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Pathology & Microbiology Newsletter
Atlantic Veterinary College
University of Prince Edward Island
Issue 63 October 2022

Dr. Fred Kibenge Heads 2022 Aqua Virus Workshop

On July 21st, the Center for Applied Biological Research (CIBA) together with Cargill and Veterchemicals presented the Aqua virus 2022 Workshop. This important yearly workshop in Chile highlights work in viruses related to salmonids and their effects. The workshop was held at the Cabañas del Lago hotel in Puerto Varas, Los Lagos region, Chile.

This workshop was led by world-renowned researcher **Dr. Fred Kibenge**, professor of virology in the Department of Pathology and Microbiology.

Dr. Kibenge developed his work in the biology of viral pathogens and research focused on understanding the virulence mechanisms of viruses that contribute to the knowledge of virus pathogenesis and the optimization of detection methods and control of viral diseases. Dr. Kibenge's latest publications include articles on emerging viral diseases, heart and skeletal muscle inflammation (HSMI) in Atlantic salmon and coho salmon, and molecular epidemiology of piscine orthoreovirus .

"*Having Dr. Kibenge is a privilege for the world of Chilean aquaculture, especially for people linked to the world of salmon,"* said Dr. Marcos Godoy, Director of CIBA.

Dr. Kibenge spoke about Infectious Salmon Anemia virus, reviewing the virus, its outbreaks and reports, its distribution in the world and the way in which it is transmitted. At this point, he explained how the virus would have arrived in Chile, and the challenges that the industry faces with this disease. Dr. Kibenge then returned to the podium for a second time to speak about HSMI in salmonids.

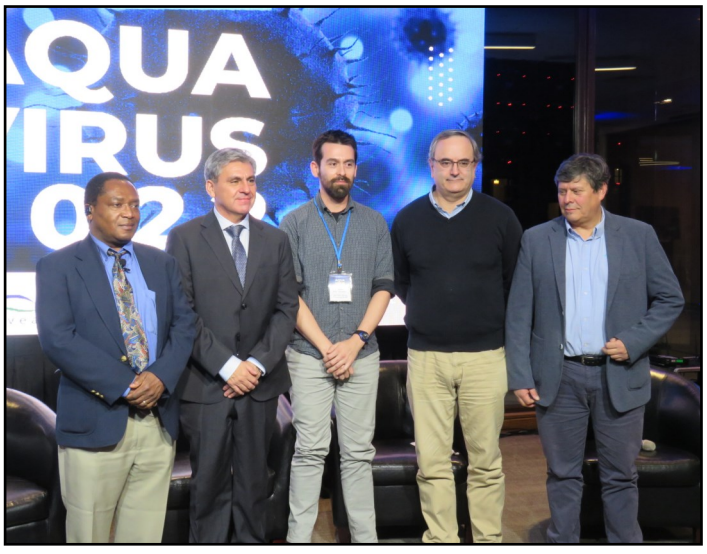


Photo: Dr. Kibenge (left) with other conference participants.

Dr. Fred Kibenge receives 2022 Springer Nature Editorial Contribution Award

The Atlantic Veterinary College (AVC) at the University of Prince Edward Island, is pleased to congratulate **Dr. Fred Kibenge**, professor, Department of Pathology and Microbiology, AVC, on being named one of the 2022 Springer Nature Editorial Contribution Award recipients.

This award recognizes the hard work and dedication of editors and editorial board members who safeguard the scientific accuracy of published works and maintain and protect the trust and integrity of the journals in which they review. Recipients are also acknowledged for their assessment of new submissions and their rigorous management of the peer review process.

Dr. Kibenge noted, "*It is humbling to receive such a recognition from Springer Nature. It is double humbling because I did not know about the awards until I read the announcement online.*"

This year marks the first annual Springer Nature Editor of Distinction Awards. They were created to recognize editors for their dedication and commitment to their journals and their scientific and research communities. The editorial community is recognized in three categories: Editorial Leadership Award, Editorial Contribution Award, and Author Service Award.

