl, Deramaxx, and Feldene, as well as aspirin. Acetaminophen is sometimes used in dogs, but probably will not give adequate pain relief. NSAIDs are usually well-tolerated, but a proton-pump inhibitor, such as Prilosec, should be added to lessen the possibility of GI tract problems, which are a primary side effect. Steroids such as prednisone are also excellent for reducing the inflammation and easing pain. The dose of steroids can be increased as the tumor grows and pain increases.

Opioids

When other pain medications no longer provide adequate relief, opioids should be added. Opioids include morphine, codeine, fentanyl, hydromorphone, and oxycodone. Combined with NSAIDs, they can make your wolfhound more comfortable. Also, there are some new options, such as Tramadol, are available.

Radiation Therapy

Radiation in canine osteosarcoma is used for pain palliation. About 70% of the dogs treated will have significant pain relief. Usually, four treatments are given at one-week intervals. This radiation is usually delivered by a machine that shoots high-energy x-ray beams to the tumor in a process called external beam radiation. However, radiation can increase the risk of fracture in dogs with lytic tumors.

Amputation /Limb Sparing Surgery

Amputation of the affected leg will certainly relieve the pain of the primary tumor, as will limb-salvage surgery, which removes the primary tumor but attempts to save the affected leg by resection, or by implanting a bone harvested from a donor dog. Dogs who undergo either of these surgeries without chemotherapy to control metastasis have only a 5% survival rate at one year. The primary tumor seems to send out some signal which keeps growth of the metastases in check. Once the primary tumor is removed, the metastatic lesions are free to grow unchecked. Chemotherapy is always added to the surgery to control the rate at which the secondary tumors develop. When chemotherapy is combined with amputation, survival approaches 50% after one year.

There are some obvious drawbacks to either of these surgeries, and they are contraindicated in dogs with underlying health problems or ongoing orthopaedic or neurological issues.

The three drugs most commonly used in chemotherapy are cisplatin, carboplatin, and doxorubicin. As a rule, dogs do not suffer as much from the side-effects common to humans undergoing chemotherapy.

NEW TREATMENT OPTIONS Bisphosphonates

The class of drugs called bisphosphonates, including alendronate (Fosamax) used in the IW Osteosarcoma Treatment Study, and the aminobisphosphonates in clinical trial at

the University of Illinois, are a class of drugs which have proven extremely useful in reducing pain in humans with bone cancers, and may have anti-tumor effects as well. These drugs can be combined with NSAIDS or other pain-relievers. They work by slowing the action of the osteoclasts, cells that tear down bone. Early findings suggest that osteolytic tumors respond better than osteoblastic tumors.

Radioisotope Therapy

The use of radioisotope therapy to treat people with metastatic bone pain has been very successful. Samarium-153 is a radio-pharmaceutical (a drug containing radioactive isotopes) which is designed to go to any areas where bone is being attacked by cancer cells. Because it is carried in the bloodstream, it can alleviate pain in many areas, but with minimal exposure to normal bone and healthy tissue because of the type of radiation emitted. It does, however, suppress bone marrow as a side-effect. A clinical trial testing its value in treating osteosarcoma pain in dogs, funded by the Morris Animal Foundation, is underway at the University of Missouri and the University of Florida. This study does not involve amputation of the affected limb, but does require a stay at the University.

Metronomic Chemotherapy

Metronomic chemotherapy is a new approach to slowing the growth of tumors by using frequent low doses of conventional chemotherapy drugs, usually combined with another drug believed to have anti-angiogenic properties. Tumor angiogenesis is the proliferation of a network of blood vessels which penetrate into cancerous growths. Without this blood supply, tumor growth halts. Metronomic protocols have proven successful in mice, and data from human studies is promising. A combination which has been tried is chlorambucil (used most often in canine lymphoma and leukemia), with piroxicam (Feldene). One very real benefit of metronomic protocols is the lack of side effects so common to traditional chemotherapy.

CURRENT RESEARCH

There is some evidence that NSAIDS (non-steroidal anti-inflammatory drugs, such as Rimadyl) may have anti-cancer properties, but this has not been proven. The same is speculated about certain antibiotics, including doxycycline and enrofloxacin (Baytril). Although both classes of drugs may have some anti-tumor effect, neither of them is likely to produce enough of an effect to actually stop the tumor from growing. However, in combination with other therapies, researchers hope they may prove to be useful.

