

## Perspectives in Veterinary Medicine

# A Veterinary Student Interviews a Veterinarian Astronaut

**Editor's Note:** As a class project, third-year Cornell DVM student, Aziza Glass, interviewed one of the only two veterinary astronauts in history.<sup>1</sup> Before coming to Cornell, Aziza graduated from one of the earliest and most historically-important public colleges in the state of Texas, Prairie View A&M University. I chose her paper because of its connection to One Health and because Aziza demonstrated that even prestigious and time-challenged veterinarians will almost always take time to talk to an interested student.

Donald F. Smith

By Aziza N. Glass (Guest Author)

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As a veterinary medical student, I appreciate comparative medicine and the promotion of animal health and well-being. As a research scientist, I appreciate the scientific method and the process of creating new knowledge. Recently, I was able to combine both of my passions by attending the National Space Biomedical Research Institute Apprenticeship at NASA's Johnson Space Center. While participating in the program, I became aware of the fact that veterinarians had been to space. One in particular was of interest to me.



*Author Aziza Glass, Cornell University DVM Candidate*

(Photo by Julie Kumble during Women's Leadership Symposium, Cornell University 2014)

Rick Linnehan graduated from The Ohio State University College of Veterinary Medicine in 1985. He entered private practice, and then completed a joint internship at the Baltimore Zoo and Johns Hopkins University in zoo medicine and comparative pathology. In 1988, he entered the US Army Veterinary Corps and was appointed the chief clinical veterinarian and Officer in Charge for the Navy's Marine Mammal Program. He completed the Army Medical Department (AMEDD) training at Fort Sam Houston. Four years later, Linnehan was accepted by the National Space and Aeronautics Administration (NASA) and began a year-long training program as an Astronaut Candidate (ASCAN) working with flight software, payload development, and flight support in preparation for future assignments as a mission specialist aboard the space shuttle. Although he is not training for missions these days, Dr. Linnehan has flown into space four times, logging 58 days and six space walks.



*Dr. Linnehan during one of his several Extra-Vehicular Activities (space walks).*  
(Photo by NASA)

Contacting an astronaut is a big deal, and being able to get on his schedule for a class assignment is practically a long shot. However, something told me to go for it, and I did. Countless emails later I finally got a response. Anxious would be the best way to describe my mindset as I called Dr. Linnehan (yes, it was on his cell). I immediately relaxed as he answered the phone and introduced himself and proceeded with small talk.

Taking a deep breath I moved forward with my first question: “What was your easiest transition from veterinarian to astronaut.”

*It's best not to categorize the transition as easy or hard. It was on a whole different level. You're being stretched to the limit, learning new things that a veterinarian would never normally have to learn. Essentially the training was massive memorization—sometimes mind numbing—training your mind to recall and operate almost automatically, something akin to “muscle memory.” You're trained to respond, immediately and operationally, to real time emergencies that literally can be life or death if not acted on correctly and with alacrity. It's a new level of learning that's in a category all to itself.*

Though Dr. Linnehan had many mentors during his veterinary career, he went through the “pressure cooker” of the astronaut corps training like everyone else, including mission specialists and pilots alike. “It’s easy to give up when things get hard. I was constantly told you couldn’t do this or that. But you have to learn not to write yourself off too quickly. Be somewhat stubborn. Stick to it. Sometimes just being the last person standing means you win.”

I told him, “My Dad says, ‘Sometimes you gotta win ugly, but it’s still a win.’” He replied, “...Tell your Dad he’s a smart man.” “Thanks, I will” I said.

Dr. Linnehan’s background as a veterinarian taught him to rapidly identify and diagnose apparent programs, follow correct procedures, and to “fix things.” He reminded me that the veterinary mindset and training prepares you by spanning multiple species, differing physiologic facets and diagnostic regimes. “Vets are already extremely well-prepared for being astronauts by how we are taught to operationally think—and take action.”

When I inquired how he has been able to use his platform to advance the field of veterinary medicine, Dr. Linnehan responded that he has not been able to do as much as he would have liked. Then he became candid, saying that part of the reason is that the veterinary medicine status quo has become refractory to change.

*We have to get away from the mindset that the practice of “traditional” veterinary medicine is bounded. Historic perceptions of what and who we are as a profession must change, and this “expansion” must start at the veterinary colleges and also with the public health sector.*

*The One Health global veterinary initiative must be given more than lip service and embraced as the next stage in the evolution of the veterinary profession as we enter the new millennium. Currently veterinarians are under-represented and under-utilized and are not in the necessary leadership roles we are best suited for—of any of the health professions—in the complex and critically-important global health forum. We, as a profession, are the ideal people to guide these conversations and enact positive public health change and quality of life benefits for all species that share the planet.*

*My goal is to find a way for veterinary schools to expand from the classical mindset and include the global One Health Initiative as a crucial part of veterinary theory, education and practice skills sets. Emerging Infectious Diseases (EIDs)/zoonoses, conservation and sustainability, agriculture/mariculture, toxicology, genomics, public health, etc.; veterinarians are better trained and possess the diagnostic armamentarium to handle these vanguard issues. We have the potential to redefine the perception and definition of what it means to be a veterinarian. We need to be at the top of the global health infrastructure pyramid to perturb how the private and public sectors perceive our value as veterinarians.*

*Being the only veterinarian in the astronaut corps, it was difficult for other more traditional astronaut recruits to understand why a veterinarian was there. For that matter, it was equally as confusing for some members of my own profession to grasp why I wanted to become an astronaut. For the most part, I had to give up my clinical life and passion for exotic/marine veterinary medicine in order to do it. But, it was important to prove what veterinarians could do it and how well prepared they are to delve into any presumable untraditional field and succeed.*

To round out the interview, as well as satisfy my own curiosity, I asked Dr. Linnehan which one animal he would most like to take with him on his next space flight, and why. "I think it would be the dolphin," he answered.

*Cetaceans evolved and live their entire lives in neutral buoyancy, and that's the closest thing on the planet in terms of emulating the microgravity environment of space. In fact, we do our Extra Vehicular Activities task training in a giant water pool called the Neutral Buoyancy Laboratory to simulate the microgravity of space with all its difficulties in adapting and working in a space suit outside the space shuttle or International Space Station. It would be interesting to see how quickly dolphins adapt to the space environment as compared to land mammals – us. Actually, a great sci-fi novel, "Startide Rising" by David Brin, posed the same question, and it's stuck with me ever since. Yeah, I'd take a dolphin.*

After he answered my last question, I grinned from ear to ear. This had been awesome. I'm most grateful for Dr. Linnehan's candidness and honesty. I thanked him for the interview, and he congratulated me on making it to my third year of vet school. His advice? "Enjoy it."

Then he left me with this tidbit. "You know, I always wanted to go to Cornell, but I didn't get in. I grew up in the New England area, and we had only one New Hampshire contract available. So I'm sort of jealous right now."

Yeah, this had to be the highlight of my week.

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<sup>1</sup> Smith, Donald F. Vets in Space: Exploring the Frontiers of Space. *Perspectives in Veterinary Medicine*. October 22, 2013.

**KEYWORDS:**

One Health  
Rick Linnehan  
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Veterinary Astronaut

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Topic:

One Health

Leading Question:

What veterinarian has been in space multiple times?

META-SUMMARY:

A veterinarian astronaut contemplates the role of veterinary medicine in promoting One Health.

ABOUT THE AUTHOR:

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