



Pathology & Microbiology Newsletter
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UPEI
UNIVERSITY
of Prince Edward
ISLAND

The Chair's Holiday Greeting and End of Year Message



I am pleased to provide this end of year message and department report card. This is a special time we spend with our families and friends and also look back as the year comes to an end. It has been a challenging year which has brought us much change, particularly in our technical and administrative staff where we lost a combined total of three permanent positions due to budgetary restraints and cutbacks. Despite the budget pressures, I am proud to report that the department performance indicators remain strong, with several successes to celebrate, as exemplified by the following sample of achievements of our faculty, staff and students in the areas of teaching, research and professional service: [Read more....](#)

Yes, it has been a challenging year, but in the words of the late George Burns (American comedian), "Look to the future, because that's where you'll spend the rest of your life." I hope you all have an enjoyable holiday break wherever you choose to spend it.

Wishing you all Peace and Happiness this Holiday Season, and a Healthy and Prosperous 2014! Fred Kibenge.

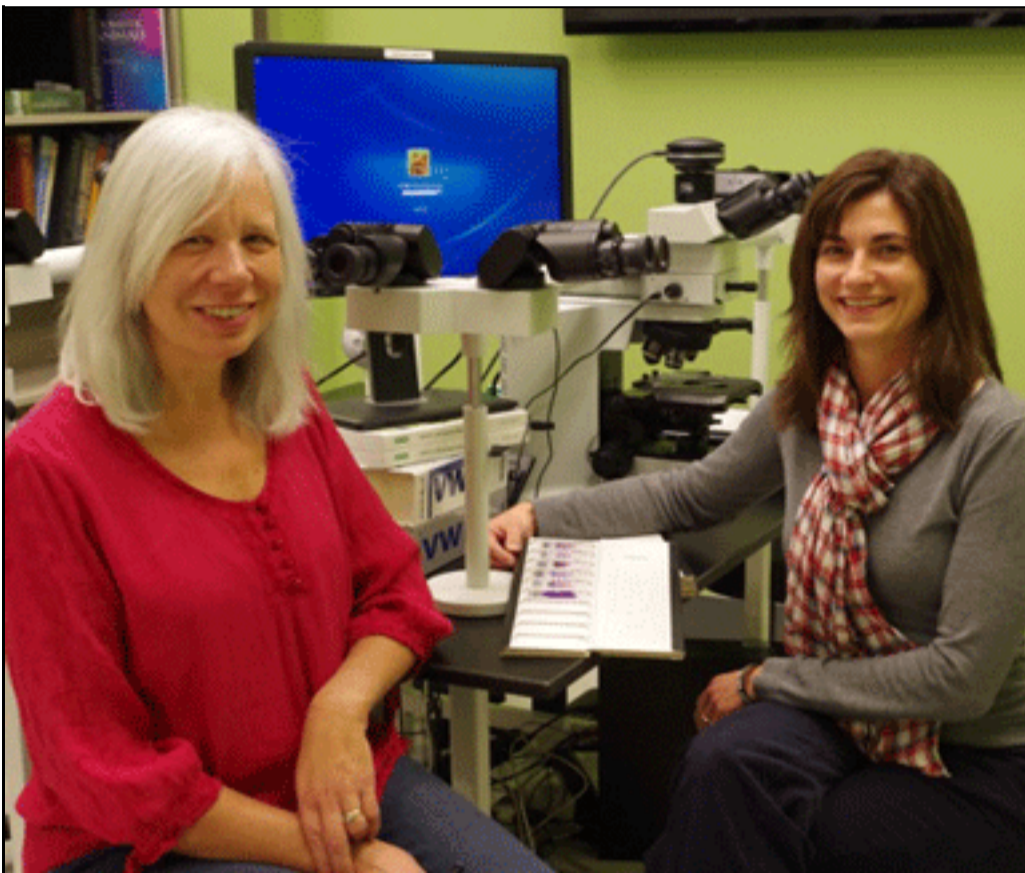
Dr. Rick Cawthorn Retires from UPEI and Migrates to Alberta



