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the veterinary page
NEWS FROM THE UNIVERSITY OF FLORIDA • COLLEGE OF VETERINARY MEDICINE

Co-discoverer of HIV virus encourages UF's collaboration with other nations to fight spread of HIV/AIDS

BY CZERNE REID

Jay Levy, M.D., one of the discoverers of HIV, the virus that causes AIDS, has called on the University of Florida to partner with Caribbean and Latin American nations in the fight to control the spread of HIV/AIDS.

The scientific expertise at the university and physical proximity to these regions lend themselves to such collaboration and influence.

The Caribbean has the second highest rate — after sub-Saharan Africa — of people living with HIV/AIDS. Compared with other regions, the area's total population is low, but a greater proportion of its citizens are infected with HIV: One in 100 adults has the disease, a rate that equates to about 230,000 people. In Latin America, one in 200 adults is infected, or about 1.7 million people.

Levy, whose group was also the first to demonstrate that condoms reduce HIV transmission, also talked about his latest research on a white blood cell product that can block HIV replication.

Levy spoke Jan. 28 at the second annual meeting of the fledgling Florida Center for AIDS Research, which is based at UF and led by Maureen Goodenow, Ph.D., the Stephany W. Holloway university chair for AIDS research at UF's College of Medicine.

He outlined the state of the global pandemic, and highlighted current areas of research such as trials in which circumcision resulted in reduced HIV transmission in certain populations. Shortcomings in study design have hampered other research, such as the use of diaphragms.

Thirty-three million people around the world are infected with HIV, and 2.7 million are newly infected each year. In the United States, 1.1 million people are living with the disease, and more than 56,000 are newly infected each year, according to Kaiser Family Foundation data.

"This is becoming and has now become the worst epidemic to hit humankind," Levy said.

HIV is the fourth leading cause of death globally, and the leading cause of infectious disease deaths.

Levy's research involves trying to determine why some people who are infected with HIV survive for very long periods without progressing to an AIDS diagnosis. Levy in 1986 discovered that a certain type of immune system cell called $CD8^+$ cells produced a protein he called a "CD8-cell antiviral factor" that suppresses viral activity. That work has spurred research efforts by others to try to determine what the factor is made of and how it works. The research could fuel the development of new anti-viral agents.

"I think it's going to be very important for HIV, but also for other chronic viruses such as hepatitis C," said virologist James Maruniak, Ph.D., who is an associate professor in UF's entomology and nematology department.

Dr. Jay A. Levy spoke at the University of Florida Health Science Center as part of the University of Florida Distinguished Professor Lecture Series and the 2nd Annual UF Center for AIDS Research Symposium. Levy is director of the Laboratory for Tumor and AIDS Virus Research at the University of California/San Francisco School of Medicine and a renowned AIDS researcher. His lecture, "The Global Threat of HIV/AIDS: How Science Faces the Challenge," was hosted by the College of Veterinary Medicine's Department of Infectious Diseases and Pathology, The Emerging Pathogens Institute and The Florida Center for AIDS Research and Continuing Medical Education. (Photo by William Castleman)

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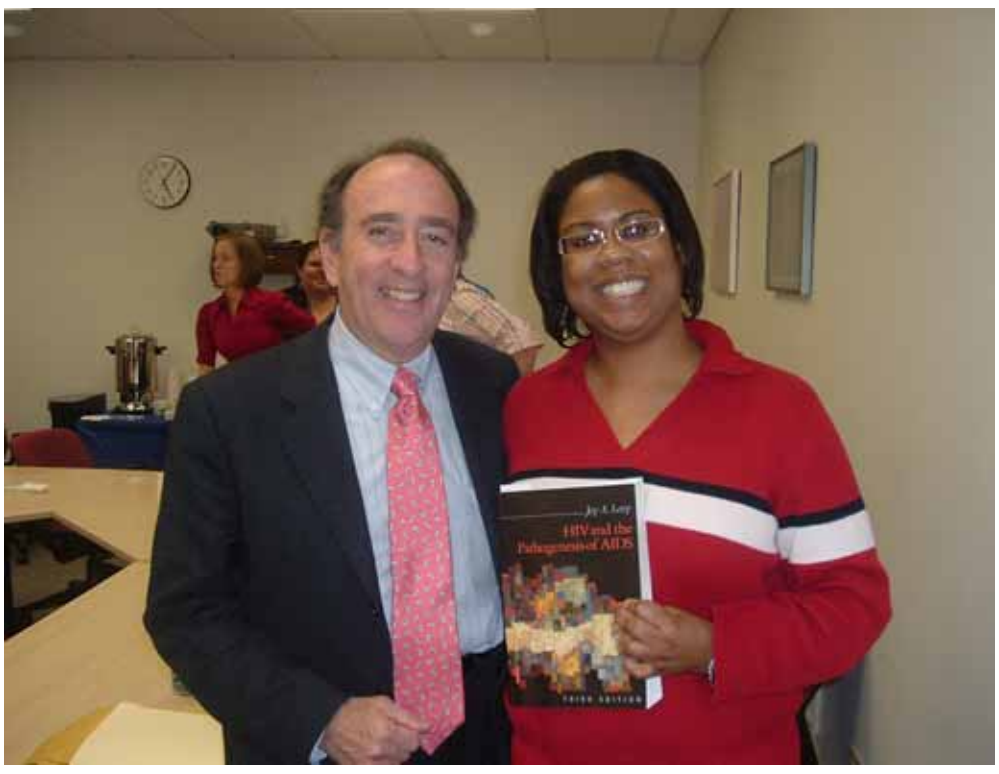
>
> — *Dr. John Dame, chairman*
> *CVM Department of Infectious Diseases and Pathology*

