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RETURN SERVICE REQUESTED

We're on the web!
www.vet.uga.edu/dlab

MEET THE FACULTY



Dr. Cathy Brown

Cathy Brown received her VMD from the University of Pennsylvania in 1982, her PhD from the University of Georgia in 1990, and became board certified in Anatomic Pathology in 1992. An internationally recognized expert in veterinary renal pathology, in 2008 she received an award from the American Association for Veterinary Laboratory Diagnosticians for the manuscript "Outbreaks of renal failure associated with melamine and cyanuric acid in dogs and cats in 2004 and 2007" and was recognized at the AVDL with an Outstanding Laboratory Service Award in 2009. She is currently working on a World Small Animal Veterinary Association Renal Standardization Group to establish histological and clinical standards for veterinary renal diseases. At home, she keeps egg-laying chickens, goats, sheep, and cows. She is married to Dr. Scott Brown, Head of Small Animal Medicine and Surgery at the CVM, and they are proud parents of a UGA undergraduate student and a CVM veterinary student.

Dr. Moges Woldemeskel is an Assistant Professor in the Department of Pathology at UGA. He has been a veterinary pathologist at the TVDIL since 2005. Dr. Woldemeskel received his DVM degree from the Addis Ababa University (AAU), Ethiopia, a PhD degree in veterinary anatomic pathology from the Institute of Pathology, Hannover Veterinary University, Germany, and is boarded in Anatomic Pathology. In Ethiopia, he was an Associate Professor and Head of the Department of Pathology and Parasitology, Faculty of Veterinary Medicine. He was a Senior Fulbright Research Scholar at the University of Tennessee, College of Veterinary Medicine, Knoxville, Tenn. Dr. Woldemeskel has 23 years of teaching, research and diagnostic experience. Throughout his career he has developed expertise in veterinary pathology, disease diagnosis and management of diseases afflicting companion animals, food animals, exotic animals and wildlife in three continents (Africa, Europe and North America). Dr. Woldemeskel's research interest includes tumor biology, respiratory diseases and nephropathy in animals.

**Dr. Moges
Woldemeskel**



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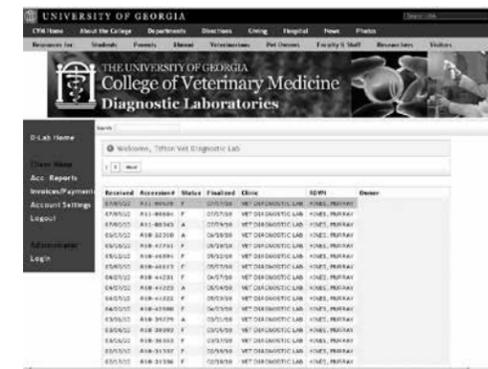
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Communication is key to a good relationship! Please remember to provide a complete **clinical history** for necropsies and biopsies. If there are **multiple animals**, attach a separate sheet listing the animal identifications that match the sample labels. And remember, we can't read wet forms! Keep submission **forms dry** in a separate plastic bag.
Find more Helpful Hints on pages 6 and 7.

MESSAGE FROM THE DIRECTORS

Jeremiah [Jerry] T. Saliki and Murray E. Hines II

We are very pleased to present the fifth volume of our re-established newsletter, and you can expect our next newsletter in March 2011. The goal of these newsletters is to communicate with you, our clients and stakeholders, about the status of the laboratory and our continuous effort to provide the highest level of service to veterinarians, animals, farmers, and pet owners of the state of Georgia.