Dr. Kibenge has received this award of distinction specifically for his work as a Section Editor in the Springer Nature BMC Virology Journal.

Edited from submission from Rachel Cutcliffe
External Engagement Officer
Atlantic Veterinary College, UPEI

Congratulations and Farewell to Dr. Brodie Reinhart

Congratulations to **Dr. Brodie Reinhart** on successfully completing his combined Master of Veterinary Science (MVSc) Degree and residency in clinical pathology in August. Dr. Reinhart was supervised by **Drs. Noel Clancey** and **Cornelia Gilroy**. He has moved to Langley, British Columbia to begin working at True North Veterinary Diagnostics, Inc. We wish Dr. Reinhart all the best

Congratulations Brodie!

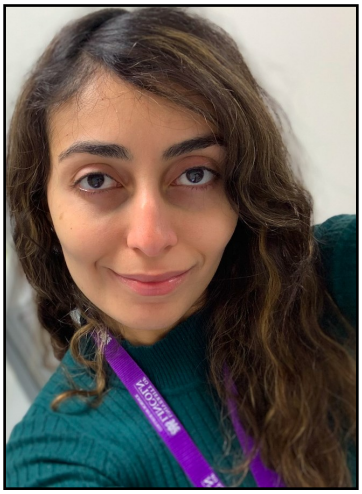
Left to right: Drs. Noel Clancey, Brodie Reinhart and Cornelia Gilroy.

Pathology and Microbiology Welcomes New Post Doctoral Fellows

The Department of Pathology and Microbiology welcomes **Dr. Reza Ghanei-Motlagh**, Post-doctoral fellow to the department. Reza received his DVM and PhD (aquatic animal health) in Iran between 2007 and 2020. His doctoral project was focused on isolation and characterization of probiotics with anti-quorum sensing activities, and their impacts on non-specific immune responses, disease resistance and physiological responses in Asian sea bass. As a visiting scientist, he had the opportunity to accomplish part of his doctoral research at the Clinical Division of Fish Medicine, University of Veterinary Medicine, Vienna. There, he developed his knowledge and skills in molecular bacteriology associated with fish pathogens as well as in fish parasitology, particularly metazoan parasites, and pursued his studies as a research assistant and post-doctoral researcher. His next research project, awarded funding via the Mitacs Elevate program, will examine the sea lice resistance change over time in an Atlantic salmon breeding program under mentorship of **Dr. Mark Fast** in collaboration with Huntsman Marine Science Centre and Mowi Canada East.

The Department of Pathology and Microbiology welcomes **Dr. Khalil Eslamloo**, post-doctoral fellow to the department. Khalil completed his BSc and MSc (marine biology and fisheries) in Iran between 2005 and 2011, and started his Biology PhD program under Dr. Rise's supervision at Memorial University (MUN) in 2013. Khalil's PhD Thesis focused on understanding the molecular basis of teleost antiviral responses, and he used genomics approaches as well as Atlantic cod and Atlantic salmon macrophage models to address his research questions. He defended his PhD in 2019, and started his postdoctoral research funded by Ocean Frontier Institute at MUN. He used transcriptome profiling to identify the genes and pathways underlying the response and resistance of Atlantic salmon to bacterial pathogens causing significant losses in Atlantic salmon aquaculture of Canada. His current post-doctoral project, awarded through the Mitacs Elevate program, revolves around Atlantic salmon complex gill disease (CGD). Khalil will work under **Dr. Mark Fast's** supervision at AVC and in collaboration with Cermaq, and will use various molecular tools to better understand the factors contributing to CGD development.

