



ALPACA RESEARCH  
FOUNDATION

# ANNUAL APPEAL 2015

## ARF PRESIDENT'S REPORT

Every year, at about this time, we at the Alpaca Research Foundation (ARF) send a letter to the alpaca folks in North America hoping that it will stimulate donations to support our ongoing research funding. For those of you receiving this letter for the first time, ARF is a 501(c)(3) nonprofit corporation whose goal is to financially support and encourage scientific research to benefit the North American alpaca community. 100% of our donations go to support research. Details regarding all of our activities can be found at [www.alpacaresearch.org](http://www.alpacaresearch.org).

We have just approved two studies for the 2015 funding year. One looks at the pharmacology of prednisolone, a powerful anti-inflammatory agent which is in the glucocorticoid (steroid) class. This drug could become a very useful addition in the veterinary care of camelids. In addition, a project has been started to evaluate the genes on the Y-chromosome of alpacas with special attention to those which affect fertility and reproduction.

A study funded by ARF was recently completed and looked at the pharmacology of a new long-acting anthelmintic (anti-parasite drug), eprinomectin ERI. This drug is in the class of avermectins (ivermectin, doramectin, moxidectin etc.) which are used regularly to prevent meningeal worm infection in alpacas. In cattle, this drug controls roundworms for up to 150 days and sarcoptic mange for up to 56 days. John Pollock, DVM and Daniela Bedenice, DVM at the Cummings School of Veterinary Medicine at Tufts University have shown that subcutaneous injection of this medication, at 5X the dose required in cattle, produced therapeutic blood levels in alpacas for 120 days. Additional studies will be required to determine whether eprinomectin ERI is effective in preventing meningeal worm infection. A significant problem with repeated use of anthelmintics has been the development of resistant parasites. The relative risk of drug resistance compared to ivermectin and other avermectins also remains to be assessed.

A parasite which has become very resistant to anthelmintic therapy and has wreaked havoc in sheep and goats for many years has now become a problem in alpacas. *Haemonchus contortus* (barber pole worm) causes severe anemia in small ruminants and has become resistant to numerous anthelmintic drugs. A vaccine against this parasite has recently been developed in Western Australia and has been shown to be 80% effective in a study in sheep. We at ARF are encouraging a number of investigators to propose a study looking at this vaccine in alpacas.

Needless to say, our ongoing efforts to support excellent scientific research in alpacas are reliant on ongoing efforts by you, the alpaca owners, to provide the financial wherewithal to continue our work. Please go to our website and click on "Make A Difference" to see what you can do to help us achieve our goals.

Sincerely,

Alan ("Abe") Rosenbloom, MD  
President

## ARF SUCCESSES

### ARF has funded research that has lead to:

- A next generation map of the alpaca genome becoming available on US government websites. This has spurred research into the development of genetic tests for commercially important traits and heritable defects, which will benefit the alpaca industry.
- Identification of the ovulation inducing factor in alpaca semen that can induce ovulation by intramuscular injection, as nerve growth factor.
- Development of appropriate vaccination protocols in alpacas for rabies, West Nile Virus, and eastern equine encephalitis.
- Determination of what works and what doesn't in the treatment of alpaca ulcer disease, a potentially devastating disorder.
- A better understanding of the etiology and treatment of hyperglycemia (high blood sugar) in alpacas, a serious complication with dire consequences if not aggressively attended. Improved methods for detection and treatment of *M. haemolamae* ("Epe"), *E. mac* and the corona virus that causes acute contagious respiratory disease in alpacas. Proper dosage for treatment of alpacas with several drugs including the sedative, midazolam, anti-inflammatory medication, flunixin, the antibiotics florfenicol and enrofloxacin and the analgesic, Tramadol, to name a few.
- Methods for management of anthelmintic resistance in alpacas.

