

Dr. Cora Gilroy wins Janet Pottie Murray Award for Educational Leadership

Dr. Cora Gilroy was presented with the 2018 Janet Pottie Murray Award for Educational Leadership on December 13, 2018. This prestigious university award was established in honor of Ms. Janet Pottie Murray, the mother of Dr. Shannon Murray, an English professor at UPEI. Dr. Murray noted that her mother, while not a teacher herself, celebrates and supports excellence and leadership in teaching. The purpose of the Janet Pottie Murray Award is to encourage excellence in teaching at the University of Prince Edward Island by acknowledging those teachers who exemplify such excellence and those who contribute more generally to the improvement of the quality of university teaching. Among her accomplishments in education, including being honored with previous awards, Dr. Gilroy guided significant revisions to second year and 4th year DVM teaching and student assessment.

Congratulations Dr. Gilroy!



Left to right: Drs. Shelley Burton (nominator), Cora Gilroy and Shannon Murray

Rita Saunders Retires From UPEI



Rita Saunders retired from UPEI on May 25, 2018, after 31 years of service. She started work at the Atlantic Veterinary College (AVC) in 1987 as Secretary in Diagnostic Services, later moving to other positions within the university. She was in the UPEI Registrar's Office when she accepted the appointment in the Department of Pathology and Microbiology as Chair's Secretary in October 2004. Rita served under 3 different department chairs, providing continuity and corporate memory of various processes. She ably handled the administration of a very diverse department that included faculty, staff, graduate students, residents, research associates and post-doctoral fellows. Her office was the hub of departmental activity. It was not unusual to see someone almost constantly at Rita's door and so it was quite impressive that she got so much work done in between!

Rita is an intuitive and gracious person with a wonderful sense of humor. In her role in the department, she was a facilitator and contact person for a wide range of visitors. Rita treated every visitor, ranging from visiting dignitaries to shy veterinary students, with kindness and respect. She was a listening board for concerns, she helped homesick or confused new graduate students in a motherly fashion, and she assisted faculty or staff with whatever they needed. She truly wore her heart on her sleeve, and even if she was busy or tired, she would put that aside and go the extra distance to help. Because of all of these wonderful traits, people were drawn to Rita. In a very real way, this contributed to the success of our department. Rita's actions positively impacted the recruitment and retention of key members of our department over the years, thus also contributing overall to the college. Rita's exceptional service was recognized by receiving the 2014 AVC Staff Merit Award.

Rita lives in Marshfield, PEI, with her husband Paul, enjoying her retirement to the fullest. She still goes to the swimming pool every day and has joined Seniors College which she enjoys immensely. Rita was the original administrative assistant when Seniors College was first started at UPEI in Extension and Summer Sessions. Rita and Paul have three children, Jocelyn, Nathan and Jessica and four grandchildren, Clara, Willa, Hudson and Liam Connor. They travel to Middle Sackville, Nova Scotia, to visit their oldest daughter and her family as often as they can and are lucky enough to have their other two children and their families close by.

We wish Rita the very best in her retirement!

Contributed by Dr. Fred Kibenge and Dr. Shelley Burton.

Photo: Dean Keefe and Ms. Rita Saunders at AVC Ice Cream Social, Summer of 2018.



Welcome to Pathology and Microbiology Dr. Russell Fraser



We welcome **Dr. Russell Fraser**, who started his tenure-track faculty position in the department on January 4, 2019.

Russell says he is excited to be the newest member of the Department of Pathology and Microbiology. He was born and raised in Montreal, and left to obtain his DVM degree at the Ontario Veterinary College, University of Guelph in 2008. Following a road trip to the west coast, he couldn't resist the call of the old growth forests of B.C., and after graduation, he left Ontario and practiced small animal medicine in the small coastal town of Sechelt on the Sunshine Coast. He returned home to Montreal after a year, practicing in a local clinic for another 2 years, until deciding to pursue a Master of Science in One Health at the Royal (Dick) School of Veterinary Studies in Edinburgh, Scotland. His time in Scotland rekindled an interest in pathology, and he was fortunate to be accepted into a combined PhD/residency program in anatomic pathology at the OVC. Russell's graduate work involved bioinformatics and the role of genetics in the susceptibility of livestock to infectious diseases. In 2018, he successfully defended his thesis and obtained Diplomate status with the ACVP. Russell says he is fortunate to find a job here at UPEI. His partner, Sonya, and their son, Felix (1.5 years old), are happy and excited to be embarking on the latest stage of their lives, and are looking forward to making their home here in Charlottetown. His office is 414N, and his research laboratory is within the Fish Health Experimental Laboratory 309N. Please stop by to say hello and make him feel welcome!

