

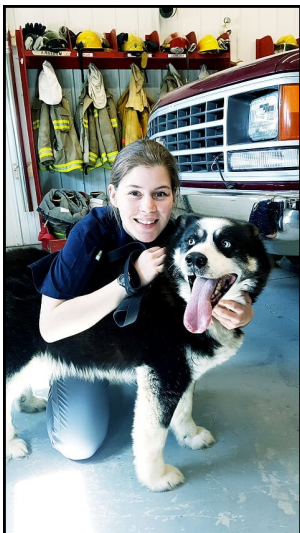
## 2019 Chinook Project Travel Report



In June 2019, the Chinook Project team travelled to northern Labrador to provide free veterinary services to two locations. Nain is the northernmost community in Labrador, and this was the fifth time the Chinook Project has visited this hamlet. Natuashish (moved from Davis Inlet in 2002) is one of the two Innu communities in Labrador. The Chinook project has visited this community three times in the past, the last visit being in 2015. Both communities have multiple positive rabies cases each year.

In addition, a canine distemper outbreak in Natuashish in 2018 affected the dog population greatly.

The team spent 4.5 clinic days in each location, and saw many animals for vaccinations, deworming and spay/neuter surgeries, as well as any other procedures such as dentistry and eye surgery. In all, approximately 150 medical appointments and 50 surgeries were performed.



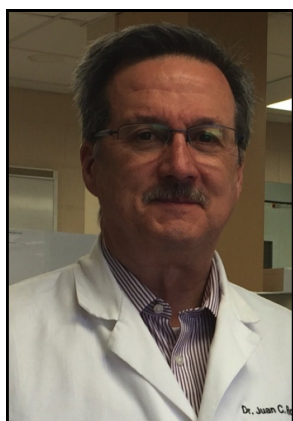
In Natuashish, members of the team visited the school to speak to youth about humane education topics and opportunities in animal sciences such as the Dr. Tim Ogilvie AVC Vet Camp. The veterinarians who travelled this year are mostly from AVC: Dr. Heather Gunn-McQuillan, Dr. Peter Foley and Dr. Mike West. Dr. Becky Jackson of Happy Valley-Goose Bay also attended for the first week of the trip. Five fourth-year veterinary students participated in the rotation: Bryan Welch, Ashley Kroyer, Heather Chandler, Veronica Ells, and Rachael Speare. More information about the Chinook Project can be found on Facebook and at [www.chinookproject.ca](http://www.chinookproject.ca)

## Incoming Interim Chair of Pathology and Microbiology



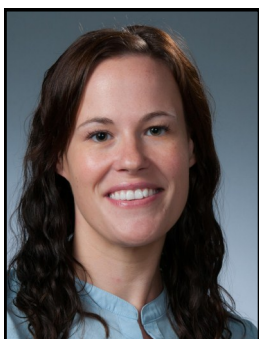
Congratulations and thanks are extended to **Dr. Mark Fast**. After receiving departmental faculty support, he has been appointed to serve as Interim Chair of the Department of Pathology and Microbiology from September 16 to December 31, 2019 during Dr. Fred Kibenge's sabbatical leave.

## Funding Success



**Dr. Juan Carlos Rodriguez-Lecompte** has been expanding his research program in antimicrobial alternatives. In May, the Canadian Poultry Research Council awarded to him and collaborators [Sharif S, (PI), Rodriguez-Lecompte, J.C. (CI) and 8 more (CI)] from 2018-2022-\$ 2,744.000 for their Poultry cluster: Innovations and stewardship in poultry production. Dr. Rodriguez will be conducting his research focus on the underlying mechanisms beneficial effects offered by commensal species of *Bacteroides thetaiotaomicron*. This work suggests that *Bacteroides* species stimulate chicken gut to produce antimicrobial peptides, for example angiogenins, that help maintain the intestinal integrity against invading pathogens.

## Project Report Defense



Congratulations to **Dr. Laura Buckland** who successfully defended her MVSc project report [Causes of mortality and pathologic findings in farmed mink in Atlantic Canada; a 12-year retrospective study] on September 6, 2019. Dr. Buckland is co-supervised by **Drs. Shannon Martinson** and **Paul Hanna**. **Dr. Andrea Bourque** chaired the Examination Committee.