Dr. Rick Cawthorn retired from UPEI on June 30, 2013, having served 28 years as an AVC faculty member. He was a founding member of the Faculty of Veterinary Medicine (arriving July 1, 1985), and founding Director of the AVC Lobster Science Centre (August 1, 2000 - December 31, 2006). Throughout his tenure at UPEI, Rick has been known for the "infectious" enthusiasm that he used to form and maintain collaborative research teams. He was also able to carry that enthusiasm to the classroom, making him a highly effective teacher, and he also has been highly effective at the various levels of university governance. He thus leaves a void that will not be easy to fill. Rick received his BSc (Honours of Fisheries and Wildlife Biology, 1973), MSc (Parasitology, 1976) and PhD (Parasitology, 1979) all from the University of Guelph. He began his academic career as an

Assistant Professor at the Western College of Veterinary Medicine, University of Saskatchewan (1980-1985), and was recruited to join AVC in 1985 as an Associate Professor. He was tenured in 1990 and promoted to Full Professor in 1992. As an AVC founding faculty member, he was involved in the college development including equipping the facility, setting up the curriculum, hiring of faculty and staff, and integration of the AVC with the rest of the university. Rick established the first academic research program in lobster health, which morphed into the AVC Lobster Science Centre, and has trained many graduate students at both MSc and PhD levels. A primary accomplishment of this initiative was to introduce the science of veterinary medicine to all levels of the Canadian lobster fishery (from ocean to plate) and related crustacean fisheries, thus helping to continue the branding of AVC as "The Fish Vet School". After his retirement, Rick was appointed Adjunct and Graduate Faculty in the Department of Pathology and Microbiology. Rick moved to Alberta to be near his family and to work on his 'bucket list', especially hunting and fishing. Additionally, he is pursuing part-time teaching opportunities and will continue collaborative research with colleagues at AVC. Well done Rick! Your colleagues wish you all the best in your retirement.

Dr. Betsy O'Neil now an ACVP Diplomate



Dr. Elizabeth (Betsy) O'Neil, a past departmental graduate student and resident, recently received the good news that she passed the Certifying Examination of the American College of Veterinary Pathologists (ACVP) to become a boarded Diplomate in Clinical Pathology. This very challenging 3-day examination is given each September in Ames, Iowa. Preparation typically requires many months of intensive studying. Dr. O'Neil is presently working as a veterinary clinical pathologist at the University of Calgary, where her colleagues include two past AVC graduates who are also ACVP Diplomates, Dr. Cathy Wagg and Dr. Nicole Fernandez.

Photo (left to right): Dr. Betsy O'Neil and Dr. Cathy Wagg

Dr. Carlos Lopez Honoured with the C.L. Davis Award

Dr. Carlos Lopez-Mendez, resident in anatomic pathology, received the Charles Louis Davis Foundation Student Scholarship Award. This award was presented to Carlos by **Dr. Paul Hanna** at the annual conference of the American College of Veterinary Pathologists (ACVP)/ASVCP in Montréal on November 16-20th, 2013. Dr. Lopez, a 3rd year anatomic pathology MVSc/residency student, was nominated for this award by the department's anatomic and clinical pathologists. Carlos obtained his veterinary degree at the University of Santiago de Compostela in Spain. Prior to coming to the AVC he spent many years in the United Kingdom, first completing an MSc in Toxicology and then as a toxicological pathologist in a British contract research laboratory. Carlos is planning to take the ACVP certifying examination this coming fall.