Pathology and Microbiology Welcomes New Research Technologist



The Department of Pathology and Microbiology welcomes research technologist**, Fatemeh (Rose) Parsa** to her new position as a technician, where she mainly works in parasitology diagnostics and bacteriology teaching with **Dr. Nina Germitsch** and **Dr. Lisanework Ayalew,** respectively. Rose is originally from Toronto but has spent the past few years studying in England, where she earned a BSc in Animal Behavior and Welfare and an MSc in Bio Veterinary Science, focusing on the endoparasites of wild birds. Her prior education and experience working as an associate demonstrator in undergraduate laboratory practicals attracted her to this position and her love of infectious veterinary diseases makes her excited to learn as much as she can. In her free time, she loves to hike with her huskies, paddleboard, birdwatch, and travel.

Grant Application Success

Congratulations to **Dr. Noel Clancey** on being successfully awarded 2 grants .

2022: Investigation of the effect of season on insulin sensitivity in horses on PEI. John E (PI), MacMillan K (CI), Burns J (CI), **Clancey N** (CI). AVC Internal Research Fund competition, Clinical Applied pool. $14,450.

2022: Prevalence of hypothyroidism in Standardbred racehorses in PEI. Burns J (CI), John E (CI), **Clancey N** (CI), MacMillan K (PI). AVC Internal Research Fund competition, Clinical Applied pool. $7050.

Faculty Achievements

Congratulations to **Dr. Cornelia Gilroy** on her achievements!

Dr. Cornelia Gilroy completed a Post Graduate Certificate in Veterinary Medical Education from the Royal Veterinary College, London, United Kingdom in July 2022.

Also in October 2022, Dr. Cornelia Gilroy achieved the status of Fellow (FHEA) in Higher Education (FHEA). This is in recognition of attainment against the United Kingdom Professional Standards Framework for teaching and learning support in higher education.

Congratulations Cora!

Presentation in Preparation for (NAVLE) Exam

Drs. Cornelia Gilroy and **Noel Clancey** presented a clinical pathology review session for the Class of 2022 on October 20, 2022, in preparation for the North American Veterinary Licensing Examination (NAVLE).

Dr. Sara Purcell Collaborates with Ocean Sciences Centre Memorial University

Ocean Science Centre, Memorial University, Logy Bay, Newfoundland

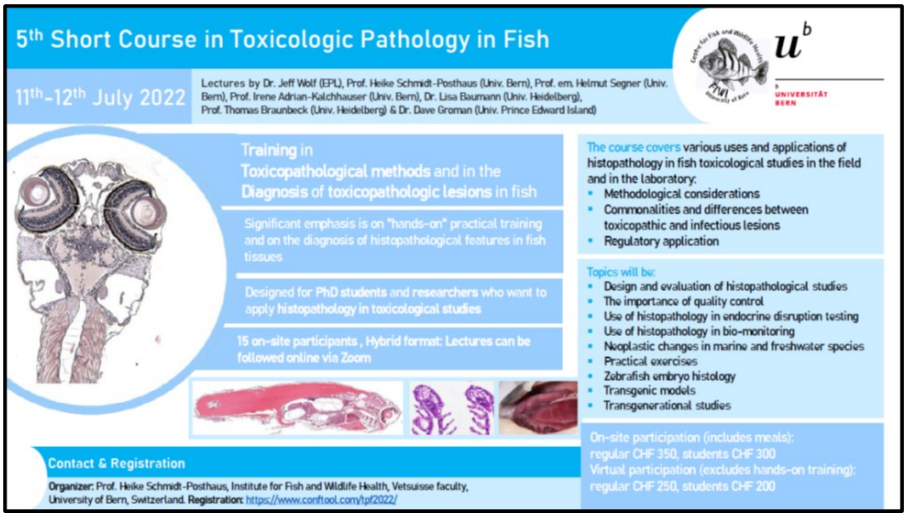
As part of **Dr. Mark Fast**'s Genome Canada's Genomic Applications Partnership Program (GAPP), **Dr. Sara Purcell** traveled to Logy Bay, Newfoundland from August 22-26 to work with Drs. Matt Rise and Albert Caballero Solares at the Ocean Sciences Centre, Memorial University. Sara helped them establish the RTgill cell line in their laboratory so that it could be used as a part of a collaborative project that aims to validate biomarkers of healthy and compromised gills of Atlantic salmon. The resulting genomics-enabled tools for fish health will guide the management and intervention strategies for complex gill disease in Atlantic salmon.