Levy is collaborating with Janet Yamamoto, Ph.D., co-discoverer of the feline AIDS virus, discoverer of the feline AIDS vaccine, and a professor in the department of infectious disease and pathology in UF's College of Veterinary Medicine.

Advances in AIDS research at the University of Florida could, in time, have a direct impact on HIV infection rates in nearby countries, faculty scientists say.

"We're positioned geographically, and if we position ourselves professionally to pursue that, we could have an impact on the epidemic in a part of the world we have access to," said molecular biologist John Dame, Ph.D., chairman of the department of infectious diseases and pathology in the College of Veterinary Medicine.



Dr. Jay Levy, left, poses with Tameka Phillips, a Ph.D. student studying small animal reproduction. Phillips holds a copy of Levy's book, "HIV and the Pathogenesis of AIDS", which she won in a raffle during the meeting he held at the college with CVM graduate students and postdoctoral fellows. (Photo courtesy of Tameka Phillips)

UNIVERSITY of FLORIDA

Utah dog owner shares gratitude for help offered through UF pacemaker study

Dr. Amara Estrada, left, with Gary and Susan Anthon and Scooby outside of the small animal hospital on Jan. 22.

BY GARY ANTHON

Our adventure started in the winter of 2007. Our family dog, Scooby, a black Lab, started having fainting spells. One night he was up in the kids' bedroom and we heard a big thump. Scooby had just fallen over.

He got right back up, so we didn't think much of it. We even laughed about it, calling him clumsy. Over time, however, the fainting spells got worse. Scooby started losing weight and would faint a dozen times a day. He would be standing there and look up at us with sad eyes, and just fall over! Then he would jump back up,thinking he had done something wrong. It was just heartbreaking to see him go through this and waste away.

We took him to the vet and they ran some tests. When they came to us with the diagnosis, we were devastated. Scooby had a heart condition called a third degree heart blockage and he needed a pacemaker. If he didn't get one, we were told he would die within weeks.

We couldn't even imagine a dog getting a pacemaker. We didn't even think they put pacemakers in dogs. Our family was told that pacemakers were typically implanted at veterinary teaching hospitals, and so we hit the Internet. We found a few vet schools relatively near our home in Utah, including one in Colorado and one in California. They said the cost would be in the thousands of dollars, and we would have to take Scooby there. Spending thousands of dollars on a pet was out of the question for us, but we loved Scooby so much, we couldn't give up.

So we broadened our Internet search to include third degree heart blockage and pacemakers and that's where we found Dr. Amara Estrada at the University of Florida. Dr. Estrada was conducting a clinical trial putting pacemakers in dogs to correct third degree heart blockage. What could be more perfect! We didn't want to tell the kids until we knew we had found a solution but we now had some hope. We sent Dr. Estrada an e-mail and she immediately wrote back that she was interested in helping Scooby but there was an obvious problem: she was in Florida and we were 2,000 miles away. All of the other dogs in the program were local, but she was willing to try. Now that we know Dr. Estrada, we should not have been surprised. Her love for animals and willingness to try to cure them seems boundless. She was able to get permission from the school to let Scooby into the program. Now all we had to do was get him to Florida -- and get him home!