## VOLUNTEER

The ARF Development Committee was disbanded due to lack of volunteers. We have had many enthusiastic volunteer members over the years and we sincerely appreciate their efforts. At this time, with donations continuing to fall, and important research projects not being funded, we need volunteers with interest and skill in raising funds. For more information please contact Patricia Craven at [pacraven1@gmail.com](mailto:pacraven1@gmail.com).

# ARF RESEARCH STUDIES

## ONGOING STUDIES

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### **Indicators of anemia of chronic inflammation in anemia of alpacas**

**Principal Investigator: Susan J. Tornquist, DVM, PhD, College of Veterinary Medicine, Oregon State University Corvallis, Oregon**

In this study, we will determine whether one of the most common causes of anemia in hospitalized human patients could be causing anemia in alpacas. It is known as anemia of chronic disease, and accompanies a wide variety of diseases. It's important to distinguish anemia of chronic disease from other causes of anemia, such as iron deficiency, because the treatments are quite different and treatment for iron deficiency could actually be detrimental to alpacas with anemia of chronic disease. It is also important understand the underlying cause of anemia so that potentially useful new therapies can be developed.

### **Are Polymorphisms in the non-coding regions of the agouti gene responsible for color variation in alpacas?**

**Principal Investigator: Kylie Munyard B.Sc (Hons), PhD, Senior Lecturer-Molecular Genetics Curtin University, School of Biomedical Sciences Perth, Western Australia**

Currently the genetics of color in alpacas is poorly understood and so breeding for specific colors or patterns (or trying to avoid them) is difficult. This project aims to build on previous successful research and fully characterize the agouti gene from alpacas of different colors. The sequences of different colored alpacas can then be compared, enabling researchers to identify mutations that either cause or contribute to color variation in alpacas.

### **Genetic Basis of Choanal Atresia**

**Principal Investigator: Belinda Appleton, PhD, University of Melbourne, Melbourne, Australia**

Studies are under way to develop a genetic test that will detect mutations associated with choanal atresia and ultimately be able to predict which alpacas are likely to have cria with this disorder.

## STUDIES COMPLETED THIS YEAR

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### **The pharmacokinetics of subcutaneous Eprinomectin ERI (LongRange<sup>®</sup>, Merial) administration in healthy adult alpacas**

**Principal Investigator: John M. Pollock, DVM, Tufts Cummings School of Veterinary Medicine Woodstock, Connecticut**

LongRange<sup>®</sup> is a new, long-acting (extended release) injectable dewormer which achieves effective blood levels to control mite infections (mange) in cattle at pasture for up to 56 days and intestinal worms (nematodes) for up to 150 days. As drug levels and efficacy can vary between animal species, LongRange<sup>®</sup> was specifically evaluated in alpacas to optimize its use, minimize its misuse and help prevent development of resistance. This study showed that a single injection of LongRange<sup>®</sup> resulted in therapeutic levels of the drug in alpaca blood that were maintained for 120 days. This study has been accepted for publication in the *Journal of Veterinary Pharmacology and Therapeutics*. Details of the study will also appear in *Alpacas Magazine*.

### **Evaluation of Three Short-Term Field Anesthesia Protocols**

**Principal Investigator: Aubrey N. Baird, DVM, Purdue University**

Practicing veterinarians are frequently called upon to perform short-acting injectable general anesthesia of alpacas in a field setting. The reasons for such anesthesia vary from surgical procedures, wound therapy, bandage changes, diagnostic procedures such as radiographs or just a thorough examination that cannot be done safely or comfortably in the non-anesthetized animal. Many practitioners have a "favorite recipe" that works for them. However this is an area open for evaluation to determine a more effective, safer protocol. The determination of such a protocol would have an immediate impact on the practice of alpaca field anesthesia.

### **The Pharmacokinetics and Pharmacodynamics of Buprenorphine and Sustained Release Buprenorphine in Adult Alpacas**

**Principal Investigator: Turi K. Arnes, DVM, Ohio State University**

The opioid buprenorphine is commonly used for the treatment of pain in veterinary medicine because it causes minimal sedation and is relatively long lasting. While it has been studied in other species, studies in alpacas are limited. This study will provide veterinarians with information addressing pain management in alpacas with, including effective doses, duration of action and dosing interval. This knowledge will be beneficial for increasing veterinarians' ability to manage pain, supplement anesthesia and improve care of critically ill camelids.

