A thins watches from a vast snowy field as I drive up a gravel road to Dr. Rae Gandolf’s office. Welcome to “The Wilds,” a 10,000-acre nature conservancy, an exotic wildlife preserve, and an educational center, all tucked away in the no-cellular-service heartland of Ohio. It is also a research facility where Dr. A. Rae Gandolf and her team conduct an investigation: “Addressing the Need for Oral Antibiotic Treatment in Camelids,” funded by the Alpaca Research Foundation.

Today, the only way of getting antibiotics into an alpaca is by puncturing the skin — often by repeated injections administered by a stressed owner. Giving antibiotics by mouth until this point in time has been useless, because the alpaca’s multiple stomach compartments dilute the drug so much that the medication never gets into the bloodstream to kill the bacteria.

A newer antibiotic, enrofloxacin, has shown promise as an oral alternative in other ruminants such as sheep and cows. But camels are different from other ruminants, and information specific to alpacas is important. Can the new drug be absorbed orally and is it safe for alpacas? That is what Dr. Gandolf’s investigation is all about.

Prior to my arrival, an Internet search gave up little background information on Dr. Gandolf, though it did turn up some competitive times in a couple of triathlons for a “Rae Gandolf” that can’t be the same person as A. Rae Gandolf, D.V.M., can it? Can be. It is. A very young, energetic woman with a bright, genuine smile greets me in an office/lab building surrounded by elands and gorals.

Rebecca Meluch (RM): “How did you get into alpacas?”

Rae Gandolf (RG): “Back in veterinary school, I had David Anderson as one of my teachers. He is in the forefront of alpaca medicine and he’s done a lot of research in that line, so I had more exposure than a lot of other veterinary students do.”

RM: “David Anderson? That means you went to Ohio State.”

RG: “Yes, I received my veterinary degree from OSU after attending the University of Kentucky. I did my externship here at The Wilds.”

RM: “So are you from around here?”

RG: “Actually, I’m from Connecticut!”

An adventurous soul, Rae spent two months last summer in Uganda assisting with a research project which involved climbing trees to get samples from fish eagles. And, before that, she spent a three-month stint in Thailand, volunteering with a wildlife conservancy.

Recently, Rae lives here in the Wilds in one of the houses on the vast property. This is an amazing place, and you must visit at www.thewilds.org, if not in person. Only don’t look for the alpacas. The six female subjects of this study are from Ohio State’s herd, and they will go home when the project is done all done.

RG: “I got interested in oral antibiotics because of all the ruminants we have here at The Wilds. We need an antibiotic we can use orally because our animals are not tractable at all. In looking for ruminant models that would be easy to use in a pharmacokinetic study, I found that alpaca owners and veterinarians also have a need for more antibiotic options.”

This is the classic win-win situation: alpaca owners get information specific to alpacas, and the data may save Rae from wresting a simian-horned oryx or a half-ton eland, not to mention those little gorals out front with the dagger horns.

The study entails giving doses of enrofloxacin to six alpacas — two intravenously, two orally, and two subcutaneously. Blood is then drawn for a comparative analysis of the amount of medication in the animals’ bloodstream. That procedure repeats two more times, with the alpacas rotating roles, until each alpaca has received the drug by each dose route.

RM: “Why use intravenous administration for the test when we alpaca owners shoot our alpacas subcutaneously?”

Rae explains that intravenous administration sets the bar for the best possible absorption of the medicine. It defines the 100 percent against which all other levels can be measured. From that, a therapeutic dose of oral medication can be calculated.

RM: “Where are we in the study now?”

RG: “We just finished collecting all the samples last week. We don’t have the results back yet.”

RM: “So... the plasmas in the mail?”

RG: “Exactly. The blood samples have gone to North Carolina State University where Dr. Mark Papich performs the comparative analysis using high performance liquid chromatography. We’re keeping the alpacas on a day-to-day dosing schedule for any unforeseen effects, because the bacterial flora in the rumen is so important in camels.”

RM: “Why is there so little information on camels?”

RG: “Enrofloxacin is a relatively new drug. Ten or twelve years ago, people did look at giving ruminants antibiotics orally, but it wasn’t absorbed and they sort of gave up on it. The preliminary results back from this trial are very promising.”

RM: “Do I understand that it actually works better with food than stuffed down their throats? Is that too good to be true or real?”

RG: “We can only speculate why that’s happening. Having the food component may activate the rumen more to stimulate digestion and absorption processes. It needs more study.”

Dr. Gandolf used the force-feeding method for the initial phase of the study only because she needed to make sure the alpacas consumed a specific amount of the drug in a timely fashion. In puppies, the food can prevent the drug from being absorbed.
RM: “Is this something we need to worry about with pregnant alpacas?”
RG: “Enrofloxacin does readily cross the placenta and also into the milk. Use of enrofloxacin in pregnant alpacas would therefore be undertaken with caution because potential side effects to crias are not known. Implications from studies in other species look good so far, but there just isn’t enough information to say for sure.”
Sounds like a research project is in order.

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Rebecca Meluch writes science fiction novels as R.M. Meluch, and romance novels as Josette Browning. She and husband Jim Witkowski have a fledgling alpaca ranch, the Windrushes, currently nesting within the warm and wonderful Majestic Meadows in Medina, Ohio. Her website is www.josettebrowning.com/windrush.htm.