The Georgia Veterinary Diagnostic Laboratories remain committed to providing you with timely, accurate, reliable, and affordable diagnostic services. In recent years, a combination of increased costs of laboratory supplies and personnel benefits have resulted in increased costs of operations, in spite of our efforts to cut costs. Additionally, state support to the Diagnostic Laboratories has decreased by 17.5% in the last two years. Faced with this serious budget situation and determined to maintain the quality

and timeliness of our services to you, in June we requested and the Commissioner of Agriculture approved, modest and selective fee adjustments effective July 1, 2010. These fee increases affected only 31.5% of the tests we offer and raised the average test price by 8.8%. In addition, the Georgia Department of Agriculture closed the State Brucellosis Laboratory in Atlanta effective June 30, 2010. The Athens and Tifton Diagnostic Laboratories have taken over state regulatory testing for brucellosis, anaplasmosis and pseudorabies previously performed by that laboratory. As a result of insufficient state funding this regulatory testing can no longer be performed without fees. The new complete schedule of Diagnostic Laboratory fees has been posted on our web site and was distributed to our clients by e-mail, FAX or regular mail. We believe these modest fee increases will allow us to continue to provide you with high quality, reliable, accountable,

Directors' Message, Cont'd

and affordable diagnostic services, while maintaining our ability to provide disease surveillance to the State of Georgia. We will continue our efforts to reduce costs without cutting services by putting technology to work and by training personnel to operate more efficiently. Internet retrieval of case results, account information, and secure online credit card payments via the Diagnostic Laboratories website (www.vet.uga.edu/dlab) is now available for clients of the Athens Laboratory, and the Tifton Laboratory will follow suit in the near

future. A future upgrades to the website will involve online submission of accessions for both laboratories. We continually work hard to improve our services and reporting of results as the quality and timeliness of the results we deliver to you is critically important. We look forward to our continuous partnership in promoting animal health, protecting agriculture, and contributing to economic development, public health and well-being in Georgia and beyond.

ATHENS VETERINARY DIAGNOSTIC LABORATORY

- Dr. Daniel Rissi, a resident in the Department of Veterinary Pathology, joined the staff of the AVDL in June 2010. Dr. Rissi will pursue his residency training at AVDL by performing anatomic pathology diagnostic work under the mentorship of the six experienced pathology faculty members.
- Jenny Embry, a certified medical technologist, joined the staff of the AVDL in June 2010 and works in the Virology/Serology area. Jenny came to us from the private sector (Merial and Biomerieux) where she has worked for the past 9 years. Her experience in the private sector will be highly beneficial to the lab.
- Jennifer Lightsey in the Receiving area recently delivered a healthy baby boy, Jacob Andrew Lightsey.
- Dr. Jeremiah Saliki won the 2010 Charles Dobbins award for Excellence in Service, which recognizes outstanding service to the people of the state of Georgia and the surrounding region.
- Dr. Susan Sanchez won the 2010 Outstanding Laboratory Service award, which is given to an individual who has provided excellence in laboratory support for field or hospital investigations.
- Sarah Bates, Ingrid Fernandez and Paula Bartlett achieved excellent results in the 2010 USDA proficiency tests for avian influenza, swine influenza, and Newcastle disease. Their achievement assures that AVDL will remain certified for these tests and can continue to qualify for federal funding for surveillance testing.
- Jennifer McClain successfully completed the 2010 BSE (mad cow disease) proficiency test with a perfect score. This achievement assures that the AVDL will maintain its certification status with the USDA and continue to serve as the regional testing lab.

TIFTON VETERINARY DIAGNOSTIC INVESTIGATIONAL LABORATORY

- Congratulations to Dr. Marcia Ilha, who successfully passed her anatomic pathology board certification exam on her first attempt. She is now a board certified pathologist with the American College of Veterinary Pathologists as of September 2009.
- At the annual Staff Appreciation Luncheon Debra Webb received an award for 5 years of service. Lisa Whittington and Greg Owens received awards for 25 years of service. Teresa Cook and Dr. Eloise Styer received awards for 30 years of service.



Tifton welcomes Dr. Sheela Ramamoorthy who joined the faculty as an Assistant Professor of Virology on August, 1st 2010. Her current research is focused on diagnostic test development, prevention and molecular pathogenesis of swine viral diseases, particularly in the context of small DNA viruses such porcine circoviruses.

veterinarians) who package or transport items in this category; the training may be informal and in-house.

