

Dr. Shannon Martinson Receives Promotion



Congratulations to **Dr. Shannon Martinson** who has been promoted to Associate Professor in the Department of Pathology and Microbiology effective July 1, 2020.

Congratulations Dr. Martinson!

Dr. Dave Speare Re-appointed Editor-in-Chief of the Journal of Fish Diseases



Congratulations to **Dr. David Speare** who was re-appointed for a 3 year term as Editor-in-Chief of the Journal of Fish Diseases. The journal, supported by an appointed 25 member international editorial advisory board, is published by Wiley-Blackwell (London, England) and publishes over 250 papers per year. The journal is globally ranked in the top 20 of veterinary science journals, and is the leading peer reviewed forum, based on impact factor, for diseases of aquatic species with a particular focus on diseases in aquaculture.

Congratulations Dr. Speare!

Dr. Cora Gilroy Appointed to the Board of VEDP



Congratulations to **Dr. Cora Gilroy** who became a review editor on the Editorial Board of Veterinary Experimental and Diagnostic Pathology (VEDP), effective April 2020. Dr. Gilroy will be working as a review editor in the specialty section of Frontiers in Veterinary Science.

Congratulations Dr. Gilroy!

Dr. Mark Fast Receives New Funding



The Ocean Frontier Institute is a transnational hub for ocean research, bringing together experts from both sides of the North Atlantic to explore the sustainable development of the vast resources of the world's ocean. Together with Dr. Matt Rise, Dr. Mark Fast has been awarded \$350,000. Under the Phase 2 funding announced earlier this year, the 'One Ocean Health' initiative (lead by **Dr. Fast**) was awarded over \$1.2 M in funding in collaboration with Dalhousie University to better understand and manage environmental and animal

health threatened by climate change in order to sustainably grow fisheries and aquaculture and support coastal communities in the North Atlantic. These projects range from understanding the impacts of epizootic shell disease and recycling fisheries/aquaculture by-products, to reducing usage of antibiotic use in aquaculture.

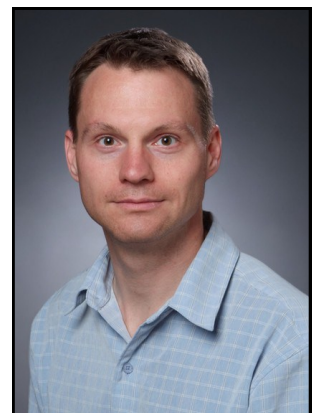


Dr. Mark Fast says one of the focuses of their study will be to see how pathogens spread through the ocean. The One Ocean Health project will look at the connection between ocean, marine animal and human health. Some of the focus will be on environmental impacts on ocean-sourced food, how pathogens spread and antimicrobial use in ocean food-farming. The investigators are also looking at how byproducts like shells could be used as a polymer instead of some kinds of plastic. "With aquaculture continuously increasing and with fisheries pretty much being on a plateau for a couple of decades now, we need to understand how better to sustainably use both of these resources for human consumption but then also byproducts from these resources," Dr. Fast notes.

Drs. Cora Gilroy and Noel Clancey Receive New Funding



Congratulations to **Drs. Cora Gilroy and Noel Clancey** (co-primary investigators) for their recent success in being awarded \$9000 as a grant from the 2020 AVC Companion Animal Trust Fund (CATF). This grant has been awarded to fund their project entitled, "Impact on white blood cell preservation with the addition of bovine serum albumin to K₃-EDTA whole blood samples". This study will be led by clinical pathology resident and MVSc graduate student, **Dr. Brodie Reinhart**. Co-investigators are **Dr. Shelley Burton**, Dr. Jason Stull (Department of Veterinary Preventive Medicine, Ohio State University College of Veterinary Medicine and Adjunct Professor Department of Health Management, AVC) and Ms. Nicole Bishop (Diagnostic Services).