Congratulations Laura!

## Thesis Defense



Congratulations to **Desmond Hammill** who successfully defended his MSc thesis [ A next-generation sequencing approach for the simultaneous detection of plant viruses for plant quarantine testing ], on July 9th, 2019. Desmond was supervised by Dr. Huimin Xu (co-supervisor), **Dr. Fred Kibenge** (co-supervisor), **Dr. Chelsea Martin** (chair).

Congratulations Desmond!





Congratulations to **Laura Carvalho** who successfully defended her MSc thesis [Immunological responses in Atlantic Salmon (*Salmo Salar*) to co-infections with sea lice (*Lepeophtheirus salmonis*)] on September 5, 2019. Laura is supervised by **Dr. Mark Fast**. **Dr Fred Kibenge** chaired the examination committee.

Congratulations, Laura!

## PhD Comprehensive Examination



Congratulations to **Dr. Walaa Nasry** who has successfully passed her PhD comprehensive examination on June 28, 2019. Dr. Nasry is supervised by **Dr. Chelsea Martin**. **Dr. Shelley Burton** chaired the examination committee.

Congratulations Walaa!

## American College of Veterinary Pathologists (ACVP) Certification



We are pleased to announce that our resident and graduate student in anatomic pathology, **Dr. Nicole Kaiser**, passed the American College of Veterinary Pathologists (ACVP) Certifying Examination and so is now a Diplomate of the ACVP in Anatomic Pathology. Dr. Kaiser was co-supervised by **Drs. Chelsea Martin and Shannon Martinson**.

Congratulations Nicole!

## Dean's Award of Excellence



Congratulations to **Darlene Weeks**, Canadian Wildlife Health Corporation Senior Wildlife Technician in Pathology and Microbiology, who received a Dean's Award of Excellence at the AVC annual ice cream social on June 27, 2019. Darlene was nominated by **Drs. Pierre Yves Daoust and Scott McBurney**.

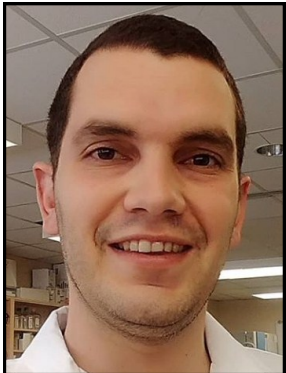
L to R: Dr. Pierre Yves Daoust and Darlene Weeks

## Pathology and Microbiology Department Welcomes New Graduate Students

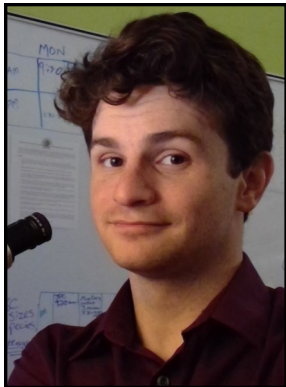
**Dr. Juan Carlos Rodriguez-Lecompte's** laboratory has two new graduate students: Drs. Santiago Uribe and Daniela Losada. Both students are co-supervised by Drs. Marya Ahmed in the Department of Chemistry and Dr. Rodriguez-Lecompte. These students will be working in nutritional immuno-epigenetic and antimicrobial peptides to enhance the gut immunity.



Welcome new graduate student **Dr. Daniela Losada** to Pathology and Microbiology. Daniela is doing an MSc in Molecular and Macromolecular Sciences at the Faculty of Science, and is co-supervised by Drs. Juan Carlos Rodriguez-Lecompte and Marya Ahmed, from the Department of Pathology and Microbiology at the AVC, and the Department of Chemistry respectively. Daniela comes from Bogota, Colombia, where she graduated as a veterinarian from the Faculty of Veterinary Medicine and Zootechny at the National University of Colombia. Daniela has undergraduate experience in wildlife medicine, volunteering and performing externships at wildlife rehabilitation and zoos in Colombia and Canada. The Master of Science program represents for Daniela a fundamental complement to her undergraduate studies in order to acquire greater abilities in the immunologic research field, providing her with tools for understanding more about wildlife species in the future.



