



Veterinary Medical
Diagnostic Laboratory

University of Missouri

Summary List of Services & Fees

1-800-UMC-VMDL (1-800-862-8635)
Fax: 1 573-882-1411

www.vmdl.missouri.edu
(Effective July 15, 2016)



Submit all laboratory samples to one of the following addresses:



Post Office Mailing Address

Veterinary Medical Diagnostic Lab
P.O. Box 6023
Columbia, MO 65205

Courier Street Delivery Address

Veterinary Medical Diagnostic Lab
810 E. Campus Loop
Columbia, MO 65211

Basic VMDL Policies:

- Please call the VMDL for pricing of custom procedures and research project testing.
- Prices subject to change without notice.
- Results can be reported by E-mail, fax or U.S. mail. They can also be viewed in the VMDL web portal.
- By submitting specimens to the lab, clients are considered to have agreed to VMDL testing procedures and policies, including billing.
- It is the shipper's responsibility to make sure that diagnostic specimens are packaged according to current shipping rules and regulations.
- Specimens submitted to the VMDL become VMDL property.
- If a particular test is not listed, call **1-800-862-8635** to obtain information regarding availability, pricing, sample submission and packaging requirements.

For Overnight Delivery: Call the VMDL **1-800-862-8635** to obtain information about submitting specimens at a reduced cost. The shipping costs will be added to your account upon receipt of delivery. Please arrange shipping so specimens arrive between **8 am – 5 pm, Monday – Friday**. No one is available to accept packages over the weekend.

Have a Package Picked Up Directly at Your Business: This is a weekday service that both in-state and out-of-state clients can use. Call the VMDL to find out how this FedEx service could both simplify your life and possibly speed up turnaround time. Significant cost savings have been negotiated by the VMDL.

Subcontracting Service: If a test is not listed in the VMDL Summary List of Services & Fees, call to find out if the test is available. Samples received requesting tests not routinely performed by the VMDL will be forwarded to an appropriate lab for testing. These samples will be subcontracted to laboratories that are reliable, rapid and as inexpensive as possible.

Referral Service: The client may request testing by a laboratory other than the MU VMDL. Such labs are designated as referral labs. The VMDL is not responsible for results from referral labs and does not attest to the qualifications of these labs.

A handling fee of \$10.00 will be added for submitting specimens to either subcontracting or referral laboratories, in addition to the actual mailing costs incurred and test charges.

Rabies: Specimens are sent for testing to the State Public Health Laboratory in Jefferson City, MO. Contact your local health department regarding proper submission of the specimen, or go to <http://health.mo.gov/lab/rabies.php> for additional information.

Turn Around Time: Working days after sample is received (Working Days=M-F, Day=24 hours).

Collection and Preparation of Specimens

Necropsy: Live, sick, untreated animals that show typical clinical signs, along with dead animals that have not undergone decomposition or treatment, are the specimens of choice. Dead animals should be necropsied as soon as possible after death. Because the lab does not have animal handling facilities, animals should be humanely euthanized before submission. If size permits, animals should be **refrigerated** until necropsied. The owner should be encouraged to bring animals to the laboratory when the veterinarian cannot. Submission of more than one animal, when possible, will increase the chances of a rapid, accurate diagnosis.

Collecting and Labeling of Specimens: When the whole animal cannot be brought to the laboratory, properly collected and preserved specimens may be helpful in arriving at a diagnosis. Careful selection of specimens representative of the suspected disease process as well as a good history are very important. Clearly mark the referring veterinarian's name and the owner's names on each container.

Submission Forms: Contact the lab for hard copies of the submission forms or visit our website for a version that allows free text to be typed directly on the form. Filled out forms, and carefully written, detailed histories facilitate accurate diagnoses. **If a zoonotic disease such as rabies is suspected, please indicate on the submission form so the specimen can be handled properly and unnecessary exposure can be avoided.**

Histopathology: Sections of most tissues should be no thicker than 1/4 inch (6 mm) and should include lesional and normal tissue when possible. Brain is best submitted without sectioning or with coronal (dividing into front and back) sections at 1-2 inch intervals. Spinal cord may be submitted intact (with the dura mater opened) or in segments at least 1 inch in length. Intestine should be submitted in segments 1-2 inches in length. Lymph nodes should be sectioned once in the sagittal plane (dividing into left and right halves). Large masses should be incised. **Do not use narrow mouthed containers.**

Mycology: Skin scrapings, hair, crusts or scabs should be placed in a sterile, **dry**, screw-capped tube. When a deep or systemic fungal infection is suspected, specimens should be collected and transported in the same manner as bacteriology samples. Tissues and body fluids are preferred over swabs.

Bacteriology: Specimens collected for isolation and identification of infectious agents need to be fresh, collected as aseptically as possible, and transported to the laboratory as rapidly as possible under **refrigeration (ice packs)**. For bacterial isolation, culturette swabs should be used. Remel's Act I with anaerobic transport media is recommended for anaerobic culture.

Clinical Pathology: CBCs: Freshly made smears should be submitted along with EDTA-anticoagulated whole blood. Slides submitted for cytological evaluation should be protected from formalin fumes. Plastic slide holders with proper packaging are preferred over cardboard mailers. Blood, fluids and feces should be shipped on ice, Monday-Thursday, to arrive the day after collection. **Chemistries:** Serum or plasma should be separated from the cells and submitted in a separate tube, even if serum separator tubes are used. Separate serum or plasma within 1 hour of collection. **Aspirates, imprints, and smears:** Fluids may be submitted in EDTA tubes, but direct smears should always accompany the fluid. All smears should be air-dried, unfixed, and kept as dust-free as possible. Bone marrow aspirate slides or bone marrow core biopsies should be accompanied by current CBC results, or by fresh smears and EDTA-anticoagulated blood collected simultaneously with the bone marrow aspirate. **CSF.** Mail-in samples should be preserved using the following instructions: To a clean tube without anticoagulant, add one part autologous (patient) serum to 9 parts CSF (eg. 0.05 ml serum and 0.45 ml CSF) and label the tube "CSF with serum". This will be used for the cell count and slide preparation. Label remaining sample as "straight CSF"; this will be used for the protein analysis. Outside samples should be **shipped on ice** overnight, Monday-Thursday. If you have questions regarding the collection and submission of correct samples for clinical pathology or if submitting large groups of samples, please call the Clinical Pathology Laboratory (573-882-3338).

