

## **The Nuñoa Project: An International Adventure in Camelid Veterinary Medicine**

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For two weeks in December 2016, I was given the opportunity of a lifetime: to join a team of veterinary students and veterinarians in providing free veterinary care for alpaca and llama herds in the Andes Mountains of Peru. This was my first travel experience to South America, a continent, although wealthy in its cultural inheritance of Romance languages and Incan Empire traditions, sorely lacked the basic medical applications provided by modern technologies so accessible here in the United States. The trip not only provided the veterinary students with hands-on training in the fundamentals of camelid medicine, but it also exposed us to unique experiential learning within the field, such as client communication by assimilating the native language as our own, educating farmers regarding herd care and management, and navigating how to provide quality medicine in vulnerable, rural areas, where resources are infinitely more limited.

Our veterinary work in Peru consisted of physical exam basics on individual animals, as well as pregnancy diagnoses in females exposed to a “macho,” or an intact, breeding male. In our physical exams we would check the camelids’ dentition for aging and for any apparent abnormalities. We occasionally saw anomalies, such as “wry nose,” which is a congenital defect of the skull, resulting in facial deformity and intermittent episodes of nasal discharge. The animals’ skin was also evaluated, as we looked for evidence of disease, such as “sarna” (mange) and solar dermatitis. Next was body condition scoring that was evaluated by palpation of the lumbar vertebrae. Body condition scoring in all species tends to be subjective, but with hundreds of opportunities for practice, our team became a cohesively efficient unit, determining body condition scores in five seconds or less. When working with camelids that are minimally handled and reside on remote, primeval mountaintops, efficiency is crucial for the safety of the handler, the veterinarian, and the animal.

For females of the herds exposed to a “macho,” each received a pregnancy check, which involved ballottement of the abdomen (to palpate the fetus in later-term pregnancies) and trans-abdominal ultrasound (for more definitive diagnoses). My ultrasound skills improved exponentially on this trip, as decisions for “pregnant” or “not pregnant” had to be made almost instantaneously. The learning curve was steep, but it was incredibly rewarding to identify a cria’s skull and heartbeat, even though its birth was likely weeks or months away.

Peru truly pushes its visitors out of their “comfort zones.” It challenged our bodies by depriving us of oxygen, systematically walking with backpacks and supplies for several hours at a time, making physical activity at primitive locations – up to 15,000 feet above sea level – profoundly more demanding. Moreover, the consistent reminder of myriad impoverished communities – which, ironically, enriched our lives – continued to cultivate our desire to do more for these farmers and their herds. From acclimating to an elevated heart rate at rest to purchasing drinkable water on a daily basis, much concentrated adaptation was required in Peru. However, adaptation is key as a veterinarian, as our profession is, oftentimes, very unpredictable. For a veterinarian, the ability to respond to change at a moment’s notice and literally “think on one’s feet” can save an animal’s life. Throughout our two weeks in Peru, The Nuñoa Project trip encouraged me to re-evaluate my personal expectations on a multi-layered level. This trip provided each veterinary student with skills to become more well-rounded, maturely evolving, adept veterinarians, and the memories of cloud-filled valleys, toweringly majestic mountains, colorful camelids, and smiling, gracious farmers will remain with me for the rest of my life.