Fixed tissues should be submitted in tightly sealed, leak-proof plastic screw-top jars without a neck. Do not submit formalin-fixed tissues in whirl-paks, glass jars, jars with a neck, or jars whose lids do not seal (i.e. baby food jars). An overview of the requirements and links to other important information associated with packaging and shipping specimens can be found at: www.avma.org/issues/pack_sip_lab_specimens.asp

Tifton Note: The serum neutralization (SN) assays for EEE, WNV, EVA, and VS at the TVDIL are done on Fridays. Please inform us if you are shipping a sample on Thursday, so that it can be included in the Friday testing to avoid any testing delays.



QUALITY IN THE LABORATORY

by Beverly Arnold, PhD: Quality Manager AVDL

The Georgia Veterinary Diagnostic Laboratories are two of only 41 accredited veterinary laboratories in North America. We are accredited by the American Association of Veterinary Laboratory Diagnosticians (AAVLD). The goal of the AAVLD is to assist Labs meet or exceed the World Organization for Animal Health Quality Standards and Guidelines for Veterinary Laboratories. Meeting these quality standards requires the effort of every staff member, from the directors and pathologists to the technicians and administrative personnel.

The AAVLD defines quality as "meeting or exceeding customer's expectations in veterinary diagnostic services." A quality system adds consistency to the testing processes, leads to reliable quality testing results, and enables laboratories to continually improve their testing facilities. Continuous review of protocols ensures that we use the most effective, accurate and modern methods to test client samples. All pieces of equipment (from pipettes to refrigerators, freezers and centrifuges) are carefully monitored and calibrated to make sure they are working properly and at peak efficiency. Movement of samples through the lab is tracked and monitored to prevent errors and reduce turn-around time without affecting accuracy of results. All individuals who analyze samples attend regular training sessions, attend national continuing education conferences, and undergo proficiency tests to ensure the highest accuracy of results. Our faculty draws on the expertise of

each other and specialists throughout the veterinary college to bring you the most precise and correct diagnosis possible.

Why is this important to you? When you have confidence in the accuracy of the laboratory's test results, value our services, and trust our highly educated faculty and staff, you are more likely to make valid medical



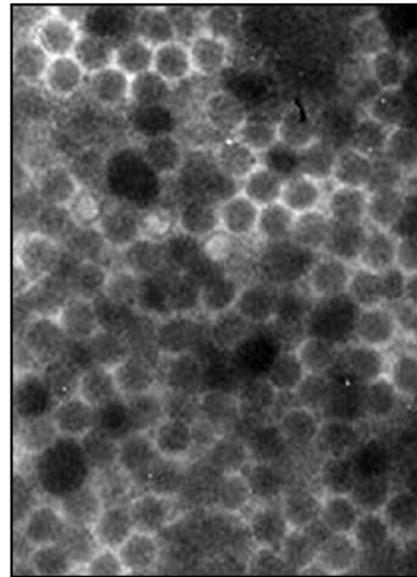
decisions regarding your patients. In turn, this gives your clients increased satisfaction with the quality of veterinary health care they receive from you.

We want to continue to provide the best possible services to our clients and you can help us in this process. We send out yearly a client satisfaction survey to see how we are doing. Take time to fill it out and give us your comments, positive and negative. We use the constructive criticisms you provide to improve our client services. If at any time you have a specific problem or if you feel that we could do a better job, please take a minute and let us know. Quality is about continuous improvement, and we are proud of our dedication to providing you and your patients with quality results.