Immunohistochemistry (IHC): Follow the general rules for histopathology. Adequate fixation is critical for immunohistochemical stains; autolyzed tissues usually give questionable results. Fix tissues for 24-48 hours in 10% neutral buffered formalin solution. Indicate the time and date samples were put in fixative. Please indicate if fixative other than formalin is used.

Molecular Diagnostics: Specimens for PCR/RT-PCR assays should be fresh and collected for submission as aseptically as possible. Tissues, swabs, feces and fluids are acceptable specimens. If whole blood is submitted, use the anticoagulant EDTA. Due to the sensitivity of these assays, care must be taken during sample collection to minimize cross-contamination between specimens. Transport specimens under refrigeration (ice packs).

Parasitology: Fecal samples should be refrigerated during shipment. If there is a delay, they can be shipped in 10% formalin. Parasites, external and internal, can be fixed and submitted in 70% ethyl alcohol; skin scraping may be submitted in a closed glass bottle.

Serology: Clear sera should be submitted for testing. If blood is collected in a red top tube, please separate serum from clot before submitting, or use a gel separator and separate the serum from the clot before submitting.

Toxicology: Check the respective boxes for “Toxicology” on the front side of the submission form and/or “Consult with a toxicologist” on the back side of the submission form, if you would like toxicology tests run on samples from a case you have submitted and/or you would like a call from a toxicologist or the Toxicology Section to discuss the case, respectively.

BASIC GUIDELINES FOR TOXICOLOGY SAMPLE SUBMISSION

FAQs	Feed Samples	Fresh Tissues	GI Contents/Baits	Fluids
What samples?	Grains; processed feeds; silages; hays; grasses; pet food; etc.	Liver; kidney; fat; ½ brain*	Vomitus; rumen or stomach contents; baits; “UFOs”**	Whole (unclothed) blood; serum (separated); ocular fluid; urine; H ₂ O
How much?	250-450 grams feedstuffs IDEAL ; if less, provide as much as is available for analysis 30 grams ≈ 1 ounce	50 -100 grams; ½ brain cut longitudinally	50-500 grams of GI contents; 250-450 grams baits or “UFOs”	5-10 mL unclotted blood, serum, or ocular fluid; 20-50 mL urine***; 250- 1,000 mL H ₂ O
How stored?	Kept dry in labeled zip-lock plastic or paper bags; unopened cans of pet food submitted as is; freeze open cans of pet food CYANIDE TESTING FREEZE Forage Sample ASAP	NO FIXATION REFRIGERATE FROZEN IDEAL	FREEZE ASAP GI contents Baits; “UFOs”;	Refrigerate; freeze for NH ₃ testing; dilute 5 mL H ₂ O 1:1 in 10% formalin for B-G algae ID
Which blood tube? ****				Pb or AChE Activity WHOLE BLOOD PURPLE/GREEN TOP Zn-SERUM ROYAL BLUE TOP
How packaged? *****	Secondary containers	Secondary containers	Secondary containers	Secondary containers

*If neurological signs and not zoonotic disease (RABIES) suspect; **“UFOs” = unidentified food objects suspected of being toxic; ***at least 50 mL for Cantharidin analysis send-off; ****Whole blood in EDTA or heparinized blood tube and serum in RED TOP OR ROYAL BLUE TOP, IF NOT TESTING FOR Zn. *****The primary container is the vial, bag, can, etc. that the sample is in. The secondary container is the box or other sturdy container that the primary container is put in. In instances where there is potential for leakage, a tertiary container is recommended. **Please call 800-862-8635 or 573-884-9270 and ask to talk to Dr. Evans for questions not answered in the toxicology portion of the price list (pages 14-15 or link below), or e-mail Dr. Evans at evanst@missouri.edu. http://vmdl.missouri.edu/tests_toxicology.html**

ANATOMIC PATHOLOGY

(Specimens pooled at the pathologist's discretion for ancillary testing)

Test Description	Price	Turn Around Time
BIOPSY		
Biopsy (may include up to 3 IHC and 3 special stains as determined by pathologist)	\$62.00	3-5 business days or less; longer with special stains or IHC
BVD Immunohistochemistry (submit ear notch in 10% buffered formalin) up to 6 animals per slide	\$33.00	3-5 business days
Immunohistochemistry (per slide)	\$29.25	n/a
NECROPSY		
Cosmetic Necropsy (charged in addition to the regular necropsy fee)	\$190.50	Procedure with necropsy
Large Animal Spinal Exam (charged in addition to the regular necropsy fee)	\$70.00	Procedure with necropsy
Gross Necropsy (up to 3 animals)	\$51.50	2 business days
Gross Necropsy (up to 3 animals) plus Histopathology - 2 IHC per case	\$72.00	7 business days
Gross Necropsy plus Histopathology and Lab Tests for One-Organ System Disease Investigation (up to 3 animals) <ul style="list-style-type: none"> • All necessary tests (excludes Toxicology) at the pathologist's discretion. • Limit 1 PCR panel or 4 individual PCR tests and 2 susceptibilities per case. Additional testing not listed will be an extra charge.	\$144.00	After conclusion of testing; at 5 business days report with histo
Gross Necropsy plus Histopathology and Lab Tests for Multi-System Disease Investigation or General Animal Health Survey (1 animal) <ul style="list-style-type: none"> • All necessary tests (excludes Toxicology) at the pathologist's discretion. • Limit 2 susceptibilities per case. Additional testing not listed will be an extra charge.	\$206.00	After conclusion of testing; at 5 business days report with histo
Mail-In/Delivered Necropsy Samples for One-Organ System Investigation (1 animal) <ul style="list-style-type: none"> • All necessary tests (excludes Toxicology) at the pathologist's discretion. • Limit 1 PCR panel or 4 individual PCR tests, 2 microbial cultures and 2 susceptibilities. Additional testing not listed will be an extra charge.	\$120.00	After conclusion of testing; at 5 business days report with histo
Mail-In/Delivered Necropsy Samples for Multi-Organ Systems Investigation (1 animal) <ul style="list-style-type: none"> • All necessary tests (excludes Toxicology) at the pathologist's discretion. • Limit 2 microbial cultures and 2 susceptibilities per case. Additional testing not listed will be an extra charge.	\$185.50	After conclusion of testing; at 5 business days report with histo

ANATOMIC PATHOLOGY (continued)

(Specimens pooled at the pathologist's discretion for ancillary testing)