Welcome new graduate student **Dr. Santiago Uribe Diaz** to Pathology and Microbiology. Santiago is doing an MSc in Molecular and Macromolecular sciences at the Faculty of Science in the Chemistry department. He is co-supervised by **Dr. Juan Carlos Rodriguez-Lecompte** and Dr. Marya Ahmed at the Chemistry department. Santiago comes from Bucaramanga, Colombia where he graduated with a DVM at the University of Caldas in the faculty of Agro-Livestock Sciences. After graduation he worked for four years in the poultry industry in Colombia. He has a particular interest in immunology, nutrition, and their use in poultry production, as well as in the research field.



Welcome new graduate student **Dr. Brodie Reinhart** to Pathology and Microbiology. Brodie is doing a combined MVSc / Residency in Clinical Pathology and is supervised by **Drs. Cora Gilroy and Noel Clancey**. Dr. Reinhart hails from Quispamsis, NB, where he received his BSc in General Biology from the University of New Brunswick in Saint John before attending the AVC to obtain his DVM in 2015. Dr. Reinhart worked for two years as a small animal practitioner in Sydney, NS, followed by two years of emergency medicine in Fredericton, NB, before returning to the AVC. Dr. Reinhart has always had a special interest in diagnostic interpretation along with exotic/wildlife species and is looking forward to beginning down this exciting career path.



Welcome new graduate student **Dr. Nicolas Decelles** to Pathology and Microbiology. Nicolas is doing a combined MVSc/ Residency in Anatomic Pathology and is supervised by **Drs. Megan Jones and Melanie Buote**. Dr. Decelles hails from Saint-Fulgence, Quebec, where he completed a diploma in Natural Sciences at the Cégep de Chicoutimi. He then completed an undergraduate degree in Veterinary Medicine at the Faculté de Médecine Vétérinaire at the University of Montreal. Nicolas has a keen interest in anatomic pathology and has been involved in research opportunities at the University of Illinois, Texas A & M University, Cornell University, Yerkes National Primate Research Center, University of Barcelona and McGill University. Nicolas is looking forward to expanding his

knowledge in anatomic and wildlife pathology while improving his skills as a diagnostician during his time at the AVC.



## Pathology and Microbiology Department Hosts Visiting Students in Anatomic Pathology



L to R: Ahmed Maayouf Saeed Hamad AlAmer and Mansour Habib Obaid Msaiger.

Three visiting students were hosted by **Dr. Shannon Martinson** in anatomic pathology during the summer. Ahmed Maayouf Saeed Hamad AlAmer and Mansour Habib Obaid Msaiger, DVM candidates from the United Arab Emirates University, visited during July and August. During this time they developed their necropsy skills and reviewed histopathology of common diseases.

Shannon also hosted Dr. Waylon Wiseman for two weeks in July and August. Waylon was an AVC graduate in (2013) and is currently a Small Animal Surgery Fellowship candidate at Brisbane Veterinary Specialist Centre in Brisbane, Australia. Waylon visited our department to complete an externship in pathology to partly meet the requirements set by the European College of Veterinary Surgeons for his program.

No photo Available.

## Visiting Clinical Pathologist from Australia



The clinical and anatomic pathology group welcomed **Dr. Emma Croser** for a 2 week visit in June 2019. Dr. Croser is from Charles Sturt University in Wagga Wagga, Australia. Her purpose in visiting the department was to study for the American College of Veterinary Pathologists (ACVP) Certifying Examination which she planned to write in Tampa, Florida, in August. While here, Dr. Croser attended rounds and reviewed numerous cases. The pathology group was very pleased to hear that Dr. Croser passed her examination and is now a Diplomate of the ACVP.

L to R: Drs. Andrea Bourque, Nicole Kaiser, Emma Croser.