2019 AVC Research Fund Competition Winners



Dr. Mark Fast (Principle Investigator); Co-Principal Investigators are Dr. Spencer Greenwood and **Kami Harris**: AVC Research Fund, Basic Science pool, \$15,000 to project entitled, "The impact of genetic diversity of the Lyme-causing bacteria *Borrelia burgdorferi* in New Brunswick ticks on serological response of Lyme diagnosed individuals."

The spirochete bacterium *Borrelia burgdorferi*, transmitted by the deer tick *Ixodes scapularis*, is the causative agent of Lyme disease. Current serological testing is based on a single strain (B31) and therefore does not account for the genetic diversity (genotypes) that exist within the *B. burgdorferi* complex. This diversity severely compromises current testing and therefore limits potential diagnoses and prognoses of patients. For the current proposal, genetic information on 17 genotypes present in New Brunswick will be used to identify and manufacture 10-15 alternate peptide epitopes for incorporation into a Western blot assay, along with the original B31 epitopes, to evaluate the serological response of 20 healthy and 20 Lyme diagnosed individuals. This is a proof of concept proposal and the hopes are that one or more of these local genotype epitopes will exhibit a stronger response among age and gender-matched Lyme diagnosed individuals, indicating the possible presence of non-B31 genotype as the causative agent. This study will help determine if the narrow specificity of existing serology based on B31 is a possible explanation for indiscriminate test results. The AVC internal grant supports Kami Harris' stipend as well as consumable costs to carry out this work.

2019 AVC Research Fund Competition Winners Continued



Dr. Juan Carlos Rodriguez, Co-Principal Investigator; Principal Investigator is Dr. Bronwyn Crane: AVC Research Fund, Clinical/Applied pool, \$14,403 to project entitled, “Investigating the risk factors associated with intravaginal progesterone releasing devices and *in vivo* embryo recovery and transfer for *Ureaplasma diversum* infection in cattle.”



Dr. Noel Clancey, Co-Principal Investigator; Principal Investigator is Dr. Michelle Evason and Co-Principal Investigators are Drs. Jason Stull and Scott Weese: Clinical/Applied pool, \$5,000 (plus \$10,000 from the 2019 Companion Animal Trust Fund) to project entitled, “Canine Vector-borne Pathogen and Leptospirosis Surveillance in Canada: Expansion of The Canadian K9 Lifetime study.”

Graduate Student Awards



Congratulations to **Dr. Walaa Nasry**, PhD student in Pathology and Microbiology, who was the recipient of the Diane Keys Memorial Bursary. The bursary is awarded to a deserving applicant who is registered full time at UPEI, and who demonstrates an exemplary commitment to women’s equality goals (through personal actions, volunteer or paid work, or course of study); or is pursuing training or education in a field which is not traditional for women and where women are under-represented. Walaa is supervised by **Dr. Chelsea Martin**.

Congratulations Dr. Nasry!

Photo: PEI Advisory Council on the Status of Women Chairperson Yvonne Deagle with Dr. Walaa Nasry.



Congratulations to **Enooaq Sudlovenick**, graduate student in Pathology and Microbiology, who received the Captain Nichola K.S. Goddard Scholarship on November 2018. Enoo is an MSc candidate co-supervised by **Drs. Megan Jones, Shannon Martinson** and Susan Kutz (University of Calgary).

Congratulations Enoo!

Photo left to right Tim Goddard, Enoo Sudlovenick and Sally Goddard.

Pathology and Microbiology Department Welcomes New Graduate Students

Shuchen Yan, MSc student co-supervised by **Dr. Fred Kibenge** and Dr. Huimin Xu (CFIA)

Shuchen Yan, who likes to be referred to as Elena, completed her Bachelor of Science (Honours) in Biochemistry from Queen's University in 2018. As an undergraduate student, Elena worked as a part-time research assistant in an organic chemistry laboratory for synthetic chemistry for a year and participated in an NSERC Discovery Frontiers project for engineering nickel catalysts for electrochemical clean energy. In the summer of 2017, Elena was hired as a summer project student and worked for four months in the Technology Development section of the Canadian Food Inspection Agency (CFIA) Charlottetown laboratory. This job provided her with the opportunity to apply molecular and genomic methods for the detection and identification of potato viruses. Elena was accepted to the Master of Science program in the Department of Pathology and Microbiology in 2018. Her research will focus primarily on the development and validation of multiplex PCR based diagnostic procedures for detecting eight viruses and one viroid in potato nuclear stock materials that targeted under the seed potato certification program of the CFIA.



