

# Detecting Berner Cancer with Rametrix® Molecular Urinalysis

John Robertson VMD PhD

**Monday April 28 9:00-11:00a.m. \*\*\* Dr. Robertson will present this seminar live on Zoom.**

Unfortunately, dogs get cancer. In fact, nearly 50% of dogs over middle age (5-7 years) old will either suffer from cancer or die because of cancer. In a study of cancer in Bernese Mountain Dogs, more than 58% of the dogs died from cancer (multiple types, including lymphoma and histiocytic/soft tissue sarcoma). Berner owners are well-aware of the devastating toll that cancer takes on their dogs and the people/families that own them. **We would like to change this narrative.** First, we need to understand the unique aspects of cancer in Berners, including onset, progression, and outcomes. Genomic studies, currently underway in the Berner Garde Foundation, should help pinpoint specific genomic risk factors (mutations) driving cancer initiation and progression. We also need to develop tests to detect the onset of cancer and to find more effective ways to treat cancer once it is detected.

Rametrix Technologies, Inc., a medical/veterinary medical research and development company ([www.rametrixtech.com](http://www.rametrixtech.com)), has developed a **urine-based technology (RMU)** to detect cancer in dogs (and people). The technology uses Raman spectroscopy to profile the molecular composition in urine – detecting changes associated with alterations in metabolism and inflammation associated with cancer. We published a paper (available on the website) describing cancer detection in dogs using this technology. We have been able to detect lymphoma, mast cell sarcoma, urothelial/transitional cell carcinoma, and osteosarcoma – using changes in the molecular composition of urine - with at least 90% accuracy using RMU technology. The urine-based test is simple (requires less than 10 ml of 'free-catch/voided' urine), fast (results within 30 minutes), and economical (about the same price as a standard urinalysis at the veterinarian's office). **Our goal** is to develop a readily-available technology for detecting cancer and serious health problems in Berners – with the goal of early disease detection and helping to develop effective treatments that can **alleviate suffering and save dog's lives.**

To further validate the urine-based technology (RMU) and to precisely focus it for Berners, we have proposed to conduct a **500-dog study** (250 healthy dogs, 250 dogs with cancer or other health problems, including kidney disease) in concert with and the sponsorship of the Bernese Mountain Dog Club of America (BMDCA) and Berner Garde Foundation (BGF). The study would occur over 12-18 months and collection will launch at the 2025 National Specialty.

**Dr. John Robertson** is currently a professor in Translational Biology, Medicine, and Health at Virginia Tech in the Carilion Research Institute, in Roanoke, VA, Adjunct Professor in the Department of Internal Medicine, Section of Nephrology at Wake Forest University School of Medicine in Winston-Salem, NC, President, CEO of Rametrix Technologies, Inc. in Blacksburg, VA and Managing Director of AnaVert Inc. in Blacksburg, VA.

His professional journey began in earnest with his training as a translational medical scientist (veterinarian, pathologist) and over the years included stints in pharmaceutical development, teaching veterinary pathology and oncology at Virginia Tech and eventually landing his 'dream job' as a research professor in biomedical engineering. His major interests are detection and treatment of kidney diseases and cancer, development of medical devices and tests for disease detection, improving dialysis therapy, and helping his team develop electroporation-based therapies for destruction of human and canine malignant brain tumors like glioblastoma. We are pleased that Dr Robertson agreed to teach a class about his innovative test for cancer in Berners.