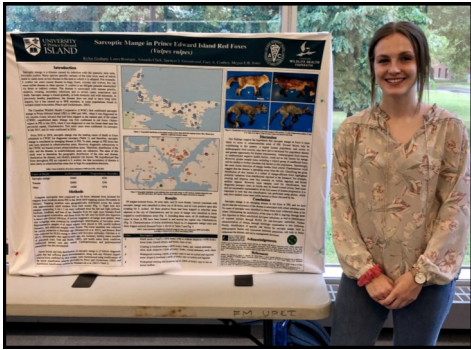
## CWHC Atlantic Hosted Visiting Student from Columbia



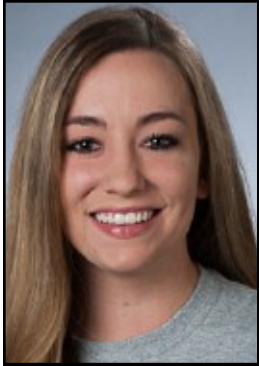
Between June 10 and 21, 2019, **Dr. Megan Jones** and Canadian Wildlife Health Cooperative (CWHC) Atlantic hosted a visiting veterinary student, **Dr. Daniela Losada**, from the National University of Colombia. Dr. Losada participated in various wildlife necropsies, examined numerous wildlife histopathology slides, and learned about wildlife diagnostics and surveillance in Atlantic Canada.

## 2019 AVC Summer Research & Leadership Poster Competition Winners

The Atlantic Veterinary College (AVC) Summer Research and Leadership Program (SRLP) introduces students to careers in veterinary and biomedical research by incorporating a summer research project with a faculty member. Students work with faculty mentors and other research personnel on a specific research project during the summer months. Students also participate in a series of seminars and round table discussions on various aspects of research as well as given the opportunity to present their research results. The program is overseen by Dr. Larry Hammell, AVC Associate Dean, Graduate Studies & Research (and currently Dean (Interim), UPEI Faculty of Graduate Studies) with strong organizational support by Ms. Darlene Wakelin. Program co-ordinators this past summer were **Drs. Melanie Buote and Noel Clancey**. Judges for student poster presentations were Drs. Paul Bernard, **Noel Clancey**, **Chelsea Martin**, Ben Stoughton and Ms. Kathleen Parrish.



**Kylee Graham** (AVC Class of 2022) participated in the 2019 AVC Summer Research and Leadership program under the supervision of **Dr. Megan Jones**. Kylee's project was entitled, "Distribution and Characterization of Sarcoptic Mange in Red Foxes in Prince Edward Island." The project received additional funding through a grant to the Canadian Wildlife Health Cooperative (CWHC) Atlantic from the PEI Wildlife Conservation Fund and project funding from PEI Fish and Wildlife. Kylee presented a poster summarizing her findings at the National Veterinary Scholars Symposium held July 24-27 at Tufts University in Boston, Massachusetts, and also at the AVC at the Summer Research and Leadership Poster Competition.



**Courtney Abbott** (AVC Class of 2021) participated in the 2019 AVC Summer Research and Leadership program under the supervision of **Drs. Shannon Martinson, Gary Conboy and Melanie Buote**. Courtney's project was entitled, "Survey of lungworm infection in bobcats in Nova Scotia". The study was a collaborative effort between the CWHC Atlantic and the Nova Scotia Department of Natural Resources involving the necropsy examination of lung samples from Nova Scotian bobcats for the presence of *Oslerus rostratus* and *Troglostrongylus wilsoni*. Courtney presented a poster of her research results at the National Veterinary Scholars Symposium held last July 24-27 at Tufts University in Boston, Massachusetts, and again at the AVC Summer Research and Leadership Poster Competition.

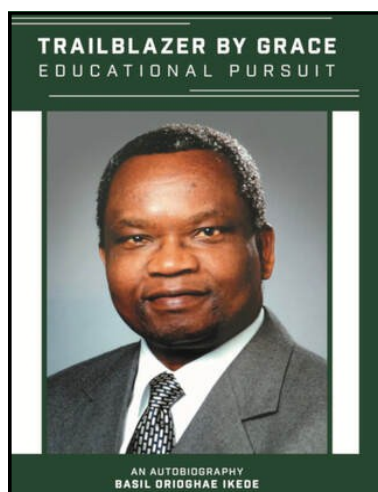


**Amanda Egers** (AVC Class of 2021) participated in the 2019 AVC Summer Research and Leadership program under the supervision of Drs. Spencer Greenwood and **Gary Conboy**. Amanda's project was entitled, "Morphological and Molecular characterization of helminths from wildlife and marine mammals." The study was a collaborative effort between the Canadian Wildlife Health Cooperative (CWHC) Atlantic and the Departments of Pathology and Microbiology and Biomedical Sciences. Her study involved a paired morphological identification and molecular analysis of helminths recovered at necropsy from marine mammals and other wildlife. Amanda presented a poster of her research results at the National Veterinary Scholars Symposium held last July 24-27 at Tufts University in Boston, Massachusetts, and then