Test Description	Price	Turn Around Time
PATHOLOGY PANELS		
<p>Animal Abortion Panel (up to 3 fetuses or a set of tissues)</p> <p>Fixed tissues:</p> <ul style="list-style-type: none"> • Liver, lung, kidney, heart, spleen, brain, skeletal muscle, placenta if at all possible. Can submit other organs as needed. <p>Bovine fetal fluid: peritoneal, pericardial, thoracic (pooled):</p> <ul style="list-style-type: none"> • Serology for <i>Neospora</i> <p>Refrigerated tissues (placenta, fetal lung, stomach fluid, and/or spleen/thymus/kidney/liver):</p> <ul style="list-style-type: none"> • Aerobic culture with 2 of the following: placenta, fetal lung, liver, or stomach contents. Limit 2 susceptibilities per case. • PCR for bovine: BVD I and II, <i>Leptospira</i>, IBR • PCR for canine: Herpesvirus • PCR for equine: EHV1 and EHV4, <i>Leptospira</i> • PCR for porcine: <i>Leptospira</i>, PRRS, PCV-2 • PCR for small ruminants: Pesti/BVD, <i>Toxoplasma gondii</i>, <i>Chlamydophila psittaci</i> <p>Additional testing not listed will be an extra charge.</p>	\$140.00	After conclusion of testing; at 5 business days report with histo
<p>Food Animal Diarrhea Panel for Fecal Samples (1-3 animals)</p> <p>Feces:</p> <ul style="list-style-type: none"> • Aerobic bacterial culture for <i>E. coli</i> and <i>Salmonella spp.</i> Limit 2 susceptibilities per case. • Cryptosporidial smears (bovine younger 2 weeks, individual testing) • Fecal flotation (older than 3 weeks) <p>PCR:</p> <p>Calves: BVD I and II, Bovine Coronavirus, Rotavirus</p> <p>Pigs: (younger pigs) TGE, PEDV, Delta Coronavirus, Rotavirus or (older pigs) <i>Brachyspira spp.</i>, <i>Lawsonia intracellularis</i>, <i>Salmonella spp.</i></p> <p>Additional testing not listed will be an extra charge.</p>	\$110.00	3 business days

ANATOMIC PATHOLOGY (continued)

(Specimens pooled at the pathologist's discretion for ancillary testing)

Test Description	Price	Turn Around Time
Food Animal Diarrhea Panel for Tissue Samples (1-3 animals) Fixed tissues: <ul style="list-style-type: none"> • Specimens of forestomachs, abomasum, and large and small intestine Intestinal Content: <ul style="list-style-type: none"> • Cryptosporidial smear (bovine younger than 2 weeks, individual testing) • Fecal flotation - (bovine older than 3 weeks) Refrigerated small and large intestine: <ul style="list-style-type: none"> • Aerobic bacterial culture: small intestine for <i>E. coli</i>; liver or large intestine for <i>Salmonella spp.</i> Limit 2 susceptibilities per case. • Anaerobic culture: small intestine for <i>Clostridium perfringens</i> PCR: Calves: BVD I and II, Bovine Coronavirus, Rotavirus Pigs: (younger pigs) TGE, PEDV, Delta Coronavirus, Rotavirus or (older pigs) <i>Brachyspira spp.</i> , <i>Lawsonia intracellularis</i> , <i>Salmonella spp.</i> Additional testing not listed will be an extra charge.	\$140.00	After conclusion of testing; at 5 business days report with histo
Food Animal Respiratory Disease Panel for Tissue Samples (1-3 animals) Fixed tissues: <ul style="list-style-type: none"> • Lung (abnormal with contiguous tissue) and other affected respiratory tissues Refrigerated tissues: <ul style="list-style-type: none"> • Aerobic culture of lung; nasal swabs if atrophic rhinitis is suspected in pigs. Limit 2 susceptibilities per case. PCR (refrigerated lung and lymph nodes): <ul style="list-style-type: none"> • Bovine: BVD I and II, BRSV, IBR, PI3 • Small Ruminant: PI3, BRSV Additional testing not listed will be an extra charge.	\$140.00	After conclusion of testing; at 5 business days report with histo
Chronic Wasting Disease (CWD) Testing – brain will be submitted to subcontract lab (disposal fee for extra \$51.50 per animal)	\$85.50	Procedure done day of receipt, sent to reference lab
Rabies Test – Brain will be submitted to Jefferson City lab for testing (disposal for extra \$51.50 per animal)	\$32.00	Procedure done day of receipt, result times vary; usually 2 business days

AVIAN PATHOLOGY

Test Description	Price	Turn Around Time
Avian Mail-in/Delivery Necropsy (up to 6 birds) including Bacteriology, Histopathology, Serology, Virology (excludes Toxicology)	\$120.00	3-5 business days
Avian Fungal Culture (litter)	\$28.00	Up to 3 weeks
Avian Gross Necropsy only (up to 6 birds)	\$47.00	2 business days

AVIAN PATHOLOGY

Test Description	Price	Turn Around Time
Avian Histopathology only (Biopsy or mailed in tissue, per case, up to 5 slides.)	\$62.00	3-5 business days
Avian Influenza Virus - AGID	\$2.85	2-3 business days
Avian Necropsy including Histopathology (up to 6 birds)	\$72.00	3-5 business days
Avian Necropsy including Histopathology, Serology, Virology, Bacteriology (excludes Toxicology) (up to 6 birds)	\$122.00	7 business days
ELISA Serology - Chicken (Infectious Bronchitis Virus (IBV), NDV, MG, MS, Avian Encephalitis Virus (AE))	\$2.00	3-4 business days
ELISA Serology - Turkey (<i>Bordetella</i> , HEV, NDV, MG, MS)	\$2.00	3-4 business days
Hemorrhagic Enteritis Virus (HEV) - AGID	\$3.00	2-3 business days
<i>Mycoplasma</i> Serology (<i>M. gallisepticum</i> (MG), <i>M. synoviae</i> (MS), <i>M. meleagridis</i> (MM)) – (HI)	\$2.75	1-2 business days
<i>Mycoplasma</i> Rapid Plate Test (MG, MS, MM)	\$2.00	1-2 business days
Newcastle Disease Virus (NDV) Serology – (HI)	\$2.85	1-2 business days
<i>Ornithobacterium rhinotracheale</i> (ORT) Rapid Plate Test	\$2.25	1-2 business days
<i>Salmonella pullorum</i> Tube Agglutination Test	\$2.00	1-2 business days
<i>Salmonella typhimurium</i> Tube Agglutination Test	\$2.00	1-2 business days

BACTERIOLOGY (Shipped on ice)