BOVINE ENTEROVIRUS

by Uriel Blas Machado, DVM, PhD, DACVP

Bovine enterovirus (BEV) belongs to the family Picornaviridae (picornaviruses), which consists of small (18–30 nm), nonenveloped viruses with an icosahedral capsid that encloses a single copy of positive-sense RNA genome. Bovine enterovirus is in the genus Enterovirus, along with poliovirus, human enterovirus, coxsackieviruses, swine vesicular disease virus, echovirus 11, and others. Originally classified into several serotypes, only two serotypes, BEV-1 and BEV-2 are now recognized. Because of the unavailability of type specific antisera or a commercially available



Negative staining electron microscopic image of nonenveloped BEV-1 viral particles

assays or had identified more than one infectious agent. Recently in the first report of BEV in more than 20 years, BEV-1 was isolated from a 2-year-old pregnant Aberdeen Angus in Oklahoma with fatal enteric disease. This heifer was 7.5 months pregnant, from a herd of 100 apparently healthy cows, and died within 10 hours of hospitalization. At necropsy, the mucosa of the spiral colon and cecum had multiple foci of hemorrhage and ulceration. Virus isolation from intestinal lesions followed by electron microscopy yielded an approximately 27 nm, nonenveloped, cytopathic, virus. Further characterization by molecular and phylogenetic analyses classified the virus isolate as bovine enterovirus type 1 (BEV-1). At the time of this writing, reports that describe animals experimentally infected with virulent BEV-1, the lesions associated with infection and disease, or its pathogenesis in cattle do not exist. Faculty members at the Athens Veterinary Diagnostic Laboratory are conducting research on this virus isolate. Obtaining information about the susceptibility of cattle to challenge, the pathology associated with infection, and the prevalence of BEV-1 infection in herds would be essential to the understanding of infection and disease in cattle.

HELPFUL HINTS:

Coggins Forms: Proper completion of paper EIA Coggins forms is essential to avoid any delays in processing test results. Drawings of any markings and the written description of those markings should be included on the EIA forms. If there are no markings, please indicate “NO MARKINGS.”

Serum Separator Tubes: We are experiencing problems with samples submitted in serum separator tubes (SST) due to breakage of gels. Serum samples should be submitted in non-expired SST. If a centrifuge is not available to spin and separate the serum samples, it is preferable to submit in a non-separator tube.

Fresh Tissues & Culture: Fresh tissues must always be submitted on ice packs. Please don’t forget to write down the location where culture swabs were taken from.

Formalin Fixed Tissues: If you ship diagnostic samples through the mail or by a courier (FedEx, UPS, etc.) you must be aware of your responsibilities as the shipper. Federal regulations were revised in 2006 and it is no longer acceptable to use the term “Diagnostic Specimen” or “Clinical Specimen” to label the package. The correct term is “Biological Substance, Category B.” The law requires everyone involved in the packaging and shipping of biological substances to have the proper training on a regular basis. For formalin-fixed tissues (category B hazardous infectious material) training and documentation of the training is required for all staff (including

NEW TESTS

Athens

The Athens Diagnostic Lab now offers a variety of PCR test panels. Veterinarians frequently see generalized symptoms that could be caused by a number of different viral or bacterial pathogens. We have designed panels intended to target the most common pathogens for a variety of host specific syndromes. These panels allow you to receive fast, cost-effective diagnoses by testing for multiple pathogens from a single submission.

Canine Diarrhea Panel - \$85 Campylobacter jejuni/coli Salmonella spp. Lawsonia intracellularis Clostridium difficile toxins A & B Clostridium perfringens enterotoxin Canine Parvovirus	Canine Respiratory Panel - \$95 Bordetella bronchiseptica Canine adenovirus types 1 & 2 Influenza Type A Canine distemper virus Mycoplasma spp. Coronavirus	Feline Diarrhea Panel - \$85 Campylobacter jejuni/coli Salmonella spp. Clostridium difficile toxins A & B Clostridium perfringens enterotoxin Feline parvovirus (panleukopenia) Tritrichomonas foetus
Feline Respiratory Panel - \$95 Feline herpesvirus Chlamydomphila felis Feline calicivirus Bordetella bronchiseptica Mycoplasma spp. Influenza Type A	Tick-borne Disease Panel - \$80 Anaplasma spp. Ehrlichia spp. Borrelia burgdoferi Rickettsia spp. Babesia spp.	Feline Ocular Panel - \$56 Feline herpesvirus Chlamydomphila felis Feline calicivirus
Bovine Reproductive Panel I - \$50 Tritrichomonas foetus Campylobacter foetus Leptospira spp.	Bovine Reproductive Panel II - \$40 Tritrichomonas foetus Campylobacter foetus	