Company President Visit & Presentation at ACVP/ASVCP

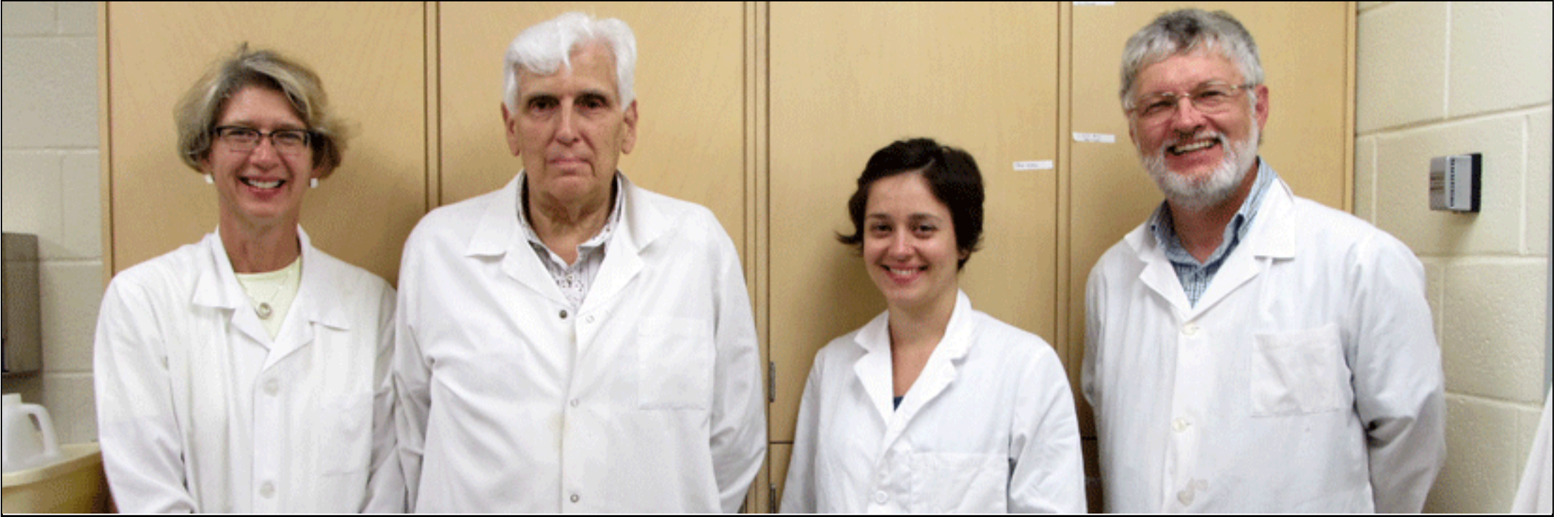


Photo: left to right: Drs. Shelley Burton, Nicholas Gallo and Dania Villarnovo, Mr. Allan MacKenzie

The members of the clinical pathology group welcomed Dr. Nicholas Gallo to the department on August 26th. He is the president of DMS Laboratories based in New Jersey. Through the donation of supplies, this parent company had generously supported the recent MVSc research project completed by **Dr. Dania Villarnovo**. Her project involved the independent evaluation of a major cross-matching kit marketed by the RapidVet-H company. The clinical pathology group enjoyed hosting Dr. Gallo and engaging in an interesting discussion of the project. results. Dr. Villarnovo presented her research at the November 2013 meeting in Montreal of the American College of Veterinary Pathologists / American Society for Veterinary Clinical Pathology.

Robert & Virginia Rausch Visiting Professorship, University of Saskatchewan



Dr. Alfonso Lopez was the recipient of the Robert and Virginia Raush Visiting Professorship granted by the Western College of Veterinary Medicine, University of Saskatchewan. During his visit, Dr. Lopez gave a keynote presentation entitled “Education in Developing Countries: How Can Universities Help.” Dr. Lopez’s message was: “Global proliferation of Internet, particularly in developing countries, opened an enormous door of opportunity for universities to share invaluable academic information. As university educators striving for excellence in teaching, we spend considerable amounts of time preparing handouts, tutorials and quizzes for our veterinary students. Why not share this information by opening the academic cyber-door? No invitation should be required and most important, it should be free. How do students in other countries find our AVC tutorials? Simply by “googleing” keywords of our individual courses; it is that easy. Some faculty may ask ‘what is in it for me?’ The answer: not too much just to know that you and your work are literally helping thousands of veterinary students worldwide, putting UPEI-AVC in the global academic map, and occasionally getting you an invitation to lecture in far away places. Truly an academic endeavor with a high impact factor, right?”

Canadian Cooperative Wildlife Health Centre



From October 29-31, 2013, six representatives from the Canadian Cooperative Wildlife Health Centre (CCWHC; **Dr. María Forzán, Dr. Scott McBurney, Dr. Heather Fenton, Darlene Weeks, Fiep deBie** and **Allysia Park**), attended the 50th Annual General Meeting of the Atlantic Society of Fish and Wildlife Biologists in Sackville, NB. Dr. Forzán provided a spirited overview of her PhD thesis entitled “The wood frog, *Rana sylvatica* (*Lithobates sylvaticus*), as a model to study the pathogenesis and host-pathogen interactions of frog virus 3”. Allysia gave an overview of the project objectives of her new position at the CCWHC as Program Coordinator, White-nose Syndrome in Bats, entitled “Canada’s response to white-nose syndrome: Plans, infrastructure and actions”. Both were very grateful to have had the chance to present in an intimate setting amongst colleagues, which facilitated informative

discussions and provided the opportunity to arrange future collaborations. Other presentations included research and current management practices related to wildlife conservation in the Atlantic region.