Dr. Anne Muckle Retires from UPEI



Dr. Anne Muckle received her DVM from the Ontario Veterinary College where she also completed a MSc and a PhD in Veterinary Microbiology and Immunology. Anne has been awarded several postdoctoral fellowships, including one from the Institut Pasteur in Paris where she, and her then young family, moved to spend a year working in France. On returning to Canada, Anne then served as the head of the OIE Salmonellosis reference laboratory (where she was an OIE designated expert in Salmonella) in the Laboratory for Foodborne Zoonoses with the Public Health Agency of Canada in Guelph. From there, Anne came to the AVC in 2007, first as the Director of Diagnostic Services and clinical bacteriologist, and then moving to a faculty position in the department of Pathology and Microbiology as a clinical bacteriologist. In her time at the AVC, Anne has proven to be a valued, generous, knowledgeable, collaborator and team player in our department. Her tireless efforts to constantly improve her own teaching skills over the years have led students to nominate her for several awards, including the Students of the American Veterinary Medical Association (SAVMA)

Community Outreach Excellence Award which she was awarded in 2016. She has always been very empathetic to the needs of her students and has for many years mentored American veterinary students, providing them with a hearty meal on American Thanksgiving when they are away from their families. Anne and her husband, Mark, have 3 grown children and a small hobby farm. Anne has always had a deep love of horses, poetry and is a talented musician. She has recently resumed playing the piano and has picked up the mandolin. She is looking forward to being able to devote more time to music in her retirement. If her husband has any say in it, she may be the next hottest bluegrass performer to grace Island stages! Happy retirement Anne, you will be greatly missed. We wish you a fun-filled retirement!

Allan MacKenzie Retires from UPEI

Allan Mackenzie has worked in the Department of Pathology and Microbiology since 1989. He had numerous roles integral to the success of the clinical pathology section and beyond. Allan was instrumental in the teaching of clinical pathology 2nd year, 4th year and graduate courses. He had other roles too numerous to count, but they included preparing the Diagnostic Services newsletter, providing statistical evaluations, ensuring biosafety protocols were met and preparing teaching images. Allan also served in a variety of volunteer roles, including chairing the UPEI Biosafety Committee. He was deservedly honored with the AVC Staff Merit Award in 2010.

Allan has been a strong force in the success of graduate students in both clinical pathology and other disciplines. He truly excelled in mentoring them, sharing his love of research and serving as a role model for quality laboratory performance. While always helpful, he pushed them to grow and didn't always provide an easy path. When they ask him what they should do next with their research, he always countered with, "well, what do you think you should do next?"



Allan's professionalism and rigor in handling laboratory situations was an inspiration to others. He never cut corners and always demanded the most appropriate and correct route, whether it involved reagent preparation, test validation or laboratory safety.

Allan is a gracious person who steadfastly, quietly and superbly performed his work for 31 years. We will miss not only his skills but his work ethic, sense of humor and kindness to students, fellow staff and faculty. Allan plans to spend his well-earned retirement enjoying camping and gardening. We wish him the very best!

Photo: L-R **Allan MacKenzie** was presented by **Dr. Shelley Burton** with the AVC Staff Merit Award at the AVC Summer Social in 2010.

Dr. Fred Kibenge Publishes His Second Book



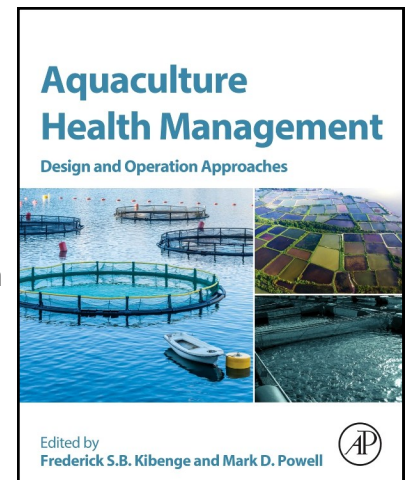
Congratulations to **Dr. Frederick Kibenge**, Chair of the Department of Pathology and Microbiology at the AVC, on the publication of his second book, *Aquaculture Health Management: Design and Operation Approaches*, co-edited by Dr. Mark Powell, CEO of Marine Holmen RAS Lab AS and Adjunct Professor of Fish Pathology with the Department of Biological Sciences at the University of Bergen, Norway.

At its very conceptualization, this book was intended to provide a guide to those interested in the management of aquatic animal health in aquaculture. It was to give a guide to veterinarians, fish health biologists, aquaculturists, and researchers alike. The book is intended to reach as broad an audience as possible and provide a volume that will provide insight but also ignite discussion about further practice improvement and

tackling ongoing challenges to produce ethically farmed fish and shellfish.