Tifton

Canine Parvovirus Hemagglutination inhibition test. This test requires at least 1ml of serum. It is \$6.00 per sample and has a 1-2 day turnaround time.

Caprine arthritis and encephalitis (CAE) antibody ELISA. This test requires at least 1ml of serum. It is \$8.00 for the first sample and \$6.00 for additional samples with a 1-2 day turnaround time.

REGULATORY TESTS

The Georgia Department of Agriculture (GADA) brucellosis testing laboratory in Atlanta has closed. The Athens and Tifton diagnostic labs have assumed responsibility of brucellosis, pseudorabies and anaplasmosis regulatory testing. **The following tests are now being offered:**

Athens -

- Brucellosis by buffered plate agglutination and CARD tests

Tifton -

- Brucellosis by buffered plate agglutination, CARD test, Milk ring test, and Plate agglutination test
- Anaplasmosis by c-ELISA
- Pseudorabies by latex agglutination test, gB ELISA, and g1 ELISA tests

THE DAILY LIFE OF A PATHOLOGIST

Challenging diagnoses in surgical biopsies

by Marcia R S Ilha, DVM, MSc, DACVP

Veterinary pathologists are challenged daily with making a diagnosis on a variety of surgical biopsies. Many times clinicians will opt for surgical biopsy hoping for a definitive diagnosis that will give relevant information for therapy and prognosis. The pathologist becomes that one person from whom clinicians and owners wait for an answer. At times, however, the histological findings are inconclusive. Some examples of challenging diagnoses are discussed below.

Inflammatory bowel disease: There is still extensive debate on how many and which inflammatory cells would be considered “normal” in the lamina propria of intestinal biopsies. Inflammatory bowel disease is a very challenging diagnosis and a general diagnosis of “enteritis” can be easily made in many biopsies depending on the evaluation criteria used by the pathologist. Recently the World Small Animal Veterinary Association Gastrointestinal Standardization Group published standard templates

for the histopathologic diagnosis of gastrointestinal inflammation in endoscopic biopsies from dogs and cats. The standardization is an attempt to facilitate the reporting of microscopic changes in biopsy samples and to reduce variation between the interpretations of different pathologists. However, this is still a controversial area.

Splenic hemangiosarcoma: One



Marcia Ilha at a microscope

of the most frustrating diagnoses for pathologists, clinicians, and owners is the “elusive” splenic hemangiosarcoma. Many times the biopsy report will come back as “no neoplasia found” or the final diagnosis is simply of “splenic hematoma.” Clinicians however are still suspecting splenic hemangiosarcoma and will ask for additional sectioning. After several histological sections being examined

