

The Chair's 2016 Department Report Card



2016 like 2015 was a year of readjustment. The department is leaner and more nimble in its operations. The department performance indicators remained strong and continued trending upwards. I am therefore proud to report the following sample of achievements of our faculty, staff and students:

Retirements:The following faculty members retired in 2016: **Dr. Barb Horney;** **Dr. Scott McBurney.** The following staff member retired in 2016: **Diane MacLean.**

Appointments: **Dr. Fred Kibenge** re-appointed to NSERC Genes, Cells and Molecules Evaluation Group (EG 1501) for one more year.

Faculty Awards: **Dr. Juan Carlos Rodriguez-Lecompte**-2015-2016 UPEI Merit Award for Scholarly Achievement; **Dr. Cora Gilroy**-2015-2016 UPEI Hessian Merit Award for Excellence in Teaching; **Dr. Dave Speare**- 25 Year UPEI Service award; **Dr. Alfonso Lopez**- 2016 Laboratorian of the Year award; **Dr. Anne Muckle**- Student American Veterinary Medical Association (SAVMA) Community Outreach & Education award.

Publications: Faculty members published a combined total of 37 peer-reviewed articles and 15 book chapters.

Books Published: **Dr. Fred Kibenge**- Aquaculture Virology.

Grants Received: The following faculty members were successful in obtaining research funding in 2016.

Dr. Fred Kibenge- NSERC Discovery Grant renewed; **Dr. Mark Fast**-Innovation PEI Pilot and Discovery Fund Grant, NSERC Engage Grant, Ocean Frontier Institute Grant, Genome Canada Grant; **Dr. Juan Carlos Rodriguez-Lecompte**- Canadian Poultry Research Council (CPRC) Grant, **Dr. Pierre-Yves Daoust**- Nunavut Research Institute (NRI) Research Grant in partnership with Irving Shipbuilding Inc.

Graduate Student Grants: **Alyson Brown** (MSc) student, winner of the Graduate and Post-Doctoral Fellowship Fund awarded by Innovation PEI.

Thesis Defenses: Six graduate students successfully defended their theses 3 - PhDs- **Dr, Melanie Buote,** **Dr. Ori Elad,** **Dr. Maria Forzán;** 2- MScs- **Jocelyn Perez-Lazo,** **John Davidson;** 1 -MVSc- **Fany Marron.**

Graduate Student Awards: The following graduate students won awards at AVC 24th Annual GS&R Days 2016:

Sarah McConnachie- 2016 Office of Graduate Studies Award of Distinction; **Kami Harris**- John and Carol MacLeod award for Research Communication Excellence, Best Overall PhD Graduate Student Presentation and 2016 Department of Pathology and Microbiology Best Seminar Series award;

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Laura Ross- 2016 Dr. Basil Ikede award in Diagnostic Veterinary Sciences and 2016 Charles Louis Davis and Samuel Wesley DVM Foundation award; **Jordan Poley**- Best Paper Presentation; Dr. **Laura Braden**- won the Best Overall Postdoctoral Presentation.

Convocation Awards: The 2016 Governor General's Gold medal award (graduate level) went to **Dr. Maria Forzán**.

2017 promises ever more innovation and excellence in our teaching, research and professional service functions. Read on.

"Don't find fault- find a remedy": Henry Ford, Industrialist.

Fred Kibenge

Winner of the 2017 Zoetis Award for Research Excellence



Congratulations to **Dr. Juan Carlos Rodriguez-Lecompte**, recipient of the 2017 Zoetis Award for Research Excellence. The award is given by each North American veterinary college, and Dr. Rodriguez will be presented with it at the Graduate Student Research Days on May 18 and 19, 2017. His invited Zoetis Lecture entitled "A Sweet Passion: Immunology" is scheduled on Day 2, Friday, May 19 at 9:00 am.

Job well done Dr. Rodriguez-Lecompte!

Dr. Shelley Burton Finishes Term as ASVCP President



Dr. Shelley Burton recently finished her ~14 month term as President of The American Society for Veterinary Clinical Pathology (ASVCP). She stepped down on December 4th and was pleased to welcome Dr. Lindsay Tomlinson as incoming President at a meeting in New Orleans. As part of a 3 year elected term, Dr. Burton will continue to serve for 1 final year as Immediate Past-President on the Executive Board of the ASVCP.