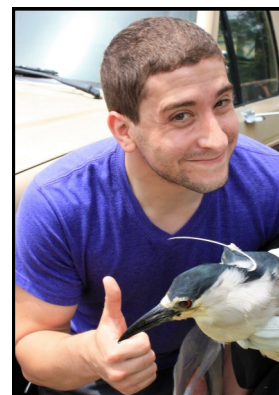
Kathleen Parrish, MSc student supervised by **Dr. Mark Fast**

Kathleen Parrish graduated from Memorial University of Newfoundland with a Bachelor of Science (Honours) in Biochemistry in April 2017. Her research was completed with Dr. Matthew Rise at the Ocean Sciences Centre, with partial funding from Research and Development Corporation Ocean Industries Student Research Awards. Following the completion of her undergraduate degree, Kathleen worked as a technician in Dr. Rise's genomics laboratory from September 2017 to August 2018, at which time she began an MSc program under the supervision of **Dr. Mark Fast**.



Jonathon Perreira, MSc student supervised by **Dr. Mark Fast**

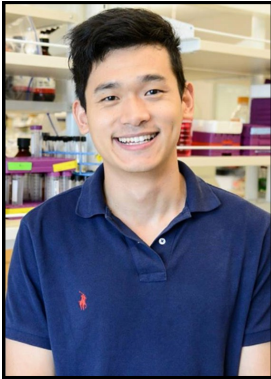
Jonathon Perreira is an international graduate student from the US conducting research in the Department of Pathology and Microbiology. While living in California, he conducted research and graduated from the University of California-Davis, accumulating a diverse scientific background in evolutionary biology, animal behavior, and engineering. His undergraduate research included assisting on a two-year post-doctoral project examining the effects of anthropogenic noise on red-winged blackbirds through acoustic spectrogram analysis. Jonathon's ongoing research is done within **Dr. Mark Fast's** laboratory on host-pathogen-climate interactions with an emphasis on *Renibacterium salmoninarum*—the causative agent of bacterial kidney disease in Atlantic salmon. His ongoing project is to examine how the



interplay between host and pathogen are affected by changing climate factors, and if these factors can be harnessed as novel control methods for disease.

Pathology and Microbiology Welcomes New Post Doctoral Fellow

Dr. Colin Cai, Post-Doctoral Fellow working with **Dr. Mark Fast**



Dr. Wenlong (Colin) Cai joined the Department of Pathology and Microbiology in January 2019 as a post-doctoral fellow in **Dr. Mark Fast's** laboratory. Colin moved from Auburn, Alabama, where he received his doctoral and master's degrees in fisheries from Auburn University. Originally from China, he also holds a joint master's degree in Veterinary Medicine from Shanghai Ocean University (Shanghai, China), and a bachelor's degree in Biotechnology from Shandong University of Technology (Shandong, China). Fish disease continues to be a big challenge for the salmon aquaculture industry. His current research is looking at the Atlantic salmon immune response to multiple infectious organisms (co-infection) and the potentials of functional feeds to manipulate fish immune systems. He and his wife just had a baby girl in December. In his spare time, he likes spending time with his family, going to the gym, fishing, and hiking with his dog.

PhD Comprehensive Examination



Congratulations to **Dylan Michaud** who successfully passed his PhD Comprehensive Examination on December 12, 2018. Dylan is supervised by **Dr. Mark Fast**. **Dr. Melanie Buote** chaired the PhD Comprehensive Examination Committee.

Congratulations Dylan!

ACVP Certifications



We are pleased to announce that a past resident and graduate student in clinical pathology, **Dr. Dania Villarnovo**, passed the American College of Veterinary Pathologists (ACVP) Certifying Examination and so is now a Diplomate of the ACVP in Clinical Pathology. Dr. Villarnovo was co-supervised by **Drs. Shelley Burton and Barbara Horney**.

We are also pleased to announce that **Dr. Vikas Kulshreshtha**, a former post-doctoral fellow working in **Dr. Fred Kibenge's** laboratory, also passed the ACVP Certifying Examination and now is also a Diplomate of the ACVP in Anatomic Pathology. (No photo available).

