



# NATIONAL VETERINARY LABORATORY

P.O. Box 239, 1Tice Road  
Franklin Lakes, NJ 07417  
877-NVL-LABS (877-685-5227)

[www.natvetlab.com](http://www.natvetlab.com)

## NEWSLETTER

### One Medicine, One Health and Us

Evelyn E. Zuckerman, Editor

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#### In This Issue:

The Summer, 2010 issue of the NVL Newsletter will review our participation in "One Medicine," scientific meetings and non-scientific activities during the past several years. Veterinary practitioners should take an active participation in "One Medicine" especially relative to *Bartonella* zoonoses. Dr. Hardy, Director of the National Veterinary Laboratory, Inc., will summarize his career in One Medicine.

#### One Medicine:

William D. Hardy, Jr., V.M.D.

The concept of "one Medicine" was embraced by the medical and veterinary professions in the 19<sup>th</sup> century but the collaborative efforts diminished significantly by the 20<sup>th</sup> century. The increase in emerging zoonotic diseases in the 21<sup>st</sup> century makes it necessary to renew efforts to rekindle the cooperative "one medicine" in order to address this challenge.<sup>1</sup> About 60% of emerging infectious diseases are of bacterial origin and result from zoonoses.<sup>2</sup> The German physician and pathologist Rudolf Virchow (1821-1902) is considered the father of comparative medicine and veterinary pathology and he coined the term "zoonosis." By the mid 20<sup>th</sup> century the veterinarian James H. Steele became a leader in veterinary public health, epidemiology of zoonotic diseases, and helped to re-promote "One Medicine" while serving in the WHO and CDC.<sup>3</sup> At 97 years young, Dr. Steele is still actively writing and promoting veterinary epidemiology and public health. There is now a renewed effort to reestablish an effective "One Medicine" program throughout the world. One such effort is the One Medicine, One Health Initiative: [www.onehealthinitiative.com](http://www.onehealthinitiative.com).

#### One Medicine, One Health Initiative:

This Initiative is trying to unite veterinary and human medicine and their stated aims are presented verbatim: "The One Health Initiative, a movement to forge co-equal, all inclusive collaborations between physicians, veterinarians, and other scientific-health related disciplines, has been endorsed by various major medical organizations and health agencies, including the American Veterinary Medical Association, the American Medical Association, the American Society of Tropical Medicine and Hygiene, the American Society for Microbiology and the Centers for Disease Control and Prevention (CDC). Additionally, more than 500 prominent

scientists, physicians and veterinarians worldwide have endorsed the initiative.

#### Mission Statement:

Recognizing that human and animal health and mental health (via the human-animal bond phenomenon) are inextricably linked, One Health seeks to promote, improve, and defend the health and well-being of all species by enhancing cooperation and collaboration between physicians, veterinarians, and other scientific health professionals and by promoting strengths in leadership and management to achieve these goals.

#### One Health shall be achieved through:

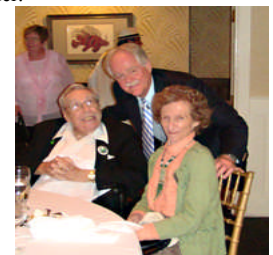
1. Joint educational efforts between human medical, veterinary medical schools, and schools of public health;
2. Joint communication efforts in journals, at conferences, and via allied health networks;
3. Joint efforts in clinical care through the assessment, treatment and prevention of cross-species disease transmission;
4. Joint cross-species disease surveillance and control efforts in public health;
5. Joint efforts in better understanding of cross-species disease transmission through comparative medicine research;
6. Joint efforts in the development and evaluation of new diagnostic methods, medicines and vaccines for the prevention and control of diseases across species and;
7. Joint efforts to inform and educate political leaders and the public sector through accurate media publications."