Dr. Alfonso Lopez Invited Speaker in Spain



Dr. Alfonso Lopez and Dr. Maribel Quiroja with faculty, residents and graduate students

Dr. Alfonso Lopez was a guest speaker at the Faculty of Veterinary Medicine, University of Santiago Compostela in Galicia, Spain (October 29-30, 2013). Invited by Dr. Maribel Quiroga, Chairperson of the Department of Veterinary Pathology, Dr Lopez gave five presentations to professors, graduate students and pathology residents. Topics of his presentations included pulmonary pathology, veterinary education in Canada and international cooperation using on-line veterinary curricula. For the last few years, AVC tutorial modules given to our undergraduate students on-line have been used by students in Spain and Latin America, as well as many other countries.

Diagnostic and Laboratory Investigations



Methicillin-resistant *Staphylococcus pseudintermedius* in Dogs

At the 3rd ASM-ESCMID Conference on MRS in Animals: Veterinary and Public Health Implications in Copenhagen, Denmark, Matt Saab, Weese JS, **Drs. Anne Muckle** and J McClure presented a paper entitled “Direct repeat unit (dru) typing of methicillin-resistant *Staphylococcus pseudintermedius* from dogs at a diagnostic laboratory in Atlantic Canada”. Methicillin-resistant *Staphylococcus pseudintermedius* (MRSP) is a leading cause of skin disease, otitis, surgical site and wound infections in dogs.



Mycoplasmal Pneumonia in Argentinean Cattle

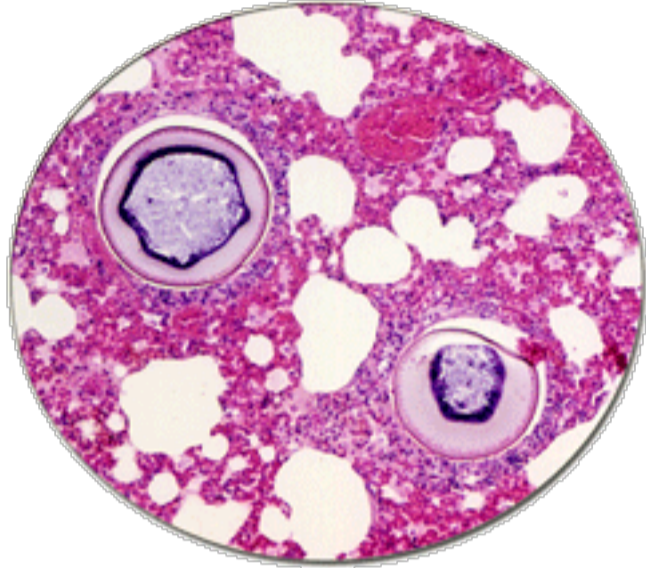
During the Brazilian Congress of Veterinary Pathology celebrated in October in Curitiba, Brazil, **Dr. Alfonso Lopez** coauthored the presentation entitled “Detection of *Mycoplasma bovis* in lung tissue of feedlot cattle: The first reported cases of mycoplasmal pneumonia in Argentina”. Dr. Lopez is working with Dr. Carlos Margineda at the Instituto Nacional de Tecnologia Agropecuaria (INTA) on field and laboratory investigations related to bovine mortality.

Candida Peritonitis in a Dog

On November 9, 2013, **Drs. Cora Gilroy**, Oriana Raab and **Paul Hanna** presented a



mystery case at the European Society of Veterinary Clinical Pathology (ESVCP) and European College of Veterinary Clinical Pathology (ECVCP) Congress held in Berlin, Germany. The case involved a 5-year-old Shetland Sheepdog that developed a uroabdomen, bacterial and fungal (*Candida glabrata*) cystitis and peritonitis. Because of effective diagnosis and treatment, this dog completely recovered.



Adiaspiromycosis in Skunks

Dr. Heather Fenton presented a case of “Adiaspiromycosis in a striped skunk” at the Western Conference of Veterinary Pathologists held in Saskatoon, October 1-5, 2013. During her visit to Saskatchewan, Heather also gave this presentation to the University of Saskatchewan student chapter of the Wildlife Disease Association on "Wildlife Health Issues in Atlantic Canada".