again at the AVC Summer Research and Leadership Poster Competition. Amanda will also be presenting her results as an oral presentation at the Atlantic Canada Association of Parasitologists meeting on October 25-26, 2019 in Pictou, Nova Scotia.



## Book Published



**Dr. Basil Ikeke**, former chair of the Pathology and Microbiology department, has just published an autobiography entitled, "Trailblazer by grace: educational pursuit" published by Friesen Press in Victoria, BC. Further details can be obtained by typing the title on Google and following the links. The book is available as ebook, paperback and hardcover version from Friesen Press, Amazon, etc. It contains chapters devoted his two decades in the department of Pathology and Microbiology, the AVC and at UPEI.

Further details can also be obtained from:

<http://basilikede.weebly.com>

## Dr. Juan Carlos Rodriguez- Lecompte Invited Speaker at Several Conferences



As a part of the XIV Congreso Internacional Association Santander Avain Pathologists,(ASPA) Bucaramanga, Colombia, May 22-24, 2019, **Dr. Juan Carlos Rodriguez-Lecompte** presented three conferences involving immune pathophysiology of the immunosuppression, Infectious Bursa Disease virus and intestinal pathogens and respiratory problems in chickens. With the participation of more than 450 veterinarians, Dr. Rodriguez-Lecompte explained the importance of the chicken immune system to control immunosuppressive disease.

L to R: Drs. K.A. Schat (Cornell University), J.C. Rodriguez-Lecompte (AVC) and Luis F. Caron (University of Curitiba, Brazil)



**Dr. Juan Carlos Rodriguez-Lecompte** was invited to participate in the first Poultry symposium controlling salmonellas, at Universidad de Concepcion del Uruguay, Concepcion del Uruguay, Argentina, on May 31, 2019. In this important forum, participants from Brazil, Uruguay, Colombia, and Peru were discussing more effective strategies to control salmonellosis in the poultry industry.



As a part of **Dr. Juan Carlos Rodriguez-Lecompte's** collaboration with Elanco, he was invited to present and discuss the result of trial evaluating different vaccines and strategies to control pathogens in salmon. Dr. Rodriguez presented his conclusion with a conference entitled "Molecular characterization of the innate immune response associated with different vaccines and strategies to control diseases in Salmon," Elanco Seminar, Puerto Varas, Chile, June 4, 2019.

**Dr. Juan Carlos Rodriguez-Lecompte** participated in the American Veterinary Medical Association and American Association of Avian Pathologists (AVMA-AAAP) meetings in Washington, DC August 2-5, 2019; as a moderator of the immunology section and as a presenter where he talked about his research at AVC focusing on the immunological effects of Vitamin D during IBDV infection.

## Invited Speaker at CVMA Conference



**Dr. Noel Clancey** was an invited speaker at the combined Canadian Veterinary Medical Association and 44th World Small Animal Veterinary Association World Congress, which took place in Toronto, Ontario, from July 16-19. Known among his peers for his love of cytology, Dr. Clancey provided four lectures in cytology aimed to assist veterinarians to obtain quality cytological samples and provide the foundations to help practitioners make sound, in-hospital interpretations of common lesions. His presentations were entitled, "Diagnostic Cytology: Optimizing sample quality for

improved results", "Basic Cytology", "Evaluation of Effusions" and "Lymph Node Cytology".

## Invited Speaker at WAAVP Conference



**Haifaa Mahjoub**, a PhD student under the supervision of **Drs. Gary Conboy** and Spencer Greenwood, recently presented a research presentation at the 27<sup>th</sup> International Conference of the World Association for the Advancement of Veterinary Parasitology, held July 7-11, 2019, in Madison, Wisconsin, USA. The title of her abstract was, "Clinical Crenosomosis in a Black Bear (*Ursus americanus*)". Haifaa's project was done in collaboration with Dr. Paula-Marie Mather at Atlantic Wildlife Institute, New Brunswick, and AVC technologist Nicole Murphy.

