Who We Are

The laboratories of the University of Miami Avian and Wildlife Laboratory are managed by members of the faculty of the Division of Comparative Pathology. Our laboratory is directed by a Diplomate of the American College of Veterinary Pathologists and has operated as part of the university for the past 30 years serving practitioners throughout the world.

The main strength of the test services is our academic base. Our pathologists can use the broad expertise of other members of the Department of Pathology as well as the clinical and basic research faculty of the university departments. Our staff includes faculty involved in basic research which broadens our proficiency in diagnostics and assists our service in meeting and understand your needs in challenging diagnostic cases.

More than 15 years ago, the division dedicated a branch of the laboratory to establish a strong avian diagnostic test array to meet the changing needs of our veterinary clients. Our staff of veterinary immunologists and pathologists have designed and implemented many new tests in avian infectious diseases. In addition, we have optimized equipment for low sample volume testing. Technical staff have been dedicated to processing of only avian and exotic samples. Our commitment to the avian service is evident in our numerous national meeting presentations and publications.

Special points of interest:

- Academic Based Service
- Active Research Program
- Quality Diagnostics
- Noted Contributor to Avian Medicine
- Proven Record of Publications and Presentations

Inside this issue:

- Aspergillosis
- Biochemical Testing for Liver Disease
- Study of Parrots with FDB
- Encephalitozoon cuniculi testing
- About Our Lab Services
- New Publication: Avian Digest
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Thanks to All of Our Collaborators!

The research program of the Division of Comparative Pathology is divided into three harmonious parts. First, we serve the university researchers using animal models. This allows us to collaborate with investigators across the campuses of the university — assisting them in pathology testing from models spanning everything from diabetes research to stem cell projects to tumor vaccination protocols. Second, we perform our own basic research. Current projects include the study of acute phase proteins in laboratory animals and the development of a mouse model of invasive aspergillosis.

Lastly, we have the good fortune to work with veterinarians across the U.S. on projects to further the field of avian and exotic medicine. As you read this Flyer you will see our collaborative work with your colleagues. Many of these projects were started with a simple idea and a phone call. Do you want to get involved? Did you always have a project you wanted to work up? Contact Dr. Carolyn Cray at 800-596-7390 or c.cray@miami.edu.
Galactomannan assay and protein electrophoresis findings in birds with confirmed aspergillosis. Collaborators: Drs. Drury Reavill, April Romagnano, Fern Van Sant, Rhoda Stevenson, Vanessa Rolfe, Chris Griffin, and Susan Clubb.

In the 1990’s, the Division of Comparative Pathology began a multiyear project to examine the application of serological test avenues to the diagnosis of aspergillosis in avian species. This project has resulted in several presentations at AAV as well as an international conference on human and animal mycology. Our work is culminating in the publication of two papers in 2009 and an additional paper under review.

In large study of over 1000 birds, we were able to define antibody reactivity, galactomannan (a major antigen of *Aspergillus*), and protein electrophoretic changes. In our galactomannan study, we found infected birds demonstrated a significant 2.6 fold higher levels than uninfected birds. In addition, infected birds had a higher incidence of abnormal beta and/or gamma fractions by EPH. In an upcoming JAMS publication, eleven cases were specifically profiled by galactomannan and EPH test results. In total, our studies have shown that galactomannan and EPH have high value in the diagnosis of aspergillosis and should be considered as possible test options in addition to traditional routine blood and radiographic testing.

Citations:
*JAMS*, in press.

Biochemical Testing and Liver Disease Collaborator: Dr. Don Harris

The goals for this study were two fold: 1) examine the association of AST/CPK levels with high bile acids levels and 2) determine if there was an association between particular values for some analytes and the presence of hepatic disease.

We examined 442 samples representing 8 species of psittacine birds for levels of AST, CPK, protein fractions (by EPH), and bile acids. We found that the often used corollary of a high AST and normal CPK concentrations as a screening test for hepatic injury or disease is not statistically supported. Secondly, in those birds with confirmed disease, elevated bile acids levels had the highest association followed by elevations in alpha 2 globulins, AST, LDH, and alpha 1 globulins. These data emphasize the sensitivity of bile acids as a test for liver disease and suggest that bile acids should be considered in a primary screen rather than as a followup test to AST and CPK chemistry results.

Citation:

Feather Damaging Behavior (FDB) in African Grey Parrots Collaborator: Dr. Susan Clubb

In association with faculty member Dr. Susan Clubb, a large group of African grey parrots with FDB was studied.

Some interesting findings:
1. T4 levels were not different between normal and FDB birds but the magnitude of TSH stimulation was lower in FDB birds.
2. FDB birds may have an increased stress response to handling as assessed by changes in the CBC.
3. FDB birds have elevated levels of alpha globulins and titers of antibody to *Aspergillus*.

Citation:
A multi-year study examining the application of an ELISA and protein electrophoresis in the diagnosis of *Encephalitozoon cuniculi* (ECUN) in rabbits was recently completed. Preliminary findings of this study were summarized at AEMV meeting and have recently been published in *AJVR*.

Antemortem diagnosis of ECUN infection is very problematic as most rabbits are found to carry antibody in the absence of disease. In those rabbits which are ill, clinical presentations are often similar to those seen with other infectious agents.

In the current study, we sampled 203 rabbits. Those rabbits with suspected infection demonstrated 1.7 higher levels of antibody than those rabbits which were clinically normal or were suffering from a non-ECUN related infection. Both ECUN suspect and abnormal but non-ECUN suspect rabbits also exhibited increased levels of gamma globulins and a lower A/G ratio. The combination of these two tests may aid in the diagnosis of ECUN in rabbits. Studies are underway to define the composition of the gamma globulin fraction and the prognostic value of EPH.

**Citation:**


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**Serological Testing for *E. cuniculi* in Rabbits**

Collaborators: Drs. Susan Kelleher and Renata Schneider

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**Our Diagnostic Services**

**Hematology:** Absolute (not estimated!) cell counts by the Unopette technique

**Chemistry:** We specialize in low volume samples; we do not dilute low volume samples beyond recommended protocols to obtain results. Specialized testing with in-house ranges for bile acids and T4.

**Protein electrophoresis:** More than 15 years of experience with avian, exotic, and wildlife species. Extensive research in this field.

**Infectious Disease:** Unique test offerings for Chlamydophilaosis, Aspergillosis, and Sarcocystosis. Panels available also for testing of rodents.

**Computer Access:** On line access to all your results via the web. Email results also available.

**Turnaround time:** Most tests completed on the day of delivery, all within 24 hours of receipt.

**Special Handling of your sample?** Sample collection questions? Just ask.

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**Announcing: The Avian Digest**

*The Avian Digest* is a free publication available since January of 2008 to all clients of the Avian and Wildlife Laboratory.

The digest provides working summaries and reviews of current publications of interest to practitioners of avian medicine. The journals include those not commonly accessible to many of the veterinary community in efforts to keep you updated on all the latest research studies that may be important to your practice and have an impact on the future of avian medicine.

Reviews include a synopsis of the study methods and results as well as a summary of implications of study findings.

If you want to receive these special issues, contact the lab.

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**Ongoing studies on the application of new serodiagnostic testing for *E. cuniculi***
Quality diagnostics with an active research program. An academic based laboratory service which provides routine and specialized test services while furthering the field of avian medicine.

**Contact Us!**

Client Services is available to serve you Monday through Friday. We can also be reached via the web.

**Phone:** (800) 596-7390
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