Complicating research is the fact that this is a type of cancer which does have rare, but well-documented, cases of spontaneous remission.

Mapping the Gene for Canine Osteosarcoma

The search for the gene(s) involved in canine osteosarcoma has begun. Kenine Comstock, Ph.D., in the Ostrander Canine Genomics Laboratory, is working to identify the genetics underlying this disease process.

Blood Samples from every IW with osteosarcoma are needed! Please contact Kenine directly at kcomstoc@fhcrc.org, or telephone her at (206) 667-6980 if your wolfhound has been diagnosed with osteosarcoma.

Deciding what's right for your IW

Unfortunately, there is no real cure for canine osteosarcoma at this time. However, there is every reason to seek treatment for your wolfhound, and there is every reason to hope for truly significant progress in prolonging quality life for our wolfhounds in the near future.

You are the only advocate your wolfhound has. At the very least, every wolfhound is entitled to adequate pain management, and to euthanasia when the pain is no longer tolerable.

OSTEOSARCOMA STUDIES IN PROGRESS

The IW Osteosarcoma Treatment Study: Alendronate for Palliation in the Irish Wolfhound

Contact: Dr. William Dernell, CSU williamdernell@colostate.edu (970) 491-0336

Contact: Mary Lefferty, Colorado State U; mlaffert@lamar.colostate.edu; (970) 221-4515

Interleukin-12 Canine Osteosarcoma Study

Contact: Dr. Stuart Helfand, U of Wisconsin; 608 263 4548 helfands@som.vetmed.wisc.edu

Contact: Ilene Kurzman, Oncology Clinical Trial Coordinator. kurzmani@svm.vetmed.wisc.edu

Samarium-153 Radioisotope Therapy in Canine Osteosarcoma

Contact: Dr. Carolyn Henry, U. of Missouri HenryC@missouri.edu

Contact: Dr. Rowan Milner, U. of Florida MilnerR@mail.vetmed.ufl.edu

Aminobisphosphonates to Manage Bone Pain in Canine Osteosarcoma

Contact: Dr. Timothy M. Fan, U. of Illinois Veterinary Teaching Hospital, (217) 333-5375

Contact: Dr. Louis-Philippe de Lorimier, U. of Illinois VTH, (217) 265-4088

Contact: Dr. Sarah Charney, U. of Illinois VTH, (217) 244-8747

Meet Carolyn Dean

Carolyn Dean is making a difference. After losing her first IW, Clancy, at age four to osteosarcoma, and her second, Emma, at age three to heart disease, she began to try to think of ways in which she could help the Irish Wolfhound Foundation. The Foundation has given her an outlet for the frustration we all feel when a beloved young IW suffers, and we are unable to help.



Clancy, Carolyn, and Emma

is a graphic artist and professional photographer. Her ingenious idea of donating her entire ad layout design fee to the health study chosen by each client has proven popular with IW fanciers throughout the world. Their ads appear in *Irish Wolfhound International* magazine (contact editor Cie Harris for more information at jedi@tgi.net). So far, Carolyn has donated over \$700 from design fees to the Irish Wolfhound Foundation!

Carolyn and her husband, Jerry, live near St. Louis, MO, with four wonderful IWs: Rose, Bear, Arthur, and Olga. Rose and Bear, now four, are the Foundation 'poster puppies' (opposite page). Bear and Arthur are working therapy dogs who visit schools for special-needs children, and are always a big hit with the youngsters. You can contact Carolyn at jdphoto@accessus.net.

Thanks, Carolyn!

The Passing of Samuel Evans Ewing, 3rd Marks the End of an Era in the IW World

Reprinted from *Dog News*

With the passing of Samuel Evans Ewing, III on Sunday, February 1, 2004, the fancy has lost a true champion of purebred dogs. For more than 50 years, Sam was a regular exhibitor at shows throughout the U.S. and Canada. His devotion to Irish Wolfhounds and purebred dogs has had a wonderful influence on our sport that will be valued for years to come.

Sam obtained his first Irish wolfhound from Alma Starbuck in 1953. Almost as a whim, he entered at Devon as his first show, and placed third in the group. Initially, he only owned dark and black males, but in 1962 Sam started breeding and the rest was history. Over the past 50 years Sam, (Eagle Kennels) has produced literally hundreds of champions including Best of Breed at the Irish Wolfhound Club of America Specialties in 1966, 1972, 1983, 1984, and 1990. In the years that his dogs did not win the national, they often went Best of Opposite. He was awarded the coveted Alma J. Starbuck Trophy. His dog, Breac O'Shawn McDown of Eagle was the first IW to win the group at Westminster. Sam owned the other Westminster IW Group winner too (1985 - Ch Aodh Harp of Eagle).