Photo: Dr. Dania Villarnovo

Pathology Training of Large Animal Residents

The large animal clinical residents, including Drs. Jacklyn Kaufman (Surgery), Amanda Butler (Internal Medicine) and Lisa McMillan (Equine Ambulatory) from the Department of Health Management enjoyed an intensive week of pathology training from December 10-14, 2018. The clinical pathology sessions were led by **Drs. Shelley Burton, Cora Gilroy and Noel Clancey.**

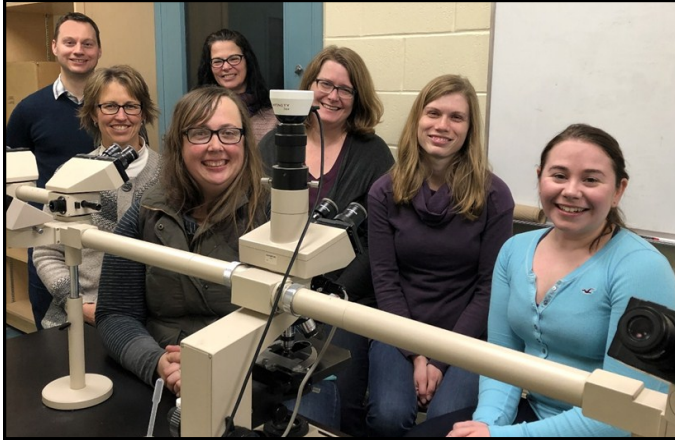
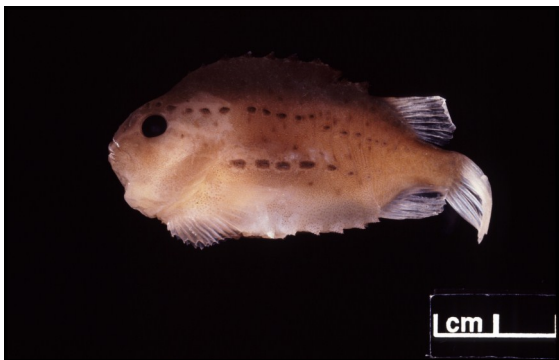


Photo left to right: Drs. Noel Clancey, Cora Gilroy, Amanda Butler (front), Andrea Bourque (back), Chelsea Martin, Lisa McMillan and Jacklyn Kaufman. Missing from photo: Drs. Shelley Burton, Shannon Martinson and Melanie Buote.

Anatomic pathology training was provided by **Drs. Andrea Bourque, Melanie Buote, Shannon Martinson and Chelsea Martin.** This week was developed to partly meet the requirement for time spent with American College of Veterinary Pathologists (ACVP) boarded pathologists in residency programs accredited by the American College of Veterinary Internal Medicine (ACVIM) and the American College of Veterinary Surgery (ACVS).

Diseases of a Cleaner Fish



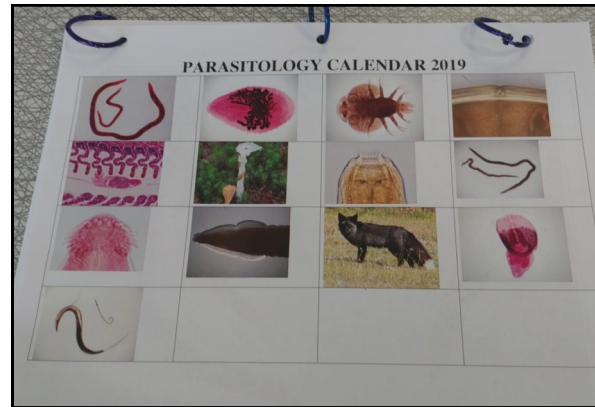
A recent editorial by **Dr. Dave Speare** in the February 2019 issue of the Journal of Fish Diseases provides an integrated review of current research of diseases of wrasse and lumpfish (see figure) being used in the salmon aquaculture industry to control salmon lice numbers. Knowledge gaps, future research directions, and sustainability issues affecting production are highlighted. This alternative approach to salmon lice control is being put in place around the world, but sustainable production is proving difficult due to various disease issues arising in these fish during production

and also during deployment in salmon cages. To provide a useful source of the most recent international research, the Journal of Fish Diseases (edited by Dr. Speare) has released a special issue of 15 peer-reviewed articles from around the world touching on key infectious and non-infectious conditions arising in this emerging and novel aquaculture practice. As an interesting and historical connection to AVC's graduate program, a previous pathology resident (Dr. Julia Mullins, currently a fish health researcher with Skretting Aquaculture Research Centre in Stavanger, Norway) was the first to publish a paper identifying a disease condition in aquaculture-raised lumpfish. The microsporidian which she discovered has emerged as a challenging problem in cleaner fish production facilities. See the article in December 2018 edition of the Journal of Fish Diseases-<https://onlinelibrary.wiley.com/doi/full/10.1111/jfd.12937>.