Ranavirus is a major concern in Green Frogs

The work of two summer seasons looking at diagnostic samples for the detection of ranavirus infection in wild frogs was published last October in the Journal of Wildlife Diseases. **Dr María Forzán**, in collaboration with Dr John Wood of Pisces Molecular Laboratory, evaluated the validity of sampling green frogs, one of the most common frogs in the Maritimes, to detect natural infection with Frog Virus 3. This ranavirus is responsible for large mortalities in numerous amphibian species.



Heart Disease in Juvenile Toy Manchester Terriers

Toy Manchester Terriers are susceptible to develop a heart disease known as Dilated Cardiomyopathy. Pathology and Microbiology researchers **Drs. Carolyn Legge, Shannon Martinson, Paul Hanna and Alfonso Lopez** in collaboration with Dr. Etienne Cote from Companion Animals and E Hare from Dog Genetics LLC in New York, recently described for the first time the detailed histopathological features of this condition. The findings were published in the journal Veterinary Pathology. **Photo:** Courtesy of Gord and Carolyn Horowits



Tuberculosis in a Northern Fulmar

Little is known about diseases of Northern fulmars (*Fulmarus glacialis*). An interesting case of tuberculosis in a Northern fulmar was presented at the Montreal meeting of the American College of Veterinary Pathologists by **Nancy Brochu** (AVC Class of 2016), **Dr. Pierre-Yves Daoust** and Zoe Lucas. This bird, an immature female from the northwest Atlantic, had severe tuberculosis caused by *Mycobacterium avium* subspecies *avium* or *silvaticum*.

Bone Regeneration in Horses



Impaired bone healing is an orthopedic problem commonly encountered in equine practice. Drs. Laurie McDuffee, Blanca Esparza and Rodolfo Nino-Fong from Health Management, and **Dr. Enrique Aburto** from Pathology and Microbiology, are investigating by means of tissue engineering and stem cells how to promote bone healing. These studies have promising application for the therapy on bone diseases in horses.

Dr. Alfonso Lopez Keynote Speaker at Western Conference of Veterinary Pathology

Dr. Alfonso Lopez was the keynote speaker and moderator for the Western Conference of Veterinary Diagnostic Pathologists that was held in Saskatoon, Saskatchewan on October 4-5, 2013. The topic for this year's conference was Pathology of the Respiratory System and Dr. Lopez's presentation was entitled "Rare and interesting alveolar lesions in pulmonary diagnostic pathology." Over 40 diagnostic case reports were presented by Canadian and American pathologists attending this conference. [Additional information](#)

Dr. Fred Kibenge, Invited Keynote Speaker at Workshop in Chile

Dr. Fred Kibenge was an invited speaker at a workshop under a research project called "Development of tools for the diagnostic of bacteria and viruses associated to emergent microhabitats from intensive aquaculture". The meeting took place in Puerto Varas, Chile, on December 2, 2013. He presented on the topic "Global Trends in Diagnostic Methods for Aquatic Animal Diseases, with Special Emphasis on Infectious Salmon Anemia (ISA). For further information please [click here](#).

Dr. Fred Kibenge, Invited Keynote Speaker at GOAL Conference in France

Dr. Fred Kibenge was an invited speaker and one of 6 panel discussion participants on the Early Mortality Syndrome (EMS) in Shrimp at the Global Outlook on Aquaculture Leadership (GOAL) 2013 Conference in Paris, France, October 7 – 10, 2013. He provided an update on Infectious Salmon Anemia (ISA). GOAL is one of the most elite aquaculture meetings in the world. It is held annually in different locations. Dr. Kibenge was also a past invited speaker and one of 6 panel discussion participants on The Recovery of the Chilean Salmon Industry at the GOAL 2011 Conference in Santiago, Chile, November 6 – 9, 2011. For further information please [click here](#).

Four Stranded Pilot Whales



Pierre Daoust, Heather Fenton, Michelle Gorayeb, Jessica Gelernter, Nancy Brochu, Darlene Weeks, Fiep deBie, Art Ortenburger

On November 5, 2013, pathologists **Drs. Pierre-Yves Daoust** and **Heather Fenton** as well as technicians Darlene Weeks and **Fiep deBie** with Dr. Art Ortenburger and three keen veterinary students responded to four stranded pilot whales near Murray Corner, New Brunswick. The cause of the stranding is currently not completely understood although it appears that the youngest female calf had evidence of pneumonia. Dr. Rob Lofstedt was also consulted in order to better understand the reproductive development of the whales. For more information visit: <http://loriotherspp.blogspot.ca/2013/11/the-reproductive-tract-of-pilot->