More than a highly respected owner-handler who spent countless weekends at shows in all parts of the country, Sam was always

very generous in sharing his time and expertise in helping newcomers to the breed. On several occasions at "fun matches", as well as at training sessions for judges, Sam brought hounds of his that were not show quality in order to demonstrate faults to be avoided.

In addition to an influential breeding program, and going to shows, Sam somehow found time to be a president of the Irish Wolfhound Club of America as well as serving on that club's board. He had been the IWCA's Delegate to the AKC since 1987 as well as Chair of the IWCA's Education Committee. He was a founding board member of the Irish Wolfhound Foundation. Sam was the President of the Kennel Club of Philadelphia, past President, Vice President and Show Chairman of the Bryn Mawr KC; Board Member and Secretary of the Chester Valley Kennel Club; past Chief Ring Steward, Penn Treaty KC; a founding member, past President, Secretary-Treasurer of The Irish Wolfhound Association of the Delaware Valley and 8 time winner of Best of Breed at their Specialty. Sam was a recent recipient of a lifetime award as a Board member of the Potomac Valley Irish Wolfhound Association. He was a member of the Board and the Planning Board of Morris and Essex.

Peter R. Van Brunt

Continued from page 3

Bloodwork Basics

high values are associated with hemolysis (destruction of red blood cells), Addison's disease, diarrhea, and renal failure. Low levels can be seen in Cushing's disease, or after vomiting.

PHOSPHORUS levels are inversely related to calcium levels.

SODIUM, POTASSIUM, and CHLORIDE These three minerals are particularly important for nerve and muscle function and water balance. They help maintain osmotic pressure, and are involved in maintaining the acid-base balance.

CO₂ (Carbon dioxide) CO₂ levels are related to the respiratory exchange rate as well as kidney function. When looked at along with the other electrolytes, it is generally a good indicator of acidity and alkalinity.

A/G (Anion Gap) This ratio measures the concentration of cations (sodium, potassium) and the anions (chloride, CO₂) in the extracellular fluid. An increase in this measurement can reflect metabolic acidosis or alkalosis.

CPK measures creatine phosphokinase (CPK), an enzyme found predominantly in the heart, brain, and skeletal muscle. When the total CPK level is substantially elevated, it usually indicates injury or stress to one or more of these areas.

TITER A titer measures antibodies to a specific substance, thus providing information about your dog's immunity to a particular disease.

OSMOLALITY Values reflect the hydration at time of testing. Osmolality increases with dehydration, and decreases with overhydration.

The Irish Wolfhound Foundation, Inc 2003 Treasurer's Report

	<u>General</u>	<u>Education</u>	<u>Rescue</u>	<u>Research</u>	<u>Total</u>
Income	72233.00	0	560.00	58363.71	131156.71
Expenses	9554.90	408.25	0	30503.87	40467.02
Total	62678.10	-408.25	560.00	27859.84	90689.69
Riverlawn Fund		Balance as of Dec 31, 200			16028.30

The Irish Wolfhound Foundation gratefully
acknowledges contributions from the following supporters
received between September 1, 2003, and December 31, 2003.