Test Description	Price	Turn Around Time
Abortion Screen	\$40.00	8 business days
Acid Fast Bacilli Culture (<i>Mycobacteria</i>)	\$33.50	60 business days
Aerobic Bacterial Culture, Isolation and Identification (excluding blood samples)	\$23.50	2-3 business days
Aerobic Bacterial Culture with up to three susceptibilities (Fixed price; must select before test run)	\$100.00	4 business days
Anaerobic Bacterial Culture	\$23.50	4 business days
Antimicrobial Susceptibility Test - per organism	\$26.00	2-3 business days
Blood Culture	\$35.00	8 business days
Enteric Screen (bovine, canine or porcine)	\$45.75	4 business days
FA screen for <i>Clostridium spp</i>	\$35.50	3 business days
Fungal Culture	\$23.50	30 business days
Joint Aspirate, Pleural Fluid or Peritoneal Fluid Culture	\$35.00	8 business days
Johne's Culture	\$40.00	60 business days
Mastitis Antimicrobial Susceptibility Test - per organism	\$13.00	2-3 business days
Microscopic Examination of Specimen (acid fast stain, dark field, phase, etc.)	\$12.50	1 business day
Ophthalmology Antimicrobial Susceptibility Panel - per organism	\$13.00	2-3 business days

BACTERIOLOGY

(Shipped on ice)

Test Description	Price	Turn Around Time
Sample Preparation	\$15.00	n/a
<i>Trichomonas foetus</i> culture	\$22.25	5 business days
Yeast Antimicrobial Susceptibility	\$44.25	10 business days

CLINICAL PATHOLOGY: HEMATOLOGY & COAGULATION

(EDTA for Hematology - minimum volume is ½ of total tube draw; coagulation - call for instructions)

Test Description	Price	Turn Around Time
Coagulation Activated Partial Thromboplastin Time (APTT) (contact lab)	\$20.50	1 business day
Prothrombin Time (PT) (contact lab)	\$20.50	1 business day
Hematology Automated Cell Count (CBC without slide review)	\$12.50	1 business day
Blood Smear Exam (slide)	\$18.50	1 business day
Buffy Coat	\$25.00	1 business day
CBC, Small Animal (includes slide review)	\$23.00	1 business day
CBC, Large Animal (includes slide review and fibrinogen)	\$25.00	1 business day
Coombs' (Direct) Canine only	\$32.00	1 business day
Fibrinogen (heat precipitation method)	\$6.25	1 business day
Knott's Test (heartworm microfilaria) See P.13 for Canine Heartworm - Elisa Serology test	\$15.50	1 business day

CLINICAL PATHOLOGY: CHEMISTRY PROFILES

(Serum or Lithium Heparinized plasma only, no whole blood, 1 ml)

Test Description	Price	Turn Around Time
Renal Panel (Alb, Ca, Cl, Creat, K, Na, Phos, UN)	\$20.00	1 business day
Avian Avian Maxi Profile (Alb, ALP, ALT, An.Gap, AST, Bicarb, Ca, CK, Cl, Creat, GGT, Glob, Gluc, K, Na, Phos, TP, UN, Uric Acid)	\$33.00	1 business day
Avian Mini Profile (Alb, AST, Ca, Glob, Gluc, GGT, TP, Uric Acid)	\$19.00	1 business day
Equine Equine Maxi Profile (Alb, An.Gap, AST, Bicarb, Ca, CK, Cl, Creat, D.Bili, GGT, Glob, Gluc, K, Mg, Na, Phos, T.Bili, TP, Trig, UN)	\$32.00	1 business day
Equine Mini Profile (Alb, An.Gap, Bicarb, Ca, CK, Cl, Creat, GGT, Glob, Gluc, K, Na, Phos, TP, UN)	\$21.75	1 business day
Food Animal Electrolyte and Mineral Panel (Bicarb, Ca, Cl, K, Mg, Na)	\$13.00	1 business day
Food Animal Maxi Profile (Alb, An.Gap, AST, Bicarb, Ca, CK, Cl, Creat, D.Bili, GGT, Glob, Gluc, K, Mg, Na, Phos, T.Bili, TP, UN)	\$32.50	1 business day
Food Animal Mini Profile (Alb, Ca, CK, Cl, Creat, GGT, Glob, K, Mg, Na, Phos, TP, UN)	\$20.00	1 business day
Large Animal Liver Profile (Alb, AST, D.Bili, GGT, Glob, T.Bili, TP)	\$17.50	1 business day

Ship clinical pathology biodegradable samples (blood, serum, urine, fluids and feces) on a cold pack OVERNIGHT. Only slides can be shipped without a cold pack.

CLINICAL PATHOLOGY: CHEMISTRY PROFILES (continued)

(Serum or Lithium Heparinized plasma only, no whole blood, 1 ml)

	Test Description	Price	Turn Around Time
Small Animal	Small Animal Liver Profile (Alb, ALP, ALT, Chol, Glob, GGT, Glu, T.Bili, TP, UN)	\$21.75	1 business day
	Small Animal Maxi Panel (Alb, ALP, ALT, An.Gap, Bicarb, Ca, Chol, CK, Cl, Creat, GGT, Glob, Gluc, K, Na, Phos, T.Bili, TP, UN)	\$31.50	1 business day
	Small Animal Mini Panel (Alb, ALP, ALT, Ca, Glob, Gluc, K, Na, Phos, TP, UN)	\$22.50	1 business day

CLINICAL PATHOLOGY: INDIVIDUAL CHEMISTRY TESTS

(Serum or Lithium Heparinized plasma only, no whole blood, 0.5 ml for 6 chemistries or less, 1 ml for 7 or more)

	Test Description	Price	Turn Around Time
	Albumin (ALB)	\$6.25	1 business day
	Alkaline Phosphatase (ALP)	\$6.25	1 business day
	Alanine Aminotransferase (ALT)	\$6.25	1 business day
	Aspartate Aminotransferase (AST)	\$6.25	1 business day
	Bicarbonate	\$6.25	1 business day
	Bile Acid - Pre or Single	\$20.00	1 business day
	Bile Acid - Post	\$20.00	1 business day
	Bilirubin, Direct (D. Bili)	\$6.25	1 business day
	Bilirubin, Total (T. Bili)	\$6.25	1 business day
	Blood Urea Nitrogen or Urea Nitrogen (BUN or UN)	\$6.25	1 business day
	Calcium (Ca)	\$6.25	1 business day
	Creatine Kinase (CK)	\$6.25	1 business day
	Chloride (Cl)	\$6.25	1 business day
	Cholesterol (Chol)	\$6.25	1 business day
	Creatinine (Creat)	\$6.25	1 business day
	Foal IgG Snap Test	\$28.00	1 business day
	Gamma Glutamyltransferase (GGT)	\$6.25	1 business day
	Glucose (Gluc)	\$6.25	1 business day
	Magnesium (Mg)	\$6.25	1 business day
	Osmolality (measured)	\$16.50	1 business day
	Phosphorus, inorganic (Phos)	\$6.25	1 business day
	Potassium (K)	\$6.25	1 business day
	Protein, Total (TP)	\$6.25	1 business day
	Sodium (Na)	\$6.25	1 business day
	Triglyceride (Trig)	\$6.25	1 business day
	Uric Acid	\$6.25	1 business day

