







## THE “VACCINATE?” DEBATE

(which is called *zoonosis*) is leptospirosis. Explains Dr. Breitschwerdt, “Leptospirosis is transmitted through contaminated urine and contact with the bacterial organism. Unlike a lot of infectious agents, where you must have a break in your skin to become infected, leptospirosis doesn’t require that—it can actually penetrate intact skin. From a zoonotic standpoint, in the U.S. today, leptospirosis and rabies would be the two infectious agents that would be the most rational to vaccinate for, to try to keep humans from becoming infected.”

Adds Dr. Stull, “If people aren’t experiencing massive outbreaks of diseases such as leptospirosis, it can be hard for a veterinarian to convince owners of the risk to their dogs, and to themselves, and thus the need to vaccinate. That’s why we need the infrastructure to track canine diseases in the U.S.”

The decision to vaccinate, or not, should include a risk versus reward metric, says Dr. Stull. The reward is the ability to protect your dog, your family, and your community from potentially fatal diseases.

“Vaccines are the cheapest and most cost-effective way to keep your pet safe,” he says. “For instance, look at the parvovirus and leptospirosis vaccines. Both are safe and inexpensive. The risk if your unvaccinated dog were to become infected would be treatment that could cost thousands of dollars, and that may not be successful.”

Most dogs respond well to vaccines, says Dr. Stull. “Reactions can occur, but are *extremely* uncommon. A lot of ‘reaction’ talk is anecdotal. There are so many factors to consider: Are you giving one vaccine, or many, at a time? Is your dog healthy?”

If they happen at all, reactions tend to be short-term and minimal. They can include localized swelling at the injection site, low fever, and decreased appetite. More serious, but less common side effects include an allergic reaction, which can occur within minutes or hours after vaccination and can be a medical emergency.

Some adverse responses may be due to underlying health issues in a seemingly healthy dog. “For instance, if your dog has an undiagnosed, early stage disease, and has a reaction to the vaccine that results from that disease, the vaccine will be blamed,” explains Dr. Breitschwerdt. “It’s association versus causation; I’ve seen such cases at North Carolina State University. And I think a lot of the negative attitudes about vaccines are caused by association, not by causation.”

Adds Dr. Stull, “Vaccines don’t cause disease, they help prevent it. It’s like looking both ways before you cross the street. If you don’t look, it won’t guarantee getting hit by a car, but it’ll greatly increase your risk. So looking acts as a preventive. That’s exactly what vaccines do for your dog.”

### EDWARD B. BREITSCHWERDT, DVM, DACVIM (Small Animal Internal Medicine)

Dr. Breitschwerdt is professor of medicine and infectious disease, and the Melanie S. Steele Distinguished Professor of Medicine at North Carolina State University (NCSU) College of Veterinary Medicine. He is also adjunct professor of medicine at Duke University Medical Center, and a Diplomate of the American College of Veterinary Internal Medicine (ACVIM).

He directs the Intracellular Pathogens Research Laboratory in the Comparative Medicine Institute at NCSU and co-directs the Vector Borne Diseases Diagnostic Laboratory, and is the director of the NCSU-CVM Biosafety Level 3 Laboratory. A DVM graduate of the University of Georgia, he completed an internship and residency in Internal Medicine at the University of Missouri. Dr. Breitschwerdt’s clinical interests include infectious disease, immunology, and nephrology. His research group has contributed to research in the areas of animal and human bartonellosis. He is currently the principal investigator on several AKC Canine Health Foundation (CHF) grants:

- Grant 02550: The Role of Bartonella spp. Exposure and Cardiac Genetic Variation on the Clinical Expression of Arrhythmogenic Right Ventricular Cardiomyopathy in the Boxer Dog
- Grant 02519: Prevalence of Bartonella spp. Infection in Dogs with Cardiac and Splenic Hemangiosarcomas within and between Geographic Locations
- Grant 02787-E: Clinician-Scientist Fellowship

Dr. Breitschwerdt has authored numerous book chapters and proceedings, and published more than 350 manuscripts in peer-reviewed scientific journals. His long list of prestigious awards includes the AKC Canine Health Foundation Asa Mays, DVM Excellence in Canine Health Research Award.

### JASON STULL, VMD, MPVM, PhD, DACVPM

Dr. Stull is an Assistant Professor at Atlantic Veterinary College in Prince Edward Island, Canada, and Ohio State University College of Veterinary Medicine. He holds a veterinary medical degree from the University of Pennsylvania, a master’s degree in Preventive Veterinary Medicine from the University of California at Davis, and a PhD in veterinary infectious disease from the University of Guelph.

Over the past 15 years, he has been involved in controlling and preventing veterinary infectious disease. His research focuses on veterinary disease epidemiology, with an emphasis on preventing canine leptospirosis and canine Lyme disease. Dr. Stull has received several research grants from CHF:

- Grant 02128-A: Redefining the Recommendations for Prevention of Infectious Disease at Dog Shows and Other Areas Where Dogs Meet and Compete
- Grant 02380-A: Estimating Prevalence and Identifying Risk Factors for Canine Leptospirosis in North America
- Grant 02284-A: Lyme Disease in Dogs: Prevalence, Clinical Illness, and Prognosis
- and Grant 02532-A: Canine Influenza: Occurrence, Spatial and Temporal Trends and Identifying Modifiable Factors to Reduce Transmission at Events in the United States.

For more information on AKC Canine Health Foundation-funded canine health research, go to [akcchf.org/research](http://akcchf.org/research).