## Keynote Speaker at the Congress of Bovine Medicine in Mexico



**Dr. Alfonso López**, Professor Emeritus, was a keynote speaker at the XLIII Congress of Bovine Medicine in Veracruz, Mexico, hosted by the Mexican Association of Bovine Practitioners from August 1-3, 2019. Dr. López discussed the historical and current advances of bovine sepsis. In the past, sepsis was primarily attributed to infectious organisms, but current research demonstrated that the lesions and death in humans and animals with sepsis are mostly due to the inflammatory and host response. He also delivered a presentation on the achievements and frustrations of veterinarians regarding bovine pneumonia. During the last 50 years, bovine pneumonia has been the number one cause of morbidity and mortality in feedlots in Canada, the United States, Mexico, and other Latin American countries. The lack of progress in the treatment and prevention of pneumonia causes enormous frustration in producers and large animal veterinarians. Dr. Lopez explained step-by-step why many of the chronic lung lesions, such as those caused by *Mycoplasma bovis* and *Mannheimia haemolytica*, are irreversible. This inability of the lung to repair itself after chronic infections explains why, in many cases, the sick animal is unresponsive.



## Endangered Bat Species Protection and Recovery 2.0



The Canadian Wildlife Health Cooperative, Atlantic Region's bat team in the Department of Pathology and Microbiology consists of (Photo: L to R **Dr. Megan Jones, Tessa McBurney, Jordi Segers and Dr. Scott McBurney**). These individuals share a passion for bat health and population recovery, especially after the devastating decline in several bat species following the 2010 emergence of white-nose syndrome in Atlantic Canada. Recently this team successfully obtained \$204,887 in Habitat Stewardship Program-Species at Risk funding from Environment and Climate Change Canada for their two-year project, *Stewardship for Protection and Monitoring of Atlantic Canada's Endangered Bat Species*. Their project focuses on conservation and recovery of three endangered bat species via a regional education and outreach initiative. Activities include: 1)

Development of Managing Bats in Buildings Beneficial Management Practices for Nova Scotia and New Brunswick and training their Nuisance Wildlife Control Operators to use them for protection of endangered bat species and their roosting habitats; 2) Creation of an acoustic monitoring curriculum for a training workshop to build bat monitoring capacity among regional citizen scientists, non-governmental organizations and Indigenous Peoples with subsequent provision of acoustic detection equipment to encourage this activity; 3) Delivery of acoustic data harmonization, standardization and quality control/quality assurance; and 4) Continuation of a regional bat information hotline for public reporting to identify critical habitat and roosts, assess bat health, and protect human and domestic animal health. Additionally, it provides a unique opportunity for Atlantic Canadian wildlife, public health and animal health professionals to collaborate in endangered species protection and recovery.

## Dr. Megan Jones Attends Wildlife Disease Association Meeting



In August 2019, **Dr. Megan Jones** attended the annual international meeting of Wildlife Disease Association (WDA) in Tahoe City, California. She presented a poster entitled, "Isolation and Characterization of skunk adenovirus causing severe bronchointerstitial pneumonia in rehabilitated porcupines in Nova Scotia, Canada." The authors were **Laura Bourque**, Trent Bollinger, Ole Nielsen, Betty Lockerbie, Sherri Cox, Jessica Khodadad, Hope Swinimer, Lynn Roger, and Megan Jones. Megan also served as a judge for the student poster session, chaired a student presentation session at the meeting, and participated in a pre-meeting workshop on leadership for wildlife health professionals. The WDA meeting was also an opportunity to meet with colleagues representing the various Canadian Wildlife Health Cooperative (CWHC) regional centres.

Photo:(L-R): Dr. Brian Stevens, wildlife pathologist, CWHC Ontario/Ontario Veterinary College; Dr. Megan Jones, CWHC Atlantic/AVC; Dr. Stephane Lair, regional director, CWHC Quebec/ FMV; and Dr. Jamie Rothenburger, regional director, CWHC Alberta/ University of Calgary at the annual international meeting of the Wildlife Disease Association (Photo courtesy CWHC).