This book represents the first comprehensive approach to understanding overall aquatic animal health management, examining chapters relating to the challenges of health management in aquaculture including biosecurity, the management of diseases (as opposed to health), the science of vaccinology and immunological principles, as well as examining the effects of the environment.

Published by Elsevier (Imprint: Academic Press), the book is now available on all the usual retail online outlets, as well as Elsevier.com (<https://www.elsevier.com/books/aquaculture-health-management/kibenge/978-0-12-813359-0>) in print and electronic format. It is also available in html and pdf format on Science Direct.



Pathology and Microbiology Welcomes New Editor, Dr. Russell Fraser



Pathology and Microbiology has a new editor for our bi-monthly department newsletter. **Dr. Russ Fraser**, the department's newest anatomic pathologist, is continuing his professional career development by learning the ins and outs of newsletter editing. He comes with no background in journalism or creative writing, but is usually a quick study and will endeavour to rise to the occasion. He is noted for his fierce red pen, his adherence to the Systeme Internationale, and his enjoyment of the Oxford comma. Russ recognizes the legacy left behind by Dr. Lopez, retiring editor, and is keen to ensure that the newsletter will continue to resonate with its readers.

Welcome aboard Dr. Fraser!

MSc Thesis Defense



Congratulations to **Ashley McKibbon**, who successfully defended her MSc thesis "Analysis of structural proteins of Atlantic salmon bafinivirus – a coronavirus of fish", on Thursday, May 21, 2020. Ashley's program was supervised by **Dr. Fred Kibenge**. The Supervisory Committee members were **Dr. Gary Conboy** (Chair), Dr. Joel Ross, and **Dr. Molly Kibenge**. On the Examination Committee were **Dr. Mark Fast** (Chair), **Dr. Juan Carlos Rodriguez**, **Dr. Gary Conboy**, Dr. Joel Ross, and **Dr. Fred Kibenge** (Supervisor).

Congratulations Ashley!

UPEI Faculty of Graduate Studies Award of Distinction



Congratulations to **Ennoyaq Sudlovenick** (MSc, 2020) who was awarded the UPEI Faculty of Graduate Studies Award of Distinction for the Faculty of Veterinary Medicine at the 2020 UPEI graduation. Enno was co-supervised by **Dr. Megan Jones** and **Dr. Shannon Martinson**, and her thesis was entitled, "A serological survey and Inuit Qaujimajatuqangit of Ringed seals (Nattiit) in Frobisher Bay, Nunavit." She is currently enrolled in a PhD program at the University of Manitoba.

Pathology and Microbiology Welcomes New Graduate Students



Pathology and Microbiology welcomes **Kylee Graham** (AVC Class of 2022) who started her MSc program on May 4, 2020. She is supervised by **Dr. Megan Jones**, and will be studying sarcoptic mange in red foxes in Prince Edward Island.

Kylee Graham is from a small area in Eastville, Nova Scotia, where she grew up on her parent's sheep farm. She graduated from Acadia University in 2014 for a Bachelor of Science with a double major in Biology (honours) and Psychology. She is going into her third year of the DVM program, and is the first at AVC to try a combined DVM and Phd program. In her spare time she enjoys reading, writing poetry, staying active, and advocating for social justice reform.



Pathology and Microbiology welcomes **Eyesun Fajei** who started her MSc program on May 4, 2020. She is supervised by **Dr. Mark Fast**.

Eyesun is from Iran where she studied as a DVM student in Tehran. Once she completed her studies, she decided to move to Canada and she applied for the MSc program at UPEI. The subject of her studies is yet to be determined.

Pathology and Microbiology Welcomes 2020 Summer Students

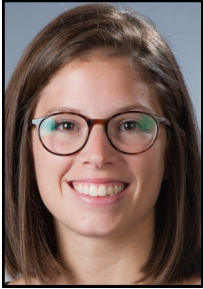


Courtney Fitzgerald, AVC Class of 2022, has been hired as the Summer Student Assistant in Wildlife Pathology, with **Dr. Megan Jones**. In addition to working with the Canadian Wildlife Health Cooperative (CWHC) database to help manage case submissions and special projects throughout the summer, she will be participating in the AVC Summer Research and Leadership program. Her project is entitled “Eucoleus-associated verminous pneumonia in red foxes,” and is undertaken in collaboration with **Dr. Gary Conboy and Dr. Laura Bourque**.