Ship clinical pathology biodegradable samples (blood, serum, urine, fluids and feces) on a cold pack OVERNIGHT. Only slides can be shipped without a cold pack

CLINICAL PATHOLOGY: ENDOCRINOLOGY TEST

Test Description	Price	Turn Around Time
Cortisol - single - serum	\$25.00	1-2 business days
ACTH Stimulation- 2 samples - serum	\$45.00	1-2 business days
Dexamethasone Suppression - 2 samples - serum	\$45.00	1-2 business days
Dexamethasone Suppression - 3 samples - serum	\$60.00	1-2 business days
Endogenous ACTH (Equine only, call lab for submission instructions) - EDTA plasma	\$43.25	1-2 business days
Progesterone – serum	\$15.00	1 business day
Total T4 - Small Animal only - serum	\$25.00	1-2 business days
TSH - Canine only - serum	\$30.00	1-2 business days
Thyroid Panel (Total T4 and TSH) Canine only – serum	\$45.00	1-2 business days

CLINICAL PATHOLOGY: URINALYSIS (5-10 ml)

Test Description	Price	Turn Around Time
Protein/Creatinine Ratio	\$17.00	1 business day
Osmolality (measured)	\$16.50	1 business day
Urinalysis (complete) 5-10 ml; contact lab	\$16.75	1 business day
Urinalysis without Sediment Exam	\$9.00	1 business day

CLINICAL PATHOLOGY: FECAL

Test Description	Price	Turn Around Time
Baermann Sedimentation	\$19.25	2 business days
<i>Cryptosporidia</i> Exam	\$17.00	1 business day
Direct Fecal Exam	\$11.00	1 business day
Fecal Flotation	\$15.25	1 business day
Occult Blood	\$9.50	1 business day

CLINICAL PATHOLOGY: CYTOLOGY AND FLUID ANALYSIS

Send fluids in an EDTA tube along with slides. All fluids should be shipped overnight on ice. (Slides and fluids)

Test Description	Price	Turn Around Time
Bone Marrow Aspirate See P.2 Collection and Preparation of Specimens	\$44.00	1 business day
Bone Marrow Core	\$57.00	3-5 business days
Bronchoalveolar Lavage (BAL)	\$35.25	1 business day

Ship clinical pathology biodegradable samples (blood, serum, urine, fluids and feces) on a cold pack **OVERNIGHT**. Only slides can be shipped without a cold pack.

CLINICAL PATHOLOGY: CYTOLOGY AND FLUID ANALYSIS

Send fluids in an EDTA tube along with slides. All fluids should be shipped overnight on ice. (Slides and fluids)

Test Description	Price	Turn Around Time
CSF Analysis See P2 Collection and Preparation of Specimens	\$41.75	1 business day
Cytological Examination (tissue or fluid) - per site	\$32.00	1 business day
Multiple Lymph Node Cytology (up to 4 lymph nodes)	\$49.00	1 business day
Peritoneal/Pleural/Pericardial Fluid Analysis (color, transparency, total nucleated cell count, Sp. Gr., TP, PCV, cytologic exam)	\$39.25	1 business day
Synovial Fluid Analysis (color, transparency, total nucleated cell count, Sp. Gr., TP, PCV, cytologic exam)	\$38.00	1 business day

MOLECULAR DIAGNOSTICS(EDTA whole blood, CNS fluid, swabs, tissues from necropsy except as noted. All samples except *T. foetus* should be shipped on ice)

Test Description	Price	Turn Around Time
Avian		
Avian Influenza Virus qRT-PCR	\$31.50	1-2 business days
Avian Influenza H5/H7 strain Typing qRT-PCR	\$20.00	1-2 business days
Avian Paramyxovirus qRT-PCR	\$31.50	1-2 business days
<i>Mycoplasma gallisepticum</i> gel-based PCR	\$31.50	2-3 business days
<i>Mycoplasma synoviae</i> gel-based PCR	\$31.50	2-3 business days
Bovine (Ruminant)		
Bluetongue Virus qRT-PCR	\$31.50	2-3 business days
Bovine Coronavirus gel-based RT-PCR	\$31.50	2-3 business days
Bovine Leukosis Virus (BLV), (EDTA blood) gel-based PCR	\$31.50	2-3 business days
Bovine Parainfluenza Virus (PI3) gel-based RT-PCR	\$31.50	2-3 business days
Bovine Respiratory Syncytial Virus (BRSV) qRT-PCR	\$31.50	2-3 business days
Bovine Viral Diarrhea Virus (BVDV 1 and II) qRT-PCR	\$31.50	2-3 business days
Bovine Viral Diarrhea Virus (BVDV 1 and II) Pooled (serum or blood, max. pool size 10)	\$60.00	2-3 business days
Epizootic Hemorrhagic Disease (EHD) gel-based RT-PCR	\$31.50	2-3 business days
Infectious Bovine Rhinotracheitis Virus (IBR) qPCR	\$31.50	2-3 business days
Johne's direct PCR on feces (set up every other week)	\$31.50	3-10 business days
<i>Mycoplasma bovis</i> gel-based PCR	\$31.50	2-3 business days
<i>Mycoplasma bovoculi</i> gel-based PCR	\$31.50	2-3 business days
<i>Trichostrongylus axei</i> (inoculated in pouch, received within 48 hours of collection, room temperature)	\$22.75	2-4 business days
Bovine Enteric Panel: Bovine Coronavirus (BCV), Rotavirus group A, Bovine Viral Diarrhea Virus (BVDV) I and II	\$60.00	3-4 business days
Bovine Respiratory Panel: Bovine Viral Diarrhea Virus (BVDV) I and II, Bovine Respiratory Syncytial Virus (BRSV), Parainfluenza type 3 (PI3), Infectious Bovine Rhinotracheitis Virus (IBR)	\$72.00	2-3 business days
Bovine Pink Eye Panel: Infectious Bovine Rhinotracheitis Virus (IBR), <i>Mycoplasma bovis</i> , <i>Mycoplasma bovoculi</i>	\$58.75	2-3 business days

