

Good Morning:

My name is Nancy Harvey, I am President of the Arabian Horse Association (AHA), which is a major equine association serving 84,000 owners across North America. It registers and maintains a database of more than one million Arabian, Half-Arabian and Anglo-Arabian horses and administers approximately \$1 million in annual prize money. AHA produces five national championship events, recognizes close to 400 Arabian horse shows and distance rides, and provides activities and programs that promote breeding and ownership.

I am also a Board Member of the Arabian Horse Foundation (AHF), the philanthropic arm of AHA. Since the initiation of the AHF Equine Research Program in 2007, AHF has been committed to supporting equine research with a focus on projects of particular concern to the Arabian breed. To date, \$75,000 has been provided in support of a variety of projects, including collaborations with Dr. Samantha Brooks (University of Florida), Drs. Cecilia Penedo and Carrie Finno (University of California-Davis Veterinary Genetics Laboratory), and co-sponsorship of projects with the Morris Animal Foundation.

In the past decade, AHF has played an important role in supporting research studying genetic disorders affecting the Arabian breed. In 2007, when AHF added the research arm, the test for Severe Combined Immunodeficiency (SCID) was the only genetic test available for Arabians. Since that time, AHF has supported research projects that have resulted in the development of direct DNA tests for Cerebellar Abiotrophy (CA) and Lavender Foal Syndrome (LFS). AHF has also supporting genomic projects studying Juvenile Idiopathic Epilepsy (JIE), Occipitoatlantoaxial Malformation (OAAM), Equine Metabolic Syndrome (EMS), and equine melanoma.

2. What it is that you wish you could do, but just cannot do today due to cost or lack of technology?

Since AHF is financially supported solely through donations from the Arabian horse community, we are working with a very limited budget. Even with limited funds, AHF has been successful in moving forward important research in genetic conditions affecting the Arabian horse, thanks to the much needed technology and additional funding made available from initiatives outside the scope of AHF/AHA.

There are several genomic related projects of great interest to the Arabian breed that we would like to see further emphasis on within the research community. These research efforts absolutely require the support of USDA and collaboration among researchers across the country.

- EMS
- Equine Cushing's Disease
- Type 2 Polysaccharide Storage Myopathy (PSSM2)
- Recurrent Exertional Rhabdomyolysis (RER)
- Myofibrillar Myopathy (MFM)
- Equine Melanoma

- Squamous Cell Carcinoma
- Osteochondritis Dissecans (OCD)
- Adverse effects to vaccines

- Reproduction related topics including:
 - hereditary influence on frozen quality semen
 - genetics of older stallions and how age of stallion may effect offspring
 - effects of inbreeding on semen quality, fertility, and conception
 - late pregnancy loss
 - conception rates in mare line

- mitochondrial lines having a predisposition towards producing female only offspring with male embryos having a high incidence of abortion or early loss

- Infectious disease related topics including:
 - EVA
 - EIA
 - EPM

3. What is/are the biggest current and 10-year challenge(s) to your industry that changing traits in your animals might be able to address?

The Arabian breed is very versatile, with numerous performance disciplines represented at our competitions. As the quality of competition continues to increased, we are seeing increased specialization in these horses. Continuing to study the genetic component of previously mentioned myopathies (PSSM2, RER, MFM) is vital to the welfare and soundness of not only horses used in competition, but also for pleasure horses. In addition, increased understanding of the genetics of gait and structural faults such as club feet will help improve selection and breeding of the Arabian horse. An additional consideration for a closed breed, such as the Arabian (especially with a variety of small bloodline subgroupings), are reproduction issues; the better the fertility of our horses, the better the reproductive fitness of our breed.

4. Are there opportunities between different segments of the industry? For example, something that does not fall within the wheelhouse of the breed association/company or the meat industry (expand to any topic one can think of), but would be very beneficial for both industries?

Expanding our participation with rehabilitation programs. Horses, and most specifically Arabians, are very successful as rehabilitation horses and we need to be able to link the programs available to those in need with programs utilizing Arabians.

5. Other insights?

We are in a generation of change and the speed of change is ever increasing. The last century was the fastest changing century on record and this century looks to be even faster in its change as it relates to the environment, livestock care and most dramatically technology. We, as a group must not lose sight of the importance of horses and livestock in our daily lives in both its social and economic impact.

Regards;
Nancy Harvey
President, Arabian Horse Association