St. John's, Newfoundland

While the cells were growing, Sara was able to enjoy the warm, windy weather and explore part of the East Coast Trail going on a few hikes from Logy Bay to Quidi Vidi Village and then onto The Batteries and Signal Hill. "I loved my time there. Newfoundland has such a rugged beauty. I don't know how they can get any work done at the OSC with such amazing views".

Dr. David Groman Presents at Course on Toxicologic Pathology in Fish

Dr. David Groman from Diagnostic Services at the Atlantic Veterinary College was an invited speaker at the Short Course in Toxicologic Pathology in Fish held in July 2022 at the University of Bern, Switzerland. He presented two lectures: 1. The impact of pesticides in aquatic environments and on aquatic organisms. 2. Hemolytic anemia in wild Atlantic salmon – a practical case study.



2022 Chinook Project Report

The Chinook Project has been in operation for 17 years. As a charitable mobile veterinary service, we have held 25 clinics in 13 different locations and have seen over 2000 animals. We have performed over 1000 spay and neuter surgeries. The project is run from the Atlantic Veterinary College (AVC) and has had 82 fourth year veterinary students from all over Canada and the USA participate. Twenty-three veterinarians and two veterinary technicians have led the clinics – hailing from Atlantic Canada, Ontario, Quebec, Massachusetts, Missouri, New York, North Carolina, Australia and New Zealand.

After having to cancel trips to this community due to COVID for the previous two years, the Chinook Project team was able to travel to Port Hope Simpson in June. This was the first visit to this community in southern Labrador. The team leaders were Dr. John Ruffino (veterinarian, Newfoundland), Dr. Alan Plater veterinarian, Ontario) and Melissa Hamel (veterinary technician, AVC). Five veterinary students (hailing from Newfoundland, New Brunswick, Nova Scotia, and Missouri) were enrolled in the rotation. Once again, the success of the trip also heavily depended on local coordination in the community, which was in place.

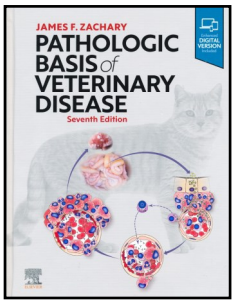
In Port Hope Simpson, the team held 4.5 clinic days with 124 patient visits in the community multipurpose building. There were 42 surgeries completed (15 ovariohysterectomies, 22 castrations (one cryptorchid) and 5 other surgeries (dental extractions and sedated medical grooming)) and 82 medical appointments seen for a variety of conditions. The hospitality of this community was greatly appreciated as they provided meals and accommodations for the team, including a community meal for the team members to meet people from the community. Their hospitality extended to include several excursions for the team to experience the culture and scenery of this beautiful location.

The Chinook Project is in the process of making plans for 2023 when we hope to return to Labrador. We hope to continue our relationships with communities we have previously visited and are also open to requests from new communities where veterinary care is needed. In all instances, the help of local coordinators who can provide support on the ground is vital for the planning and implementation of the remote veterinary clinics operated by the Chinook Project.

We will continue to look for collaborative opportunities with Veterinarians without Borders (VwB) and other groups and hope to see a national strategy for access to veterinary care emerge. In addition, the Chinook project continues to be a collaborator for a project initiated by researchers at the University of Calgary investigating “Improving access and quality of community medicine by addressing mental health of veterinary service providers”.

We are very thankful for the significant ongoing support we receive from individuals and organizations that enables the Chinook Project to continue being able to provide veterinary care to Northern communities.