MOLECULAR DIAGNOSTICS (continued)

(EDTA whole blood, CNS fluid, swabs, tissues from necropsy except as noted. All samples except *T. foetus* should be shipped on ice)

Test Description	Price	Turn Around Time
Canine		
Canine Adenovirus gel-based PCR	\$31.50	2-3 business days
Canine Coronavirus gel-based RT-PCR	\$31.50	2-3 business days
Canine Distemper Virus gel-based RT-PCR	\$31.50	2-3 business days
Canine Herpesvirus qPCR	\$31.50	2-3 business days
Canine Respiratory Panel: Canine Distemper Virus, Influenza A, Canine Adenovirus	\$62.00	3-4 business days
Equine		
Equine Herpesvirus 1 & 4 gel-based PCR	\$35.00	2-3 business days
<i>Neorickettsia risticii</i> /Potomac Horse Fever (EDTA blood or feces) qPCR	\$35.00	2-3 business days
Equine Enteric Panel: <i>Salmonella</i> (feces), <i>Lawsonia</i> (feces or tissue), Potomac Horse Fever (EDTA blood and feces)	\$60.00	3-4 business days
Equine Enteric Panel: plus <i>Clostridium difficile</i> toxin A&B ELISA and <i>Clostridium</i> (Call for instructions)	\$128.75	3-4 business days
Equine Neurologic Panel: Herpesvirus PCR (EDTA blood and deep nasal swab) and West Nile Virus IgM ELISA (EDTA blood or serum); or West Nile Virus PCR on postmortem CNS tissue	\$58.75	3-4 business days
Feline		
Feline Herpesvirus gel-based PCR	\$31.50	2-3 business days
Feline Infectious Peritonitis Virus/Feline Enteric Coronavirus (FIPV, FeCV) gel-based RT-PCR	\$31.50	2-3 business days
Porcine		
<i>Brachyspira</i> spp. gel-based PCR	\$31.50	2-3 business days
Classic Swine Fever Virus qRT-PCR	\$35.00	2-3 business days
Foot-and-Mouth Disease (FMD) qPCR	\$35.00	2-3 business days
<i>Haemophilus parasuis</i> gel-based PCR	\$31.50	2-3 business days
<i>Lawsonia intracellularis</i> gel-based PCR	\$31.50	2-3 business days
<i>Mycoplasma hyopneumoniae</i> gel-based PCR	\$31.50	2-3 business days
Porcine Circovirus 2 (PCV 2) gel-based PCR	\$31.50	2-3 business days
Porcine Delta Coronavirus qRT-PCR	\$31.50	2-3 business days
Porcine Epidemic Diarrhea Virus (PEDV) qRT-PCR	\$31.50	2-3 business days
Porcine Reproductive and Respiratory Syndrome Virus (PRRSV) qPCR	\$31.50	2-3 business days
Transmissible Gastroenteritis Virus (TGEV) gel-based PCR	\$31.50	2-3 business days
Porcine Enteric Panel I (younger pigs): Delta Coronavirus, PEDV, Rotavirus A, TGEV	\$70.00	2-3 business days
Porcine Enteric Panel II (older pigs): <i>Brachyspira</i> spp., <i>Lawsonia intracellularis</i> , <i>Salmonella</i> spp.	\$60.00	2-3 business days

MOLECULAR DIAGNOSTICS (continued)(EDTA whole blood, CNS fluid, swabs, tissues from necropsy except as noted. All samples except *T. foetus* should be shipped on ice)

Test Description	Price	Turn Around Time
Porcine Respiratory: Influenza A, <i>Mycoplasma hyopneumoniae</i> , PCV 2, PRRSV	\$70.00	3-4 business days
General		
<i>Anaplasma marginale</i> qPCR	\$31.50	2-3 business days
<i>Anaplasma</i> spp. qPCR, Sybr	\$31.50	2-3 business days
<i>Chlamydophila psittaci</i> (including <i>C. felis</i> , <i>C. abortus</i>) gel-based PCR	\$35.00	2-3 business days
<i>Ehrlichia</i> spp. qPCR	\$31.50	2-3 business days
Influenza A (avian, canine, equine, swine) qRT-PCR	\$31.50	2-3 business days
<i>Haemoplasma</i> spp. qPCR	\$35.00	2-3 business days
<i>Leptospira</i> spp. qPCR	\$35.00	2-3 business days
<i>Mycoplasma</i> spp. and Sequencing	\$40.00	5-7 business days
Parvovirus (canine, feline) gel-based PCR	\$35.00	2-3 business days
Rotavirus group A (mammalian and avian) gel-based RT-PCR	\$35.00	3-4 business days
<i>Salmonella</i> spp. gel-based PCR	\$31.50	2-3 business days
<i>Toxoplasma gondii</i> gel-based PCR	\$31.50	2-3 business days
West Nile Virus (mammalian, avian) qRT-PCR	\$35.00	3-4 business days
Tick Panel (<i>Ehrlichia</i> spp., <i>Rickettsia</i> spp., <i>Anaplasma</i> spp. and <i>Borrelia burgdorferi</i>) – EDTA blood	\$70.00	3-4 business days

SEROLOGY

(1 ml serum, red top or separator tube shipped on ice)

Test Description	Price	Turn Around Time
<i>Anaplasma marginale</i> - ELISA (Enzyme Linked Immunosorbent Assay)	\$11.50	4-5 business days
<i>Anaplasma phagocytophilia</i> - IFA (Indirect Fluorescent Antibody)	\$25.00	3-4 business days
Aspergillosis - AGID (Agar Gel Immunodiffusion)	\$18.25	2 business days
Blastomycosis - AGID	\$18.25	2 business days
Blastomycosis and Histoplasmosis - AGID	\$33.50	2 business days
Bluetongue - ELISA	\$8.50	4-5 business days
<i>Borrelia burgdorferi</i> (Lyme Disease) - IFA	\$20.75	3-4 business days
Bovine Leukosis - ELISA	\$8.75	4-5 business days
Bovine Viral Diarrhea - SN (Serum Neutralization)	\$9.00	4-7 business days
<i>Brucella abortus</i> card (in conjunction with Pseudorabies)	\$0.00	1 business day

SEROLOGY (continued)

(1 ml serum, red top or separator tube shipped on ice)