The challenges of having Scooby in the program were not easy. Scooby had to travel from Utah to Florida for the operation and recover for several days. The study also required him to have a three-month checkup. We were not able to stay and then return for the checkup, so Dr. Estrada asked for volunteers to dog-sit Scooby for three months! On March 27, 2007, Scooby received his pacemaker. He was saved! Ultimately, Dr. Estrada wound up taking Scooby in herself most of the time. We could not believe how dedicated and giving she and her team have been throughout this ordeal.

Scooby returned home to Utah that June and he was cured. It was as if he never had a problem at all. He was healthy and full of energy; he was completely back to normal. We cannot imagine what that spring would have been like watching Scooby die. Instead, thanks to Dr. Estrada and the team of doctors, technicians and students Scooby is now running around, playing with the kids and his new "brother" — a cockapoo named Bodee.

In your life you hope to meet extraordinary people like Amara Estrada -- people who are gifted at what they do and are willing to sacrifice for others, even total strangers. Dr. Estrada saved our dog's life.

Some might say that Scooby is just a dog, but he is part of our family. Having to sit by and watch him die would have been devastating. But, a potentially devastating experience turned into a great experience. We got to meet these amazing people in Gainesville: Dr. Estrada , her colleague and fellow cardiologist Dr. Herbert Maisenbacher, veterinary technician Melanie Powell (Scooby's best friend) and many others at the UF College of Veterinary Medicine. We now consider Amara our friend and we could never repay her for what she has done for us.

Editor's Note: Gary Anthon, Scooby's owner, shared his personal write-up on Scooby's experience with the Veterinary Page. We thought our readers would find it interesting and are including it in his own words.

Cardiology docs send Scooby home for last time

Scooby, a black Lab from Utah who received a pacemaker two years ago at UF as part of a research study, returned home for good in mid-January after UF veterinary cardiologists conducted a final check-up and gave him a clean bill of health.

"We looked at the function of the pacemaker, how much lifespan the battery had left, how his heart was functioning and how he was doing overall," said Dr. Amara Estrada, cardiology service chief for UF's Veterinary Medical Center. "Scooby looks great. His pacemaker is functioning well and he has gained too much weight!"

In the future, Scooby will continue to need rechecks once a year to ensure that everything is still working correctly "and to keep tabs on his battery and whether it needs to be replaced," Estrada said.

The most recent check-up at UF revealed that Scooby's pacemaker has six to seven years of life remaining so it is not likely replacement will be necessary, Estrada said, adding that she hoped to arrange for a Medtronic representative to visit Scooby's home veterinarian's practice to perform the necessary monitoring, now that echocardiograms are no longer required.

Medtronic is the company that sponsored the UF pacemaker study, which enabled Scooby's treatment to be covered as part of the research project.

Dr. Herb Maisenbacher, another cardiology clinician who assisted with Scooby's case, is shown with Dr. Amara Estrada and Scooby on the day of Scooby's final discharge from the UF CVM.

UF's equine intensive care unit saves lives of critically ill foals

Dr. Amanda House comes face to face with a foal in the Equine Neonatal Intensive Care Unit last year.

When Ocala resident Irene Bryan's Appaloosa mare, Skippa Secret, gave birth to a premature foal recently, both mother and baby needed immediate medical care. Thanks to veterinarians at the University of Florida's Hofmann Neonatal Intensive Care Unit, both horses survived.

"Our personal veterinarian, Dr. Andy Bennett, responded to my call in the middle of the night," Bryan said. "Based on what he saw after coming out and performing X-rays on site, he recommended that we get both horses to the foal unit at UF as soon as possible."

When Bryan arrived at UF's large animal hospital, Bryan said veterinary emergency team members were waiting for them outside the facility with a gurney.

"I was immediately impressed," she said. "The overall experience was very satisfying."

The foal was treated for eight days with antimicrobials and supportive care for prematurity and sepsis. In addition, Skippa Secret was successfully treated for a retained placenta. UF veterinarians continue to monitor the pair's progress, although both animals are successfully recuperating at home.

"I was immediately impressed. The overall experience was very satisfying."

— Irene Bryan, owner of Skippa Secret

Meanwhile, Bryan's 9-year-old granddaughter, who witnessed much of the horses' ordeal, has decided she wants to become a veterinarian.

"The foal was a gift to my granddaughter so that she could show her in halter competition through 4-H," Bryan said. "She's now spending a lot of time with the foal and hopes to learn more about veterinary medicine because of this experience."