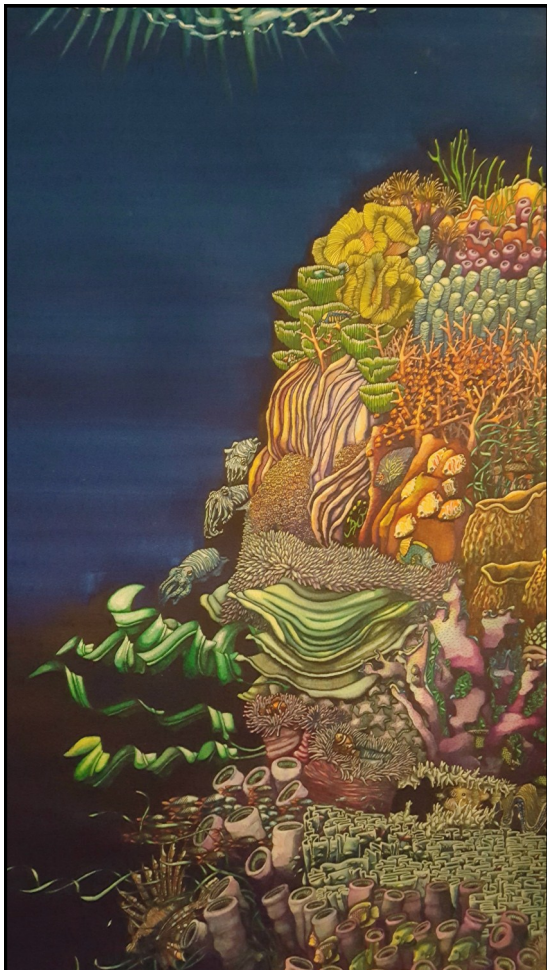
Pathology and Microbiology Faculty and Staff Display Their Artistic Talents at the AVC Art Show

The Department of Pathology and Microbiology was well represented at this year's annual AVC Art Show and silent auction held in the AVC Learning Commons on February 12, 2019. Some faculty and staff members of Pathology and Microbiology showed off their artistic abilities from photography and graphic design, to drawing, acrylic and watercolor paintings.

The following are some examples of artistic talents submitted for display at this year's show. Enjoy!



Dr. Gary Conboy, displayed his drawing skills in his rendition of a skunk and he also designed a 12-month parasitology calendar.



Dr. Laura Bourque, Wildlife Pathologist with the Canadian Wildlife Health Cooperative, Pathology and Microbiology, and talented artist, submitted her watercolor painting entitled, "Great Barrier Reef."

Pathology and Microbiology Faculty and Staff Display Their Artistic Talents at the AVC Art Show continued



Ingrid MacLeod, Administrative Assistant with Pathology and Microbiology and talented artist, displayed her watercolor and acrylic paintings of a sunflower, daisies, lupins and seascape.



Jordi Segers, Bat White Nose Syndrome Program Coordinator of the Canadian Wildlife Health Cooperative and gifted photographer, displayed his talents in his photographs of wild horses in Iceland, parrots, foxes and bats.

Departments of Biomedical Sciences & Pathology and Microbiology
2019 Winter Seminar Series, Tuesdays, 3:30 pm
AVC Lecture Theatre B, 205N

| Date | Topic | Presenter(s) |
|--|---|---|
| March 12, 2019 | Analysis of structural proteins of Atlantic salmon bafinivirus, a coronavirus of fish | Ashley McKibbon Pathology and Microbiology |
| March 12, 2019 | Natural Product Discovery from Bahamian Actinobacteria | Vernon Ptycia-Lamky Biomedical Sciences |
| March 19, 2019 | Investigating Novel Transmission Routes of the Canid Metastrongylids <i>Angiostrongylus vasorum</i> and <i>Crenosoma vulpis</i> | Will Robbins Biomedical Sciences |
| March 26, 2019 | Investigations into two separate approaches for microbial natural product discovery: <i>in situ</i> bacterial isolation and fungal co-culture | Logan MacIntyre Biomedical Sciences |
| April 2, 2019 | Antimicrobial Resistance | Matt Saab Diagnostic Services |
| Co-ordinators of the departmental seminar series are Drs. Melanie Buote and Andy Tasker. | | |