My involvement with One Medicine began at the University of Pennsylvania, School of Veterinary Medicine where, as students, we were indoctrinated in the One Medicine concept from the first day of classes. From there I spent, along with Evelyn Zuckerman, 25 years at the Memorial Sloan Kettering Cancer Center in NYC studying veterinary and human cancer- especially retroviruses of cats (FeLV, FeSV and FIV) and humans (HIV and HTLV).<sup>4</sup> There we were the first to find the contagious spread of any retrovirus, FeLV among cats.<sup>5</sup> Ms Zuckerman isolated a feline sarcoma virus (FeSV) that possessed the *v-kit* oncogene.<sup>6</sup> The normal cellular homolog of the viral oncogene, *c-kit*, is expressed on many animal and human cancers and is a normal cellular growth regulator for many cell types. We also found that AZT was effective in a retrovirus infected animal, FeLV infected cats, which then expedited HIV human clinical trials. The next 10 years were spent at

Albert Einstein College of Medicine, Bronx Lebanon Hospital, in the Bronx, where I was Professor of Medicine and the director of the Research Laboratory at the Hospital. We studied the epidemiology of HIV in the Bronx and began to observe HIV-infected patients in the hospital develop life-threatening infection with the newly discovered bacteria, *Bartonella*. Thus the one medicine approach was necessary to combat this zoonotic infection coming from pet cats.<sup>7</sup> In this regard, human *Bartonella* diseases have been the animal model for feline and canine *Bartonella* diseases.

**American Veterinary Epidemiology Society (AVES) awards Dr. Hardy an Honorary Diploma of the Society at their 46<sup>th</sup> annual meeting during the 147<sup>th</sup> AVMA convention in Atlanta, GA, August 3, 2010.**

The AVES has more than 200 members and is active in promoting veterinary public health and One Medicine. I was among 8 recipients of 2010 honorary diplomas of the society. The diploma read: "To William Hardy for his Distinguished Service and Contribution to the progress of public health. His effort and vision, compassion and understanding, desire and energy, have advanced Veterinary Public Health and research. His counsel and advice have been a great value to his country." I am most honored to have been awarded the Diploma from such an outstanding group of scientists. At the meeting Dr. James H. Steele, co-founder of the Society, gave a history of veterinary public health. I highly recommend the new book about Dr. Steele's life in veterinary public health: *One Man, One Medicine, One Health: The James H. Steele Story*, by Craig Nash Carter with Cynthia Gregg Hoobler.



Dr. James H. Steele, Mrs. Brigitte Steele and Dr. Hardy at the AVES awards dinner.



Dr. Hardy thanking the AVES for his Honorary Diploma given by AVES President Dr. G. Beran.

## Scientific Meetings:

### International *Bartonella* Meetings.

Evelyn Zuckerman and I have attended all 6 International *Bartonella* Meetings and have given scientific presentations at all but the first meeting. Although our original observation that *Bartonella* cause common inflammatory diseases in many tissues and organs of pet cats was initially met with skepticism, most of the skeptics now agree with us and have observed similar inflammatory diseases in cats.

### 8<sup>th</sup> International Feline Retrovirus Research Symposium, Washington, DC, October 8-11, 2006.

I presented the meeting's Banquet Keynote lecture entitled: Lessons from Time Spent in Cat Houses: An Historical Overview of the Feline Leukemia Virus and Other Pathogens. This was a wonderful gathering of many of the researchers in the feline retrovirus field.



Dr. Hardy (left) and Dr. Oswald Jarrett, University of Glasgow. Top circa 1978 on Dr. Jarrett's sailboat in the Clyde river in Scotland, bottom- same duo in 2006 with less hair!



Dr. Steve O'Brien, meeting organizer, "forcing" his new book entitled: *Tears of the Cheetah* (a must read) on Dr. Hardy in lieu of an honorarium!