## New Interim Graduate Studies Program Coordinator for AVC



In September, **Dr. Chelsea Martin** accepted the position of Interim Graduate Studies Program Coordinator for AVC, for a term of 6 to 9 months. The position was most recently held by Dr. Spencer Greenwood in the Department of Biomedical Sciences. Dr. Martin will continue to serve as the departmental representative on the AVC Graduate Studies and Research Committee.

### Departments of Biomedical Science & Pathology and Microbiology

**Tuesdays, 1:30-2:30 pm Room 287N, AVC-The McCain Foundation Learning Commons**

Date	Topic	Presenters
November 5, 2019	Early life seizures, long term consequences.	Dr. Paul Bernard Biomedical Sciences
November 12, 2019	Impact of Climate Variation on Bacterial Kidney Disease in Atlantic Salmon ( <i>Salmo salar</i> ).	Jonathon Perreira Pathology and Microbiology
November 19, 2019	Reactive Oxygen Species (ROS) Homeostasis in Rainbow Trout Heart.	Michael Isei Biomedical Sciences
November 26, 2019	Further elucidation of the chitin synthesis and remodeling pathways and impact of chitin disrupting chemicals in sea lice.	Dylan Michaud Pathology and Microbiology

Co-ordinators of the departmental seminar series are Drs. Noel Clancey and Tammy Muirhead.



## Publications

Helgesen KO, Marin SL, **Fast MD**. An Emerging threat: Sea Lice Resistance. Commissioned Technical Report for Industry entitled, 'An overview of emerging diseases in the salmonid farming industry' 2019; pg. 5-15.

Michaud DR, Poley JD, **Fast MD**. Sex-biased gene expression and evolution of candidate reproductive transcripts in adult stages of salmon lice (*Lepeophtheirus salmonis*). *Facets* 2019;4:254-274, DOI: 10.1139/facets-2018-0016. [Facetsjournal.com](https://facetsjournal.com)

Reyes J, **Rodriguez-Lecompte JC**, Blanchard A, McClure JT, Sánchez J. Molecular variability of *Streptococcus uberis* isolates from intramammary infections in Canadian dairy farms from the Maritime region. *The Canadian Journal of Veterinary Research* 2019; 83:168-176.

Arai S, Rist P, **Clancey N, Gilroy, C**, Stryhn H, Amsellem P. Fine-needle aspiration of cutaneous, subcutaneous, and intracavitary masses in dogs and cats using 22-vs 25-gauge needles. *Veterinary Clinical Pathology* 2019; 48: 287-292.

MacKinnon B, **Groman D, Fast M**, Manning AJ, Jones P, St-Hilaire S. Atlantic salmon challenged with extracellular products from *Moritella viscosa*. *Diseases of Aquatic Organisms* 2019;133: 119-126. <https://doi.org/10.3354/dao03337>.

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MacMillan KM, **Martinson SA**, Smith M, Lofstedt J. Malignant mesothelioma of the vaginal tunic and peritoneum in a young stallion. *Journal of Equine Veterinary Science* 2019; 80: 76-79.

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Cobo-Angel CG, Jaramillo-Jaramillo AS, Palacio-Aguilera M, Jurado-Vargas L, Calvo-Villegas A, Calvo-Villegas EA, Ospina-Loaiza DA, **Rodriguez-Lecompte JC**, Sanchez J, Zadoks R, Ceballos-Marquez A. Potential group B *Streptococcus* interspecies transmission between cattle and people in Colombian dairy farms. *Scientific Reports* 2019;9:14025 <https://doi.org/10.1038/s41598-019-50225-w>.

Gomez DE, Galvão KN, **Rodriguez-Lecompte JC**, Costa MC. The cattle microbiota and the immune system an evolving field. *Veterinary Clinics Food Animals*. 2019; 35: 485-505.

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

Ingrid MacLeod ([imacleod@upei.ca](mailto:imacleod@upei.ca)) (902) 566-0541.

Editor: Dr. Alfonso López Reviewer: Dr. Shelley Burton

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