Publications

Mota-Rojas D, López A, Martínez-Burnes J, Muns R, Villanueva D, Mora-Medina P, González-Lozano M, Olmos A, Ramírez-Necoechea R. Is vitality assessment important in neonatal animals? CAB Reviews 2018;13:1-13.

Roldán Santiago P, Martínez-Burnes J, López A, Ramírez Necoechea R, Mota-Rojas D. Relationship of vitality and weight with the temperature of newborn piglets born to sows of different parity. Livestock Science 2018; 220:26-31.

Cobo-Ángel C, Jaramillo-Jaramillo AS, Lasso-Rojas LM, Aguilar-Marin SB, Sanchez J, Rodriguez-Lecompte JC, Ceballos-Márquez A, Zadoks RN. *Streptococcus agalactiae* is not always an obligate intramammary pathogen: Molecular epidemiology of GBS from milk, feces and environment in Colombian dairy herds. PLOS ONE <http://doi.org/10.1371/journal.pone.0208990>. December 10, 2018.

Ratanapob N, VanLeeuwen J, McKenna S, Wichtel M, Rodriguez-Lecompte JC, Menzies P, Wichtel J. Evaluation of the Precision Xtra meter for monitoring blood β -hydroxybutyrate concentrations in late-gestation ewes. Journal of Veterinary Diagnostic Investigation 1-6 <https://journals.sagepub.com/doi/full/10.1177/1040638718819688>; December 12, 2018.

Barker SE, Bricknell IR, Covello J, Purcell S, Fast MD, Wolters W, Bouchard DA. Sea Lice, *Lepeophtheirus salmonis* (Krøyer 1837), infected Atlantic salmon (*Salmo salar* L.) are more susceptible to infectious salmon anemia virus. PLOS ONE 2019;14:1 e0209178. <http://doi.org/10.1371/journal.pone.0209178>.

Whyte SK, Poley JD, Mueller A, Van Iderstine C, Fitzpatrick KE, Purcell SI, Koop BF, Johnson SC, Wadsworth S, Fast MD. Avermectin treatment for *Lepeophtheirus salmonis*: Impacts on host (*Salmo salar*) and parasite immunophysiology. Aquaculture 2019;501:488-501 <https://doi.org/10.1016/j.aquaculture.2018.10.036>.

Kibenge FSB. Emerging viruses in aquaculture. Current Opinion in Virology 2019; 34: 97-103.

Braden LM, Whyte SK, Brown AB, Van Iderstine C, Letendre C, Groman D, Lewis J, Purcell S, Hori T, Fast MD. Vaccine – Induced Protection Against Furunculosis Involves Pre-emptive Priming of Humoral Immunity in Arctic Charr. Frontiers in Immunology 2019; Volume10: Article 120. Doi: 10.3389/fimmu.2019.00120.

Speare DJ. Cleaner Fish Biology and Aquaculture Applications. Journal of Fish Diseases 2019; 42:157. DOI: 10.1111/jfd.12936.

Speare DJ. Cleaner fish diseases. Journal of Fish Diseases 2019;42:155-156. DOI:10.1111/jfd.12937. wileyonlinelibrary.com/journal/jfd.

Gomez DE, Rodriguez-Lecompte JC, Lofstedt J, Arroyo LG, Nino-Fong R, McClure JT. Detection of endotoxin in plasma of hospitalized diarrheic calves. Journal of Veterinary Emergency and Critical Care. 2019;1-7. DOI:10.1111/vec.12815.

Jones EB, Amman BR, Sealy TK, Uebelhoefer LS, Schuh AJ, Flietstra T, Bird BH, Coleman-McCray JAD, Zaki SR, Nichol ST, Towner JS. Clinical, Histopathologic, and Immunohistochemical Characterization of Experimental Marburg Virus Infection in A Natural Reservoir Host, the Egyptian Rousette Bat (*Rousettus aegyptiacus*). Viruses 2019;11:214. Doi:10.3390/v11030214. WWW.mdpi.com/journal/viruses.

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