Test Description	Price	Turn Around Time
<i>Brucella abortus</i> card (without Pseudorabies)	\$3.00	1 business day
<i>Brucella canis</i> – RSAT (Rapid Slide Agglutination Test)	\$16.50	2-3 business days
<i>Brucella ovis</i> (send to NVSL)	\$20.75	5-7 business days
Canine Distemper IgG - IFA	\$20.75	3-4 business days
Canine Distemper IgM - IFA	\$20.75	3-4 business days
Canine Distemper Parvo Titer - ELISA	\$16.00	1-2 business days
Canine Heartworm - ELISA See P.8 Knott's Test (heartworm microfilaria) - Clin Path: Hematology & Coagulation	\$8.50	2 business days
Canine parvovirus IgG - IFA	\$20.75	3-4 business days
Canine parvovirus IgM - IFA	\$20.75	3-4 business days
Coccidiomycosis - AGID	\$18.25	2 business days
<i>Cryptococcus</i> Antibody - tube agglutination	\$17.50	2 business days
<i>Cryptococcus</i> Antigen - LA (Latex Agglutination)	\$20.00	2 business days
<i>Ehrlichia canis</i> - IFA	\$25.00	3-4 business days
Epizootic Hemorrhagic Disease Virus (EHDV) - AGID	\$9.00	2 business days
Equine Infectious Anemia (EIA) - ELISA	\$8.25	1 business day
Equine Infectious Anemia (EIA) - AGID	\$8.25	2-3 business days
Equine Rhinopneumonitis - SN	\$8.75	4-7 business days
Equine Viral Arteritis - ELISA	\$19.00	4-7 business days
Feline Heartworm Antibody - Lateral Flow Immunoassay	\$20.50	2 business days
Feline Infectious Peritonitis (FIP) - IFA	\$25.25	3-4 business days
Feline Immunodeficiency Virus (FIV) Antibody and Feline Leukemia Virus (FELV) Antigen- Snap Test	\$36.00	2 business days
Feline Leukemia Virus (FLV) - IFA (bone marrow aspirate, whole blood, spleen)	\$27.50	1-3 business days
Histoplasmosis - AGID	\$18.25	1 business day
Infectious Bovine Rhinotracheitis (IBR) - SN	\$8.75	4-7 business days
Johne's - ELISA	\$13.00	4-5 business days
Leptospirosis - 6 Serovars - MA (Microscopic Agglutination)	\$15.00	4-5 business days
<i>Mycoplasma hyopneumoniae</i> - ELISA	\$6.75	4-5 business days
<i>Neospora</i> - ELISA	\$7.25	4-5 business days
Parainfluenza 3 (PI3) - SN	\$8.75	4-7 business days
Porcine Reproductive and Respiratory Syndrome (PRRS) - ELISA	\$7.00	4-5 business days
Pseudorabies - (PRV) - ELISA	\$6.50	2 business days

SEROLOGY (continued)

(1 ml serum, red top or separator tube shipped on ice)

Test Description	Price	Turn Around Time
<i>Rickettsia rickettsii</i> (Rocky Mountain Spotted Fever) - IFA	\$20.75	3-4 business days
Small Ruminant Lentivirus (CAE and OPP Detection) - ELISA	\$15.00	4-5 business days
Swine Influenza Virus - ELISA	\$12.00	4-5 business days
Tick Panel IgG - IFA: <i>A. phagocytophila</i> , <i>B. burgdorferi</i> , <i>E. canis</i> , and <i>R. rickettsii</i>	\$82.50	4-5 business days
Toxoplasmosis IgG - IFA (feline only)	\$24.25	4-5 business days
Toxoplasmosis IgM - IFA (feline only)	\$24.25	4-5 business days
Vesicular Stomatitis – Indiana - SN	\$11.00	4-7 business days
Vesicular Stomatitis – New Jersey - SN	\$11.00	4-7 business days
West Nile IgM (equine) - ELISA	\$18.00	4-5 business days

VIROLOGY

(Samples to be shipped on ice)

Test Description	Price	Turn Around Time
BVD Antigen Detection - serum or fresh ear notch	\$8.50	2-3 business days
Electron Microscopy (negative stain) - feces, lesion scrapes	\$27.25	4-7 business days
Virus Isolation for Feline Calicivirus in cell culture - necropsy samples, swabs, whole blood	\$31.75	10-14 business days
Virus Isolation for other viruses; call	\$31.75	10-14 business days

TOXICOLOGY

Test Description	Price	Turn Around Time
Aflatoxins in feedstuffs	\$53.00	7 business days
Aflatoxin M1 in milk and liver	\$78.75	7 business days
Ammonia (ocular fluid and frozen rumen contents for diagnosis of NPN/Ammonia toxicosis)	\$32.00	7 business days
Anions in water (chloride, nitrate, nitrite, phosphate and sulfate)	\$39.50	7 business days
Arsenic (urine, hair, liver, kidney and suspected source material; qualitative)	\$34.75	7 business days
Calcium (serum; ocular fluid)	\$24.75	7 business days
Cholinesterase activity (whole blood, brain)	\$28.25	2 business days
Copper (serum, liver and kidney)	\$24.75	7 business days
Cyanide/prussic acid (frozen rumen contents and frozen plant material; qualitative)	\$19.50	2 business days

TOXICOLOGY (continued)

Test Description	Price	Turn Around Time
Ergot alkaloids in feedstuffs	\$79.50	7-10 business days
Ergot/fescue alkaloids in feedstuffs	\$95.50	7-10 business days
Fumonisin B1 in feedstuffs	\$50.50	7 business days
GC/MS screen (stomach contents, rumen contents or source material; speak to Toxicology Section prior to submission; qualitative)	\$108.25	14 business days
Ionophore screen in feedstuffs (qualitative)	\$24.75	7 business days
Iron (serum and liver)	\$24.75	7 business days
Lead in whole blood (heparinized or EDTA whole blood)	\$29.25	2 business day
Lead in tissue or source material (liver, kidney or source material)	\$21.00	7 business days
Magnesium (serum and ocular fluid)	\$21.00	7 business days
Mycotoxin screen in feedstuffs (aflatoxin B1, ochratoxin A, vomitoxin, zearalenone)	\$77.25	7 business days
Nitrate spot test (qualitative test on cornstalks and sorghum-sudan)	\$19.00	2 business days
Nitrate in feedstuffs	\$28.50	7 business days
Nitrate in ocular fluid	\$42.00	7 business days
Ochratoxin A in feedstuffs	\$53.00	7 business days
pH (rumen contents; no charge on submitted necropsy cases)	\$18.00	2 business days
Poisonous plant and animal identification	\$25.00	7 business days
Vitamin E (blood or serum)	\$24.75	7 business days
Vomitoxin in feedstuffs	\$53.00	7 business days
Zearalenone in feedstuffs	\$56.50	7 business days
Zinc (blood or serum in royal blue-topped trace element vacutainer tube, liver and kidney)	\$24.75	7 business days