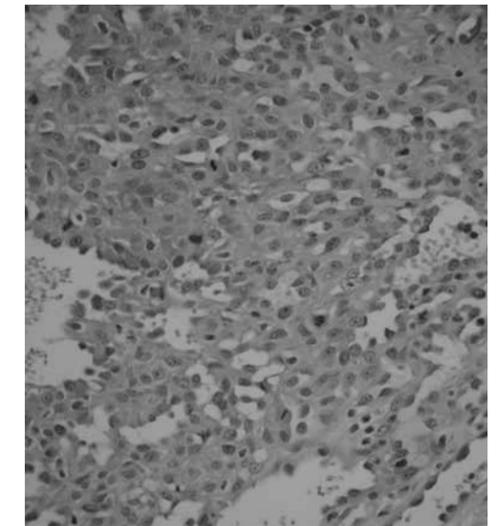
and several recuts being made the diagnosis is still of a hematoma. Hemangiosarcomas have a tendency to give origin to large hematomas and areas of necrosis, and many times the neoplasm cannot be identified in the tissues. A diagnosis of splenic hematoma without a specific underlying cause such as nodular splenic hyperplasia or trauma may be still an indication of the presence of hemangiosarcoma in animals in which presentation and hematological findings are suggestive.

Bone core biopsy: Often the clinician is concerned with a neoplasm or inflammatory process in an osteolytic lesion and receives a report of normal or reactive bone. It is very frustrating for pathologists to report that “no lesions are found” from a specimen. Very often the samples are collected from areas of reactive bone at the periphery of the lesion and therefore a diagnosis is impossible.

Chronic skin disease: Clinicians have to be aware that very often the pathologist will report back what they already know, a diagnosis of “chronic skin disease” with a long list of possible differential diagnoses or none at all. In many cases a skin biopsy is performed after the animal has undergone topical or systemic treatment with multiple combinations of antibiotics, steroids, and anti-inflammatory drugs. As with other organs, there are many general reactions of the skin to injury that are not indicative of any particular disease and can be seen in chronic skin diseases of multiple etiologies. The acute skin lesion usually provides the most information and best chance for an accurate diagnosis.

Artifact: Another common problem in surgical biopsies is artifact. Electrocautery or laser heat artifact is a crucial problem with small biopsies. It can destroy a large portion of the tissue and can

Dog, histopathology of hemangiosarcoma



result in non-diagnostic samples, misdiagnoses, or interfere with the surgical margin evaluation.

Practitioners should consider the above mentioned factors when submitting a biopsy. Always remember that the results from a surgical biopsy should be combined with the clinical presentation to reach an accurate diagnosis, prognosis, and select treatment options.

DR. ELOISE STYER RETIRES



Dr. Eloise Styer recently retired from the TVDIL effective June 30, 2010. She was a Public Service Associate Professor at the TVDIL who developed and directed the laboratory's electron microscopy section for 30 years. She received her BS in biological sciences

from Cornell University in 1967 and her MS and PhD in 1975 and 1978, respectively, in plant pathology/virology at the University of Maryland. She joined the TVDIL in 1980 and instituted electron microscopy services allowing rapid diagnosis of viral

infections through negative stain (direct) transmission electron microscopy (TEM) at the TVDIL.

Over the years, Dr. Styer also utilized her botanical expertise to identify potentially toxic plants, algae and mushrooms submitted by practitioners, or collected from the intestinal tract at necropsy. Dr. Styer was co- and principal investigator in several studies on proliferative gill disease (PGD) of channel catfish that identified the agent of PGD and earned her the 1994 Tifton Sigma Xi Association's Outstanding Creative Research Award. She also participated in numerous other collaborative research projects with many investigators. In addition, Dr. Styer was recently awarded Professor Emeritus status at UGA. We wish her a happy and restful retirement.

ETHELL VEREEN FEATURED AS UGA AMAZING STUDENT



Ethell Vereen is a graduate student in Ecology working at the TVDIL under the mentorship of Dr. Sree Rajeev. He is employed with the USDA-Agricultural Research Services in the Southeast Watershed Research Laboratory in Tifton, Ga., as a Student Career Experience Program student. His doctoral research project investigates the frequency of detection and spatial distribution of Salmonella and Campylobacter in the Satilla River basin. He will be finishing his PhD in this Fall. Ethell also recently won the first place in graduate student oral presentations at the 2010 retreat of the Infectious Disease Department of the College of Veterinary Medicine. Find his story at www.uga.edu/amazing/vereen2.html