Rosalie O'Hara, AVC Class of 2022, has been hired as a VetSRA Summer Student Assistant within the department under the supervision of **Dr. Russell Fraser**.

Her project is entitled, “Artificial intelligence and Diagnostic Veterinary Histopathology.”



Courtney McRorie, AVC Class of 2022, has been hired as a VetSRA Summer Student Assistant within the department under the supervision of **Dr. Melanie Buote and Dr. Gary Conboy**.

Her project is entitled, “Trematodes of birds in Canada: A literature review.”



Andrew Cohen, AVC Class of 2022, has been hired as a VetSRA Summer Student Assistant within the department under the supervision of **Dr. Shelley Burton and Dr. Noel Clancey**.

His project is entitled, “Determining the effects of lipemia on veterinary blood samples.”



Miranda Kaser, AVC Class of 2022, has been hired as a USRA/ VetSRA Summer Assistant within the department under the supervision of **Dr. Gary Conboy** and Dr. Spencer Greenwood.

NSERC- Undergraduate Student Research Award Recipient Boehringer Ingelheim Veterinary Scholar Recipient.

Her project is entitled, “Literature review of the parasites of wild canids in North America.”



Raelyn McCurdy, AVC Class of 2023, has been hired as a VetSRA Summer Student Assistant within the department under the supervision of **Dr. Mark Fast**.

Her project is entitled, “Effects of dietary supplementation with omega-3 and 6 fatty acids and microalgae on the ability of teleost fish to resist infection with *Yersinia ruckeri*.”



Daniel Maguire, AVC Class of 2023, has been hired as a VetSRA Summer Student Assistant within the department under the supervision of **Dr. Mark Fast**.

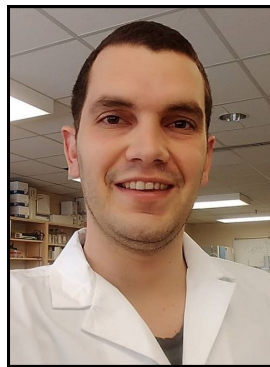
His project is entitled, "CpG treatment impacts on *Yersinia ruckeri* infection in Atlantic salmon."



Isabel (Siheng) Xie, AVC Class of 2023, has been hired as a VetSRA Summer Student Assistant within the department under the supervision of **Dr. Chelsea Martin**.

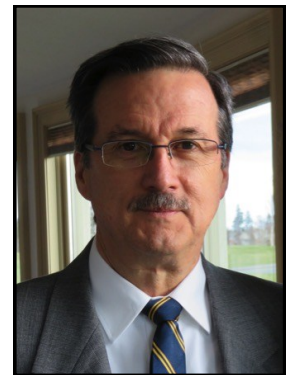
Her project is entitled, "A review on the effect of berry extracts on epidermal growth factor receptor expression and hypoxic response in feline oral squamous cell carcinoma."

Presentations



Dr. Santiago Uribe-Diaz, graduate student supervised by **Dr. Juan Carlos Rodriguez**, had the opportunity to present the research results of his research on the nutritional role of folic acid on the different immune mechanisms that can enhance the immune system. Santiago presented at the International Poultry Scientific Forum (IPSF), Atlanta, Georgia, from January 27-28, 2020.

At the same meeting, **Dr. Juan Carlos Rodriguez** presented, 'Pre- and post-challenge effects of essential oils (EO) on mRNA expression of antiviral and pro-inflammatory pathways genes on chicken macrophages infected with IBDV.' **Dr. Juan Carlos Rodriguez** was presenting the principles behind using nutritional intervention as a tool to modify the chicken immune system.



E-poster presentation at the American College of Veterinary Internal Medicine



Research led by **Dr. Gary A. Conboy** was presented as an e-poster at the 2020 American College of Veterinary Internal Medicine (ACVIM) online conference. The e-poster, titled "Use of an invitro larval motility assay evaluating antihelmintic efficacy against canine and feline metastrongyloids" was presented by Dr. Daniela Bedenice; **Haifaa A. Mahjoub**, Dr. Henryik Stryhn, Jenny Yu, and Dr. Spencer J. Greenwood were co-authors.