Frances Abrams Deboarh A. Aiken Judy Andrews JoAnne L. Brown Vada & Gene Brown Jody Bryan Robin A. Burchett Wm. Kelly Carr Ben Carter Jeffrey W. Cline Patricia W. Cobb Julie Cooper	In Memory of Elliot In Memory of Derrick In Memory of Ch. Hound Hill Steele In Memory of Maddy In Memory of My Hounds & 'Tis More of the Ridge In Memory of Sheila Conway	Margaret M. LaRosa Glynis Littlewood Tracey A. Luty Judith H. Mazurkiewicz Molly McAfee Barry McCain & Tammie Wears Susan McGreevy Karen F. Malone Deirdre A. McCarthy Joan E. McNamara Pamela A. Menth Patricia Michalski Satu & Bernadette Mitrakul Jeffrey A. Moore NCIWC William J. Neu Mary & Margaret O'Brien Susanne L. Orr Jack & Susan Owens Roger G. Patera Janet Bishop Patrick Cynthia & Dave Patterson Lincoln W. Pavey	In Memory of Maryanne In Memory of Phillippa In Memory of Tiggerella In Memory of Lyric McGrath In Memory of Maxwell In Memory of Beau In Memory of Jackie Karpinski In Memory of Phillippa Crowe In Memory of Our Shannon In Memory of Tippy (Salutary Nenagh Rose Eagle) In Memory of Mick In Memory of Kerry Reilley and Nora & Kaitlin Pliner In Memory of Mick In Memory of Miss Sugar In Memory of Killian In Memory of Owen (Eaoin) In Memory of Cypress & Dublin In Memory of Teddy In Memory of Elliot
Kathy C. Cummings Judith Curtin Carolyn Dean Mariellen Dentino Karen D. Ducey R. Elaine Ellis Alice M. Estabrooks David & Leeann Faughn John E. Fitzgerald Eileen Flanagan Jack & Eva Marie Freund	In Memory of Sara, Elliot, Sodah, Tempest, Erica, Maddy, and Tigger In Memory of Brady & Sarah In Memory of Redtops Coriella In Memory of Seamus, Clancey, Paddy, Tommy, & Justin In Celebration of Paddy & Mikey In Memory of Erica In Memory of Clancy	Barbara R. Peskin Alison Peters John J. Peyton Roberta Pliner Joseph A. Ruffing Mary Ryan Marie T. Scheuren Richard A. Schoenfeld Judith L. Snyder Christina Strelova Margaret Sulanowski Dorothy L. Sullivan Chris & Megan Thompson Roni Kaluza & Randy Valenti Jo VanWely Peggy Voorhees Marcia Ann Ward Stephen P. Weir James Wiggs & Stephanie Spencer Kathy & Peter Wilson	
Barbara Fyrberg Carol Gabriel Roger Gras Sharon Green Ann A. Hammond Eva M. Harris Kristy & Jeffrey Herbert Lynne M. Heslip	In Memory of Sara, Elliot, Sodah, Tempest, Erica, Maddy, and Tigger In Memory of Brady & Sarah In Memory of Redtops Coriella In Memory of Ch. Kindred Armrd Knight O'Ross In Memory of Ch. Emeraldisle Wildisle Sorceress		
Tracey K. Higgins William J. Holmes Jill Hubley IWAGSM IWAGSM IWCC Brian B. Kelley Dr. & Mrs. Thos. Kirschbaum Mary Lynne Kneller Diane Koontz	In Memory of Joanne Holmes In Memroy of Cameron Smith In Memory of Lawrence Koontz In Memory of Sullivan In Memory of Magnus Mogh		

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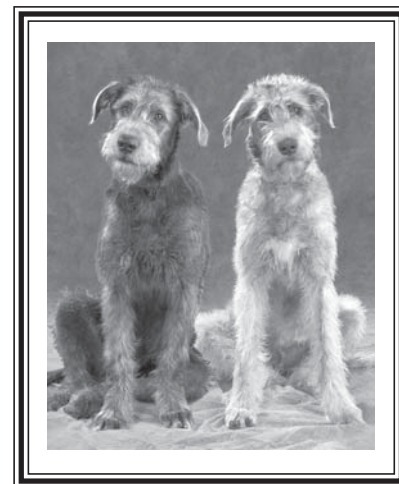
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IWF Calendar 2004

April

16 & 17 GLIWA Specialty Racine, WI
Lifetime Cardiac Study Testing

May

19 -22 75th IWCA Specialty Lima, OH
Testing, Seminars, Clinics - See Page 2

June

19 RMIWA Fun Day Longmont, CO
Lifetime Cardiac Study Testing

July

23 IAWC Specialty Lompoc, CA
Lifetime Cardiac Study Testing

August

Dog Days of Summer
Give your wolfhounds extra hugs!

September

3 RMIWA Specialty Greeley, CO
11 NCIWC Petaluma, CA
Lifetime Cardiac Study Testing

October

3 & 4 IWADV Pottstown, PA
Lifetime Cardiac Study Testing

November

6 & 7 IWCA - IWF Seminar St. Louis, MO
Pat Trotter Born to Win Seminar for IWs
Hands-on workshop for IWs and their owners



The Irish Wolfhound Foundation, Inc.

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