DIRECTIONS FROM THE EAST

I-70 WEST to Columbia, take EXIT 128A, HWY 63 South. Take STADIUM BLVD EXIT. RIGHT on Stadium to the 4th stoplight, then RIGHT on COLLEGE AVE. to 2nd stoplight – ROLLINS ST. Go RIGHT on ROLLINS, turn RIGHT opposite WILLIAMS ST, onto E. CAMPUS LOOP into the parking lot, turn LEFT and go around the VET MED Conference Center and you will face the VMDL. Client parking is by the steps, across from the metered parking lot.

DIRECTIONS FROM THE WEST

HWY I-70 to Columbia, take EXIT 124 – STADIUM BLVD. Turn RIGHT on Stadium Blvd and go to the 13th stoplight – COLLEGE AVE. (when you see the stadium on the right, there's approximately 3 lights left.) LEFT on COLLEGE AVE. to the 2nd stoplight – ROLLINS ST. Go RIGHT on ROLLINS. Turn RIGHT opposite WILLIAMS ST, onto E. CAMPUS LOOP into the parking lot, turn LEFT and go around the VET MED Conference Center and you will face the VMDL. Client parking is by the steps, across from the metered parking lot.

DIRECTIONS FROM THE SPRINGFIELD/JOPLIN AREA

HWY 44 EAST to HWY 5 at Lebanon. NORTH on HWY 5 to Camdenton. HWY 54 EAST from Camdenton to Jefferson City
HWY 63 NORTH from Jefferson City to Columbia. Take STADIUM BLVD EXIT. Go LEFT on Stadium to the 4th stoplight – COLLEGE AVE. Go RIGHT on COLLEGE AVE. to the 2nd stoplight – ROLLINS ST. Go RIGHT on ROLLINS. Turn RIGHT opposite WILLIAMS ST, onto E. CAMPUS LOOP into the parking lot, turn LEFT and go around the VET MED Conference Center and you will face the VMDL. Client parking is by the steps, across from the metered parking lot.

DIRECTIONS FROM NORTH MISSOURI

Take HWY 63 SOUTH to Columbia, STADIUM BLVD EXIT. Turn RIGHT onto STADIUM. Take Stadium to the 4th STOPLIGHT – COLLEGE AVE. Turn RIGHT onto College Ave, Take College to the 2nd STOPLIGHT – ROLLINS ST. Go RIGHT on ROLLINS ST. Turn RIGHT opposite WILLIAMS ST, onto E. CAMPUS LOOP into the parking lot, turn LEFT and go around the VET MED Conference Center and you will face the VMDL. Client parking is by the steps, across from the metered parking lot.

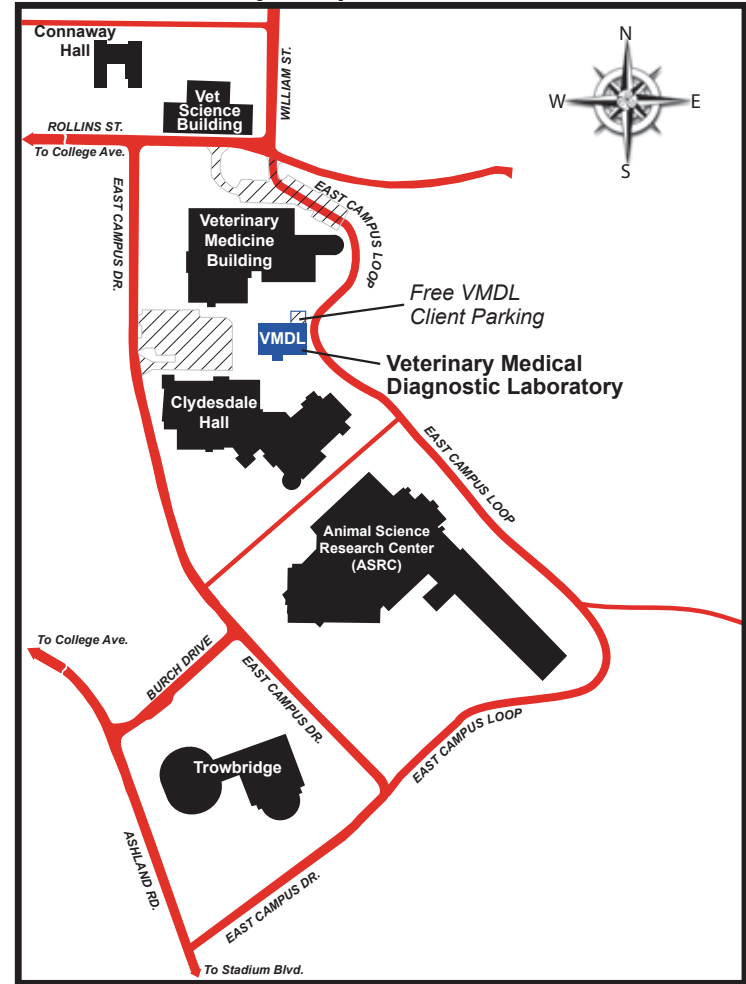
DIRECTIONS FROM JEFFERSON CITY AREA

HWY 63 NORTH from Jefferson City to Columbia. Take STADIUM BLVD EXIT. Go LEFT on Stadium to the 4th stoplight – COLLEGE AVE Go RIGHT on COLLEGE AVE to the 2nd stoplight – ROLLINS ST. RIGHT on ROLLINS Turn RIGHT opposite WILLIAMS ST, onto E. CAMPUS LOOP into the parking lot, turn LEFT and go around the VET MED Conference Center and you will face the VMDL. Client parking is by the steps, across from the metered parking lot.

SEE MAPS ON FOLLOWING PAGES



Detail of Veterinary Campus



**QUESTIONS:
Call our faculty
for a consultation.
1-800-862-8635**



Shuping Zhang
Director



Gayle Johnson
*Associate Director
and Pathology
Section Leader*



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*Bacteriology
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Tom Reilly
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Stan Casteel
Research Toxicology



George Rottinghaus
Toxicology