Dr. Juan Carlos Rodriguez-Lecompte Invited to Speak on COVID-19



The unprecedented global emergency generated by COVID-19 led the ELANCO company to wonder what the status of coronaviruses in animals is (from farms and pets) and their comparison with the impact on humans. The animal health industry accumulates extensive knowledge about these viruses, diseases, and the vaccines that combat them. Therefore, ELANCO invited to the professionals involved in the animal industry and companion animal to update their knowledge on this topic and to inform them about the projections on new and re-emerging viruses. **Dr. Juan Carlos Rodriguez-Lecompte** was the key speaker in the cycle of conferences (Latino America, North America and Europe) online webinar as a world-class expert in immunology. His conference was entitled, "Coronavirus: Animal immune response and protective role of vaccines."

Protecting bats against SARS-CoV-2



The Canadian Wildlife Health Cooperative (CWHC) national bat white-nose syndrome program coordinator, **Jordi Segers**, is based out of the Atlantic Veterinary College. While Jordi's role has focused predominantly on mitigating risks to bats associated with the fungal disease white-nose syndrome (WNS), this role has evolved to address other health concerns to Canadian bats. Due to WNS, three Canadian bat species were listed as endangered under the Species at Risk Act. Susceptibility of many wildlife species to SARS-CoV-2 is not known. Due to the endangered status of many Canadian bat species, potential risk of bats becoming infected with SARS-CoV-2 had to be considered. Jordi coordinated a small panel of wildlife health experts, including wildlife pathologist **Dr. Megan Jones**, bat conservation technician **Tessa McBurney** from CWHC Atlantic, Parks Canada veterinarian and Pathology and Microbiology adjunct faculty member **Dr. Dave McRuer**, bat biologist Craig Willis from the University of Winnipeg, and virologist Vikram Misra from the University of Saskatchewan. The panel, in collaboration with Environment and Climate Canada's bat working group, developed a document outlining the principles for handling Canadian bats for wildlife research and rehabilitation. Due to the unknown potential effects of SARS-CoV-2 on bats, they recommended postponing any activities that require bat handling and were not imperative for bat conservation and management. This

and other guidance relating to wildlife management can be found on CWHC's COVID-19 website: <http://cwhc-rscf.ca/covid-19.php>

Submitted by Jordi Segers

Photo of little brown myotis by Jordi Segers

Project Used to Track Bats Expands to All 4 Atlantic Provinces



If you see a bat this summer, be sure to call the bat hotline. The hotline monitors the health of the bat population in the Atlantic region. Following a record number of calls in 2019, the Bat Hotline, a project set up in 2017 to monitor the health of the bat population in the Atlantic region, has expanded this year to include Nova Scotia and New Brunswick.

Tessa McBurney, Atlantic bat conservation project co-ordinator with the (CWHC) Canadian Wildlife Health Cooperative (Atlantic region) at the AVC, has recently explained the importance of the hotline to the CBC. The hotline provides an avenue for citizen scientists

to report bat sightings, helping researchers develop a comprehensive database that monitors the size and health of local bat populations. This information is critically important, as three of the bats found in Atlantic Canada (the little brown myotis, northern myotis, and tri-coloured bat) are endangered.

In addition to expanding the geographical scope of the hotline, McBurney has indicated that training will be offered to help people monitor bat populations in their own provinces.

The bat hotline can be reached at 1-833-434-BATS (2287).

Publications

Mahjoub HA, Murphy N, Mather PM, Greenwood SJ, **Conboy G**. Clinical crenosomosis in a black bear (*Ursus americanus*). <https://doi.org/10.1016/j.vprsr.2020.100380>.

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Braden LM, Monaghan SJ, **Fast MD**. Salmon immunological defence and interplay with the modulatory capabilities of its ectoparasite *Lepeophtheirus salmonis*. Parasite Immunology. 2020;00:e12731. <https://doi.org/10.1111/pim.12731>.

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For comments or suggestions for our newsletter, please contact: Dr. Fred Kibenge (kibenge@upei.ca) or

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Editor: Dr. Russell Fraser, Reviewer Dr. Shelley Burton.

Please don't print this newsletter unless you really need to!