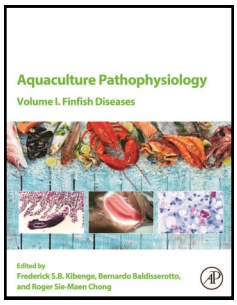
Contribution to 7th edition of Pathologic Basis of Veterinary Disease



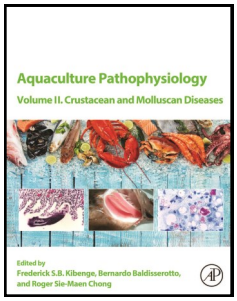
Congratulations to **Dr. Alfonso Lopez (**Professor Emeritus) **and Dr. Shannon Martinson** of the Department of Pathology and Microbiology who authored the chapter on respiratory pathology in the latest edition of *Pathologic Basis of Veterinary Disease*. This textbook is widely utilized as a part of the curriculum in veterinary colleges, training veterinary pathologists, and as a reference book in diagnostic veterinary laboratories in North America and worldwide.

Aquaculture Pathophysiology Volumes 1 and Volume 2

Congratulations to **Dr. Frederick Kibenge** on the publication of his two volumes, *Aquaculture Pathophysiology, Volume I. Finfish Diseases,* and *Aquaculture Pathophysiology, Volume II. Crustacean and Molluscan Diseases.* They were co-edited by Dr. Bernardo Baldisserotto.



Aquaculture Pathophysiology, Volume I. Finfish Diseases is a diverse, practical reference on finfish diseases impacting aquaculture.



Aquaculture Pathophysiology, Volume II. Crustacean and Molluscan Diseases is a concise, practical reference on shellfish diseases of significant risk to aquaculture.

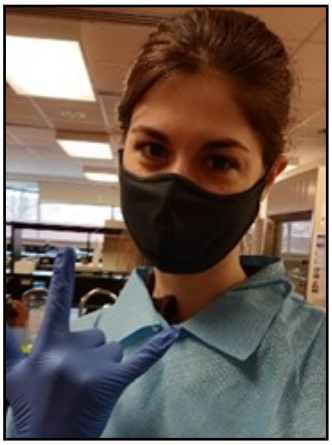
These two volumes are intended for the veterinarian, fish health biologist or extensionist, fish pathologist and fish health diagnostician

Thesis Defense

Congratulations to **Dr. Nicolas Decelles** who successfully defended his MVSc thesis (“Causes of mortality in Northern Gannets (*Morus bassanus*) collected in Atlantic Canadian waters between 1990 and 2017”) on August 18, 2022. Nicolas was co-supervised by **Drs. Megan Jones** and **Melanie Buote. Dr. Shannon Martinson** chaired the Examination Committee.

Congratulations Nico!

Pathology & Microbiology Summer Student Accomplishments



Kelly Levesque, a UPEI BSc biology student worked as a summer student research assistant as a part of the annual Summer Research and Leadership (SRLP) program. Under the Supervision of **Dr. Lisanework Ayalew,** Kelly worked on a project titled "Generation of an Infectious Clone of Fowl Adenovirus (FAdV)-8a" while also serving as a camp counselor for Vet Camp.

This project involved many cellular and molecular benchwork techniques including cell culture, genomic DNA extraction, PCR, cloning and transfection. Kelly had the opportunity to work with live hepatoma cells, competent *E.coli* , FAdV DNA, and her absolute favourite: plasmid DNA in Dr. Ayalew's laboratory. Kelly gave a poster presentation of this research on Tuesday, August 30th at the AVC. Kelly also had the opportunity to learn the procedures of DNA library preparation and bacterial whole genome sequencing based on the Oxford Nanopore Technology.

Publications

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For comments or suggestions for our newsletter, please contact: Dr. Russell Fraser (rufraser@upei.ca) or Ingrid MacLeod (imacleod@upei.ca) (902) 566-0541. Editor: Dr. Russell Fraser, Reviewer: Dr. Shelley Burton

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