UF's neonatal intensive care unit, commonly referred to as the "foal unit," was established in the early 1980s and was the result of a unique partnership between veterinary specialists and human neonatologists at the UF Health Science Center. Neonatology research at UF has been funded by the Morris Animal Foundation and Florida's Pari-Mutuel Trust Fund as well as by the Florida Thoroughbred Breeders & Owners Association.

The state-of-the-art facility is staffed by board-certified specialists who can provide immediate medical attention and handle any level of care quickly. The foal unit is Florida's only equine neonatal ICU that provides treatment by board-certified internists round-the clock for critically ill foals and their dams, 365 days a year.

"We've got the crash cart ready to go," said Dana Zimmel, D.V.M., a board-certified internist specializing in equine medicine and an assistant professor of large animal medicine at UF.

Most foals treated at UF's foal unit are born prematurely or are under a month old. Among the most common ailments treated at the unit are bacterial infections, which can produce clinical signs within the first 24 hours after birth or the first month of life.

The vast majority of cases seen at UF's foal unit are considered emergencies.

"Primarily, we see foals with sepsis, or bacterial infections in their bloodstream; foals who have diarrhea or foals who have problems because they suffer from hypoxic-ischemic encephalopathy, or a lack of oxygen around the time of birth," Zimmel said. "Those foals, known as dummy foals, appear normal at first and then within the first 48 hours of life they lose the ability to nurse. They also lose their affinity for the mare and often progress to not being able to stand and even experience seizures."

Many foals who have been treated for "dummy foal syndrome" have gone on to become outstanding athletes, Zimmel said. Strike the Gold, the 1991 Kentucky Derby winner, is just one example.

Thoroughbred breeding season takes place between Jan. 1 and June 30, but occasionally foals will be admitted to UF in the fall months, Zimmel said. The unit will accept patients from referring veterinarians as well as from individual clients who would like to bring their foals directly to UF's large animal hospital.

Anyone seeking more information about the foal unit should call the large animal hospital front desk at 352-392-2229.

Discovery highlight

Development of neuropathic pain in spinal cord injury patients

A recent study published in the Journal of Neurotrauma by Dr. Rick Johnson, a professor in the UF College of Veterinary Medicine's department of physiological sciences, shows that a type of neuropathic pain does not develop in male rats with a complete spinal cord injury. The paper by Johnson and colleagues* found that "at-level" neuropathic pain — felt at and just above the level of spinal injury — was absent in animals whose spinal cords were completely severed, but did develop in most animals when the spinal cord was incompletely damaged.

Up to 85 percent of spinal cord injury patients experience pain. Of those, 40 percent experience pain to stimuli that normally is not painful, such as light touch — like the stroking of a pet, for example. Because it produces extreme discomfort, treatment of this condition, called allodynia, is given a high priority by spinal cord-injured humans.

Johnson's work suggests that the undamaged neurons — "wires" that send information, such as touch and pain, from the body to the brain — with incomplete spinal cord injury are a critical factor in the development of "at-level" neuropathic pain following spinal cord injury. Finding the underlying cause for neuropathic pain is critical to finding new therapeutic regimens directed at improving the quality of life in those with spinal injury.

*(Hubscher, C.H., Kaddumi, E.G. and Johnson, R.D., 2008: Segmental Neuropathic Pain Does Not Develop In Male Rats With Complete Spinal Cord Transections. Journal of Neurotrauma 25:1241-1245)

Dr. Rick Johnson

Freeman named interim chair of LACS, chief of staff of large animal hospital

Dr. David Freeman, an equine surgeon and professor in the University of Florida College of Veterinary Medicine, has been named interim chairman of the college's department of large animal clinical sciences.

Freeman also will serve as chief of staff of the Alec P. and Louise H. Courtelis Equine Hospital, which has one of the largest equine caseloads of all similar referral teaching hospitals in the U.S.

He has been a member of UF's veterinary faculty since 2004. His research interests include the pathophysiology and treatment of diseases that cause colic in horses, with special interest on ischemic diseases of the small and large animal intestines.

He also serves as director of the Island Whirl Equine Colic Laboratory and will continue in that role after he assumes his new appointment, which is effective March 1.

College Dean Glen Hoffsis appointed Freeman, who had served as associate department chairman, to the position after former department chairwoman Eleanor Green, D.V.M., was named dean at the College of Veterinary Medicine at Texas A & M University.

Dr. David Freeman

Freeman will oversee the teaching, research, extension and service missions of the UF veterinary college in the primary areas of equine, food animal, aquatic animal and companion animal health.