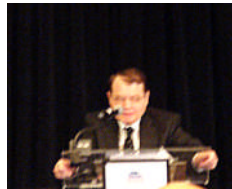
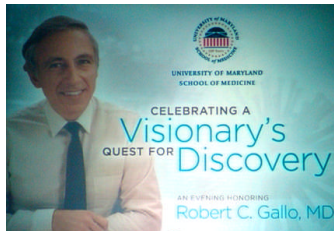


The "old" FeLV gang: (left to right) Dr. Oswald Jarrett, Evelyn Zuckerman, Dr. Hardy, Dr. Steve O'Brien, Dr. Edward Hoover, and Dr. Larry Mathes.

### An Evening Honoring Robert C. Gallo: Celebrating a Visionary's Quest for Discovery, May 9, 2009.

Dr. Gallo was the Founder and is the Director of the Institute of Human Virology at the University of Maryland. The University celebrated Dr.

Gallo's 25 years of One Medicine research in May of 2009. Since the early 1970's, Dr. Gallo organized yearly meetings of animal retrovirus researchers (there were no human retroviruses known at the time of his first 5 meetings) and subsequently animal and human retrovirus researchers. I was fortunate to have attended the first 12 "Gallo" meetings. Bob truly was a One Medicine pioneer in the retrovirus field and eventually was credited with co-discovery of HIV, the AIDS virus, which has been devastating the world for 25 years. Although he was inappropriately omitted from the Nobel Prize for his part in this discovery, he continues to organize yearly important international retrovirus meetings. Our laboratory collaborated with Dr. Gallo's laboratory, as did Dr. Max Essex, a veterinarian from Harvard University. I was honored to have been invited to this well deserved celebration of Dr. Gallo's monumental contributions to animal and human health. Dr. Gallo's lab developed the first blood test for the AIDS virus which was similar to the test we developed, 12 years earlier, for detection of FeLV in cats.<sup>5</sup> Almost all of the major international retrovirologists and NIH researchers were there to celebrate Dr. Gallo.



Dr. Luc Montagnier, Nobel Laureate for co-discovery of HIV, the AIDS virus, gave tribute to his friend and competitor.



Dr. Hardy congratulates Dr. Gallo on his many scientific accomplishments.

### An Ill Wind Brings Good Friends

The Eyjafjallajökull (AYA-feeyapla-yurkul) Iceland volcano began erupting on March 20, 2010 and the wind direction carried the ash toward Europe rather than blowing it towards the Arctic and Greenland. On April 13th a new crater opened with increased activity, this time emitting large quantities of ash rising to high altitudes. As the invigorated eruption continued, the plume of fine ash was carried westerly to the British Isles, Scandinavia and eventually all over Europe, causing serious interruptions in air traffic. That ill wind fortunately brought the Oswald Jarrett family (wife Angela (nee Pacitti-

herself a veterinarian and FeLV researcher) and Jonathan their 17 year old son who is off to college to become an astrophysicist, for a 5 day unplanned visit at my home while they awaited the ash cloud to clear over Scotland.



The Eyjafjallajökull volcano blows its top.

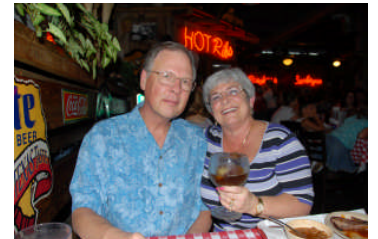
Os and I enjoyed catching up on each other's research and sharing an occasional single malt scotch. After downing a few, we even spoke of possibly co-authoring a book of our experiences in feline retrovirus research.



The Jarretts in my kitchen.

### It's Bigger, and Hotter, in Texas!

Dr. Harold Krug, Campbell Village Veterinary Clinic, Dallas, Texas arranged for me to present seminars to the Collins County Texas VMA and the East Texas VMA this July and August. Dr. Krug has made very interesting *Bartonella* behavioral observations in Texas dogs and he presented his observations at the end of my seminars. The Krugs, Julie and Harold, showed Ms. Zuckerman and me what a real Texas barbeque was all about in Ft. Worth.



Harold and Julie Krug- in a Texas barbeque

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