## NEW STUDIES FOR 2015

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### **Isolation and Characterization of y-Linked Genes Regulating Male Fertility in Alpacas**

**Principal Investigator: Terje Raudsepp, PhD, Texas A&M University**

The goal of this study is to isolate and characterize y-specific genes expressed in alpaca testes and identify those with likely functions in male fertility. The study will initiate y chromosome research in alpacas, thus filling a major gap in the female-based alpaca genome sequencing project.

### **Pharmacokinetics of Orally Administered Prednisolone in Alpacas**

**Principal Investigator: Ricardo Videla, DVM, University of Tennessee**

Glucocorticoids, such as prednisolone, are frequently used in human and veterinary medicine. Their anti-inflammatory properties make them a valuable asset in the treatment of autoimmune diseases and other conditions affecting the skin and nervous system. Glucocorticoids are known to have side effects in many domestic species such as increasing susceptibility to infection, abortion, and an elevation in liver enzymes. The purpose of this study is to determine the ability of alpacas to absorb and metabolize prednisolone and to evaluate their health during and after treatment.

# MEET THE ARF BOARD OF DIRECTORS

## President, Alan (Abe) Rosenbloom, MD

Siler City, North Carolina, [aarosenbloom@gmail.com](mailto:aarosenbloom@gmail.com)



Abe has owned Black Tulip Farms Alpacas since 2000. He has been raising huacayas ever since. He has been a member of AOBA since 1997 and a member of ARI since 2000. He was one of the founding members of the Carolina Alpaca Breeders and Owners (CABO) and its first president.

## Vice President, Lisa Williamson, DVM

Athens, Georgia, [lisa1@uga.edu](mailto:lisa1@uga.edu)



Lisa is an Associate Professor of Large Animal Medicine at the University of Georgia College of Veterinary Medicine. She practices as a field service clinician, seeing horses, goats, sheep, and, of course, llamas and alpacas at their farms. Her research focus has been in the area of internal parasites that infect llamas and alpacas.

## Secretary, Michelle L. Ing, DVM

Granite Bay, California, [diamondmals@aol.com](mailto:diamondmals@aol.com)



Michelle graduated from UC Davis in 1996. She completed an internship in Equine Surgery in 1997 at Hagyard-Davidson McGee in Lexington, Kentucky. In 1998 she began her private practice with an emphasis in camelids in Spokane, Washington. Today she lives in Granite Bay, California, where her referral clinic is dedicated to camelids.

## Treasurer, Patrick Long, DVM

Corvallis, Oregon, [lama\\_dr@msn.com](mailto:lama_dr@msn.com)



Pat is a practicing veterinarian in Corvallis, Oregon. Llamas and alpacas comprise more than half of his practice. He is a member of the American Veterinary Medical Association and the Oregon Veterinary Association, and a board member of the North West Camelid Foundation, Alpaca Research Foundation, and the Morris Animal Foundation. He is coauthor of the book *Llama and Alpaca Neonatal Care*.

Dr. Long has written many articles for *Alpacas Magazine* and has participated in several importation screenings for ARI. Dr. Long's areas of interest are herd health management, nutrition, and reproduction.

## Karen Baum, DVM

Huddleston, Virginia, [lildoc@mindspring.com](mailto:lildoc@mindspring.com)



Dr. Baum was formerly a member of the faculty of the College of Veterinary Medicine, Virginia Tech, where she founded the Large Animal Neonatal Intensive Care Unit and established the Lama Advisory Committee. She is now president and owner of Little Doc's Veterinary Care, a private large animal practice and clinic emphasizing llamas and alpacas. Karen has been on the ARF board of directors since its inception in 1997. She also serves on the BOD of the International Lama Registry (ILR). Karen is president of the International Llama Foundation (ILF), a nonprofit organization which is dedicated to educating people about camelids. Dr. Baum is past president and past vice-president of the Llama & Alpaca Association of Mid-Atlantic States (L.A.M.A.S.) and is enthusiastic about the llama and alpaca industries.

