

Rabies in His Blood

*Penn Vet alum **Charles Rupprecht, V'85** has made it his life's work to eradicate rabies – nationally and internationally*

BY COREEN HAGGERTY

*As Chief of the Rabies Program at the Centers for Disease Control in Atlanta and Director of the World Health Organization Collaborating Centre for Reference & Research on Rabies, **Dr. Charles Rupprecht, V'85** oversees programs that monitor laboratory-based surveillance, diagnostics, prevention and control activities of rabies in humans, domestic animals and wildlife. Here's how he found – and pursued – his passion.*

As a youngster, Charles Rupprecht was fascinated with the creek and all the creatures it housed at his grandfather's home. That interest later encouraged his undergraduate study in ecology at Rutgers University and advanced study in zoology and biological sciences at the University of Wisconsin. Charles studied in Wisconsin until it came time to make his next life decision: Would he pursue a veterinary degree or continue his PhD work at UW?

The decision was made easier by **Nancy A. Difalco, GNU'84**, his New Jersey-based girlfriend. Charles had proposed marriage and Nancy had accepted. That meant a move to the east coast for Charles and the pursuit of his VMD.

As a Penn Vet student interested in wildlife, Charles, along with fellow students **F. Joshua Dein V'80 G'83**, **Howard Steinberg, V'84**, began the first Penn Vet Student Chapter of the American Association of Wildlife Veterinarians in 1982.

But Charles' interests were far more expansive. "I would see oddities in the windows at the Wistar Institute. One day I walked in and started talking about bats and rabies," he said. There he met virology researchers Dr. Tadeusz Wiktor, head of the rabies group, and Dr. Hilary Koprowski, director of Wistar. "They wanted someone to look at different rabies viruses found in wildlife – there was no easy way at the time to differentiate rabies and domestic/wildlife variants," said Charles. "And there I was – a naïve vet student."

With this connection to Wistar, Charles' interests merged. "Between the applied clinical focus at Penn Vet and the basic science component at Wistar, it was the perfect scenario to pursue my PhD."

The Road to Rabies

When raccoon rabies entered Pennsylvania, Charles began wildlife vaccination studies of these animals. Soon, a successful recombinant vaccine (a vaccine typically created

by using viruses, bacteria or yeast to express foreign genes) was developed; science was on a path for safe vaccines for wildlife. These vaccines were safer than traditional vaccines, which were made by inactivating or weakening actual disease organisms and injecting into a patient to stimulate the immune system against the disease.

Since those early trials, worldwide work toward rabies elimination has been Charles' lifelong drive. "I see science as a big picture – we have international responsibilities and programs in each country that can serve as examples for another," he said. The World Health Organization has supported one of the biggest efforts, working in Mexico, Peru, Chile and other Latin American countries, making the greatest impact on controlling dog rabies.

In 2006, the Global Alliance for Rabies Control was formed and in September 2007, the first World Rabies Day was held to demonstrate that wildlife rabies is controllable, human rabies is preventable and canine rabies can be eradicated.

As consultant for the Pan American Health Organization, Charles assists governments and world leaders to recognize that dog rabies can be eliminated using humane measures and new techniques. With three current pilot opportunities in the world funded through the Gates Foundation, the model now stretches into Asia and Africa — Tanzania, South Africa and the Philippines. It's this kind of collaboration that is so important to Charles.

"In the 21st century, the United States must serve as public stewards – we must rise to occasion in neighboring nations. We must help drive the One Health concept in resource-poor settings."

Charles hopes that current students rise to the One Health challenge and work to eliminate deadly infectious diseases affecting animals and humans alike, while also pursuing their own childhood curiosities – as he's been so successfully able to do in his own career. 🐾

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