Former Graduate Student Dr. Samuel Workenhe's Research Hits the News

Recent studies conducted by former graduate student **Dr. Samuel Workenhe** have received a lot of attention. Under the leadership of Dr. Karen Mossman, Chair of McMaster's Department of Biochemistry and Biomedical Sciences, Dr. Workenhe has been investigating the effect of combining chemotherapy with Herpes virus (oncolytic virotherapy) for the treatment of cancer, and so far, these studies are showing promising results in killing cancer cells. For more information please follow these links;

[Chemotherapy and Herpes can help fight cancer](#)

[Molecular therapy](#)

Necropsy Laboratory for Holland College Students at AVC



Holland College Students

The Canadian Cooperative Wildlife Health Centre (CCWHC) has a long-standing collaborative relationship with the Holland College Wildlife Conservation Technology (WCT) program. Members are often invited guest speakers during the two year course and necropsy demonstration laboratories are often held in the post mortem facility at the Atlantic Veterinary College. Recently, both **Dr. Heather Fenton** and **Dr. Maria Forzan** have given invited lectures to the students on the topics of zoonotic diseases and necropsy techniques and amphibian biology, physiology and diseases respectively. The first year WCT students participated in a small mammal necropsy laboratory on December 9, 2013, to learn basic anatomy, safe techniques and appropriate tissue collection. Members of the CCWHC would like to thank **Leonard Doucette**, **Darren MacEachern** and **Darlene Weeks** for their assistance with the laboratory.

Recent Publications

Forzan MJ, Wood J. Low detection of ranavirus DNA in wild postmetamorphic green frogs, *Rana (Lithobates) clamitans*, despite previous or concurrent tadpole mortality. *Journal of Wildlife Diseases* 2013; 49:879-886.

Legge CH, Lopez A, Hanna P, Cote e, Hare E, Martinson SA. Histological characterization of dilated cardiomyopathy in the Juvenile Toy Manchester Terrier. *Veterinary Pathology* 2013; 50:1043-1052.

Siah A, McKenna P, Berthe FCJ, Afonso LOB, Danger JM. Transcriptome analysis of neoplastic hemocytes in soft-shell clams *Mya arenaria*: Focus on cell cycle molecular mechanism. *Results in Immunology* 2013; 3:95-103.

McDuffee LA, Esparaza-Gonzalez BP, Nino-Fong R, Aburto E. Evaluation of an in vivo heterotopic model of osteogenic differentiation of equine bone marrow and muscle mesenchymal stem cells in fibrin glue scaffold. *Cell and Tissue Research* 2013; Published online 21 November 2013, DOI: 10.1007/s00441-013-1742-3.

Godoy MG, Kibenge MJT, Suarez R, Lazo E, Heisinger A, Aguinaga J, Bravo D, Mendoza J, Llegues KO, Avendano-Herrera R, Vera C, Mardones F, Kibenge FSB. Infectious salmon anaemia virus (ISAV) in Chilean Atlantic salmon (*Salmo salar*) aquaculture: emergence of low pathogenic ISAV-HPR0 and re-emergence of virulent ISAV-HPRΔ: HPR3 and HPR14. *Virology Journal*, 10:334. [Highly accessed article].

Igboeli OO , Burka JF, Fast MD. 2013. Sea lice population and gender differences in P-glycoprotein expression and emamectin benzoate resistance on salmon farms in the Bay of Fundy, New Brunswick, Canada. Pest Management Science 2013; Published online 29 August 2013, DOI: 10.1002/ps.3620.

Uehlinger FD, Greenwood SJ, McClure JT, Conboy G, O'Handley R, Barkema HW. Zoonotic potential of *Giardia duodenalis* and *Cryptosporidium spp.* and prevalence of intestinal parasites in young dogs from different populations on PEI, Canada. Veterinary Parasitology 2013; 196:509-514.

Bustin, S., *et al* (84 Contributing Authors including Kibenge FSB and Kibenge MJT). The need for transparency and good practices in the qPCR literature. Nature Methods 2013; 10:1063-1067.

Harkness JE, Guselle NJ, Speare DJ. Demonstrated efficacy of a pilot heterologous whole-spore vaccine against microsporidial gill disease in rainbow trout. Clinical and Vaccine Immunology 2013; 20:1483-1484.

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For comments and suggestions please contact us by e-mail:

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