## Shauna R. Brummet, PhD

Wadsworth, Ohio, [hfh@hobbyhorsefarm.com](mailto:hfh@hobbyhorsefarm.com)



Shauna, with her husband Jeff bought their first alpacas in 1996 and operate Hobby Horse Farm in Medina, Ohio. Shauna served on the ARF board from 1998 to 2001. In 2004 she was elected to the ARI Board and served as VP and Chief Scientist for six years. After taking a required year off the ARI Board, during which time she remained as Chief Scientist, Shauna was re-elected and served as VP and Chief

Scientist for a third term. During her time on the ARI board she was instrumental in helping to develop robust scientific tools to support the herd development plans of North American alpaca farmers. In addition to her work on the ARI board, Shauna helped organize the 1st International Workshop on Camelid Genetics and the 2011 Camelid Conference on Reproductive Biotechnologies and Genetics, which were collaborative efforts of ARI and ARF.

## Patricia Craven, PhD

Ormond Beach, Florida, [pacraven1@gmail.com](mailto:pacraven1@gmail.com)



Patricia pursued a career in medical research in the areas of endocrinology and metabolism at the University of Pittsburgh for 35 years. She and her husband Bryan owned Cherry Ridge Alpacas. She has served on the board of directors of the Alpaca Research Foundation since 2001, and remains passionate about alpaca research.

## Randy Larson, DVM

Alpha, Illinois, [larson26@winco.net](mailto:larson26@winco.net)



Randy Larson, DVM, operates Larson Camelid Services and was a partner in a mixed veterinary practice in Western Illinois for many years. As an alpaca owner and breeder with his wife Jan, his practice focus is now alpacas. He graduated from the University of Illinois, as did Jan and Randy's three children.

**The ARF Board members  
volunteer their time. ARF  
has no paid employees.**



# HONOR YOUR VETERINARIAN

Many veterinarians provide compassionate care for our alpacas around the clock and at a moment's notice. So often many of us take veterinary care for granted. Here is a wonderful opportunity to honor your veterinarian with a gift of \$500 to ARF. Your veterinarian will receive a 10.5" x 13" plaque with a personalized certificate of appreciation to commemorate your gift.

# SPONSOR A STUDY

For a gift of at least \$1000 you may sponsor an ARF funded study. As a study sponsor, your name will appear on the ARF website. ARF will notify the study investigator of your gift and your name will appear in the acknowledgements when the study is published in a scientific journal. You will also receive an ARF Angel web banner for your website.

## TEST YOUR KNOWLEDGE ABOUT ALPACA RESEARCH

ARF is the only national organization devoted solely to funding research that benefits the North American alpaca breeder.

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ARF funds applied research. Basic research is funded if and only if there is a high potential for applicability in the future.

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ARF is an independent organization that is not affiliated with AOA or ICI.

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ARF is a 501(c)(3) nonprofit organization that can accept tax deductible donations.

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The ARF board of directors are all volunteers. ARF does not have paid employees.

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100% of your donation to ARF goes to support alpaca research.

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**If you answered true to all these statements, you have a perfect score!**

## DONATE YOUR VEHICLE TO ARF

Fast and free nationwide vehicle pickup by fully licensed, bonded, and insured towing professionals.

We accept all kinds of cars and vehicles regardless of condition including that Old Rusty Alpaca Trailer, Cars, Trucks, RV's, Motor Cycles, ATV's, Snowmobiles, Boats, Vans, Trailers, Jet Skis, and more.

Car and vehicle donating is a great way to recycle and beneficial for the environment, while helping ARF achieve its goals

Go to the ARF website for complete information.  
[www.alpacaresearch.org](http://www.alpacaresearch.org).