



Research at the Cummings School has expanded what we know about alpacas and the diseases that compromise their health.

Amazing Alpacas

Pesky virus spawns broad research agenda By Leslie Limon

A

FEMALE ALPACA AT SPRUCE RIDGE FARM IN NEW YORK'S HUDSON Valley gave birth to an apparently healthy female cria (baby alpaca) in 2005. Soon after, a male cria in the herd fell ill. Herd owner Steve McCarthy, president of the Empire Alpaca Association, brought the baby to the Cummings School, where

Daniela Bedenice, an assistant professor of clinical sciences, suspected bovine viral diarrhea (BVD), which is prevalent in the cattle industry.

There was just one problem: Back in 2005, BVD was not considered common in alpacas. Yet the male cria tested positive, as did 39 other alpacas in McCarthy's herd—including the newborn. Most of them recovered, but the newborn was found to be "persistently virus infected," having been exposed *in utero* before its immune system could develop antibodies to combat the disease.

"The clinically healthy dam is a kind of 'Trojan horse' whose cria starts shedding the virus immediately after birth," says Bedenice. "The newborn may show no signs of illness for weeks as it silently spreads the virus through a susceptible herd." Among those exposed in McCarthy's herd were 12 pregnant females, which were taken off-site for birthing to evaluate the incidence of infection and isolate the crias. Nine had persistent infections, which Bedenice monitored in strict quarantine.

After Spruce Ridge Farm became the first in the U.S. to go public with a case of BVD in an alpaca herd, Bedenice began to research the virus, supported by a gift from the Empire Alpaca Association. The industry also stepped up its efforts to educate owners. The New England Alpaca Owners and Breeders Association (NEAOBA) requires show animals to be tested for BVD exposure. At conferences, Bedenice would show photos of healthy-looking infected crias

to debunk the myth that you can identify a sick cria on sight.

Another focus of Bedenice's research, Eastern equine encephalitis (EEE), a viral disease that causes inflammation in the brain, was first identified in alpacas at the Cummings School in 2004. The following year, NEAOBA funded a study to evaluate the prevalence of natural EEE antibodies in alpacas, and the Alpaca Research Foundation supported a clinical trial to determine if the EEE vaccine would produce antibodies against the disease and to make sure it was safe. It did, and it was.

Physiologically, alpacas share common attributes with cows, horses and even cats. Intrigued by alpacas' gentle and inquisitive nature, Bedenice saw an opportunity to use her research to improve the health of this species of South American camelid.

The cost of infectious diseases and other illnesses on alpaca herds is considerable. The average proven breeding female fetches anywhere from \$20,000 to \$50,000, and show animals considerably more. The Empire Alpaca Association, NEAOBA and New England Alpaca Tours (composed of Acorn Alpaca Ranch, Cas-Cad-Nac Farm and RiverView Alpacas) continue to contribute to Bedenice's research. The Empire Alpaca Association recently supported a study to evaluate lung disease. The Alpaca Research Foundation funded research on how chronic and persistent BVD infection affects alpacas' immune systems.

Among the cadre of donors to her work are clients who, Bedenice says, want to "facilitate the acquisition of knowledge of a species about which they feel so passionately." Judith Zimbalist, of Chatham Alpacas in eastern New York, regularly gives to the Alpaca Research Gift Fund. Ann and Kevin Tarsagian, of Glen Ridge Farm in Portsmouth, R.I., donated equipment to test antibody transfer failure in crias. And Lou Eustance, of French Hollow Alpacas in Cambridge, N.Y., provided fencing for a safe outdoor environment.

"There is very little research done on alpacas compared to other livestock, and we appreciate Dr. Bedenice's commitment to our animals," says Steve McCarthy. "Her unbelievable dedication and responsiveness endear her to us alpaca owners."



The new Agnes Varis Campus Center Auditorium, which opened in March, gives the veterinary community a place to host campus-wide meetings, national and international professional conferences and community hearings.

came through with 139 gifts and pledges, most of them less than \$1,000. Alumni formed the largest donor contingent (87), and 25 were first-time donors.

Through the Take a Seat Campaign (www.tufts.edu/vet/giving/opportunities/take_a_seat.html), many donated a minimum of \$1,000 to name one or more auditorium seats in honor of a person, their graduating class or a pet.

Benefactor Agnes Varis, H03, a Tufts University trustee, named seats for family members, including her cats, Mishi, Kallee, Zeus and Kiki. Biomedical sciences faculty and staff pooled resources to name several seats in memory of Joanne Melesky, who had worked in the department. Mayer Administration Building staff also banded together to name a seat.

Tania Kozikowski, V04, and Jane (Remeika) Gardiner, V04, used Yahoo and Facebook to mobilize 12 of their 80 classmates to fund a seat in honor of the late director of the Tufts Ambulatory Service, Howard Levine. “We all appreciated our education at Tufts, but saw things that were lacking, including a better lecture hall,” said Kozikowski, an associate veterinarian at Alamo Pintado Equine in Los Olivos, Calif. “Together we hoped to play a small part in changing that.”

—LESLIE LIMON

Mission Accomplished

A FOUNDATION THAT CHOSE TO remain anonymous could have simply made a gift for the new Agnes Varis Campus Center. Instead, it leveraged its assets to light a fire in the Cummings School community: an all-or-nothing challenge to match a \$250,000 grant for the auditorium by the end of December 2008. The \$500,000

would go toward the \$1.5 million needed to construct the new 173-seat auditorium, which opened in March and is outfitted with state-of-the-art acoustics, lighting and audio-visual systems.

It would have been a stiff challenge, even in the best of times. Nonetheless, it sparked an outpouring of generosity among alumni, faculty, staff, parents and others, who

SUPPORT FOR SHELTER MEDICINE

The Cummings School’s emerging program in shelter medicine has received a boost with a trio of new gifts. The Van Sloun Foundation has donated \$8,000; TriMix Foundation followed up its initial gift of \$50,000 with another \$65,000; and the Bernice Barbour Foundation committed \$150,000 over the next three years.

The development of the shelter medicine program coincides with a national spike in animal surrender and abandonment as well as longer shelter stays due to economic hardship. This spring, one Cummings School student will complete a rotation at the Worcester Animal Rescue League; three others are working on shelter research projects at the Animal Rescue Leagues of Worcester and Boston and in Nepal.

Eventually, the Cummings School plans to offer a certificate program in shelter medicine.