



Veterinary Diagnostic  
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VDL Interim Director  
Dr. W. E. Hoffmann

#### VDL Faculty

Anatomic Pathology  
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Dr. Rick Fredrickson  
Dr. Laura Kohrt  
Dr. Carol Lichtensteiger  
Dr. Kuldeep Singh  
Dr. Matt Wallig

Clinical Pathology  
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Parasitology  
Dr. Al Paul

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# VETERINARY DIAGNOSTIC LABORATORY

Featured in this issue: Featured Faculty, Parasitology, Therapeutic Drug Monitoring-Phenobarbital

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## Director's Message

Nasal swabs from sick pigs/swine are requested. The VDL is participating in the surveillance program for classical swine fever being conducted by the National Animal Health Laboratory Network. Veterinarians submitting eligible samples will be given a \$50 credit for any additional testing conducted on the same animal. Animals for necropsy or specimens from a field necropsy are especially of value for the teaching program. Please e-mail [vlddirectoroffice@vetmed.illinois.edu](mailto:vlddirectoroffice@vetmed.illinois.edu) for additional information.

Walter E. Hoffmann, DVM, PhD, Interim Director

## Featured Faculty

Dr. Matt Wallig, professor of comparative pathology and director of the anatomic pathology residency program, joined the faculty in 1987. He received his DVM from the University of Minnesota and completed his residency training and a PhD at Colorado State University. Dr. Wallig is actively engaged in research and teaching and has served as an advisor or co-advisor for numerous students in the Department of Pathobiology and the Division of Nutritional Sciences. His major research interests are collaborative and centered around plant chemicals and nutrients that prevent cancer. As the anatomic pathology resident coordinator, he spends many hours per week at the microscope with residents as they develop the skills of evaluating biopsy specimens and providing timely diagnoses. Dr. Wallig has won numerous awards during his career, including the Outstanding Faculty Mentor Award as mentor for the Illinois Student Chapter of the American College of Veterinary Pathologists (ACVP). He recently received the prestigious ACVP Presidential Award for his outstanding service and contributions to veterinary pathology.

## Parasitology: Dr. Al Paul and Richard Clem

Increased awareness and knowledge of zoonotic diseases by our profession and clientele have emphasized the importance of fecal examinations for parasites in family pets not only to improve the health of these pets but also to prevent serious illness in family members. The parasitology laboratory utilizes the double centrifugation sugar flotation technique for parasite ova detection and identification. This method, while more time consuming and labor intensive, has been shown to reduce the likelihood of false negative results by as much as ten-fold over non-centrifugation techniques and thereby increase the likelihood of ova recovery and identification. This is a non-quantitative test conducted daily Monday through Friday at a fee of \$6. The laboratory also offers the Wisconsin Double Sugar Flotation test for quantitative ova counts at a fee of \$24. Other testing includes endo- and ectoparasite identification (\$24), acid-fast staining for *cryptosporidium* (\$18), *Giardia* (\$18), and the Baermann technique for recovery of parasitic larvae (\$18).

## Therapeutic Drug Monitoring—Phenobarbital: Dr. Walter Hoffmann

The VDL offers quantitative determination of phenobarbital and other drugs to assist the veterinarian in achieving therapeutic concentrations in animals being treated. Phenobarbital is generally the first drug of choice for treatment of seizures in dogs and cats and administered at 2.0-3.0 mg/kg PO bid. A stable concentration in blood is achieved by approximately two weeks, after which determination of the blood concentration is recommended. A blood sample taken just before administering a dose provides the trough value, which is most useful. Concentrations between 25-40 ug/ml (107-172 umol/L) are suggested as most desirable, although ranges from as low as 15 ug/ml to as high as 45 ug/ml have been suggested. If that concentration range is not met, the dose should be increased and the animal tested again in approximately two weeks and this process repeated until a desired concentration is reached. Re-evaluation is recommended at 6- to 12-month intervals to help prevent liver disease caused by excessively high phenobarbital concentrations. An increase in seizure activity between evaluations should prompt a re-evaluation of the phenobarbital concentration. Occasionally adequate control of the seizures is not achieved due to a shortened half-life of phenobarbital in the animal. Determination of the trough (before dosing) concentration and the peak concentration (four hours after dosing) of the phenobarbital can be useful in assessing this problem. A difference of greater than 25% suggests that treatment three times a day may be necessary to alleviate recurrence of the seizure activity. Analysis of phenobarbital at the VDL is conducted daily at a fee of \$22. Approximately a half ml of serum should be submitted.