Photo: Dr. Shelley Burton handing over the gavel to incoming ASVCP President, Dr. Lindsay Tomlinson. Photo courtesy of the ASVCP.

Recent Research Grants



Congratulations to **Dr. Mark Fast** who has been awarded an NSERC-CRD 2 -year grant worth \$780,000 with Elanco Canada Ltd, for the project titled “The responses of sea lice to novel parasiticides and their differing modes of action”. The project is to determine modes of action of new therapeutics being used in salmon aquaculture to control sea lice infection. The study involves the use of high throughput sequencing and metabolomics approaches to identify responses of the parasite in conjunction with functional assessment through electron microscopy (EM).

Photo: Dr. Mark Fast and Soojin Jeon, PhD student from University of Florida.

Congratulations to **Drs Mark Fast**, Larry Hammell and Jonathan Spears who have been granted a 6-month research contract of \$48,441 by the Canadian Food Inspection Agency (CFIA). This grant is for the project titled “Preliminary assessment of SCV virus detection capabilities in preparation for further investigation into selected concentration protocols of iodine and chlorine disinfectants for Spring Viraemia of Carp Virus (SVCV) in the presence of zebrafish embryos”.

Well done Dr. Fast!



Congratulations to **Drs. Cornelia Gilroy**, **Shelley Burton**, **Kimberley Foote**, Raphael Vanderstichel and Emily John who were granted funding over 2 years of \$4771.00 in the 2017 Sir James Dunn Animal Welfare Centre (SJDAWC) competition. This grant is for the research proposal, “Appropriate prognosis and treatment of horses with respiratory disease – assessing microscopic area and sample volume of bronchoalveolar lavage fluid”. Dr. Kimberley Foote will be extensively involved in this project as part of her Master of Veterinary Science degree in Clinical Pathology.

Well done Drs. Gilroy, Burton and Foote!

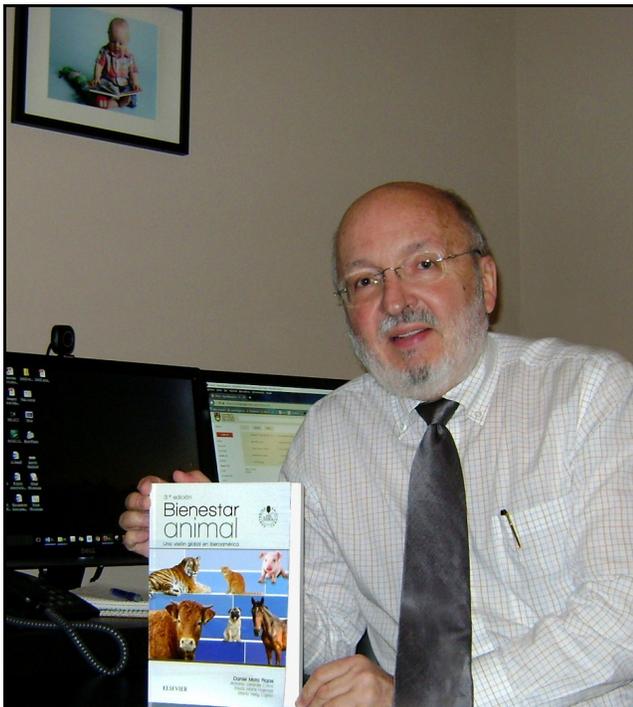
Photo: left to right: Drs. Cornelia Gilroy, Kimberley Foote and Shelley Burton.

New Edition of Pathologic Basis of Veterinary Disease



The 6th edition of Pathologic Basis of Veterinary Diseases recently appeared in bookstores. This book has long been one of the bestselling books for Elsevier in veterinary medicine. With over 2100 full-color figures and illustrations, Pathologic Basis of Veterinary Diseases is the preferred pathology textbook for DVM students in Canada, the US and many other countries around the globe. This book covers both general and systemic pathology, stressing diseases of domestic animal species and covering the mechanisms of disease development and the resulting functional and structural changes in the host. **Dr. Alfonso López** and **Dr. Shannon Martinson** are the authors of the chapter on the pathology of the respiratory tract which illustrates many gross and microscopic pictures taken from routine post-mortem cases done at AVC's Diagnostic Services.

“Bienestar Animal” a Textbook on Animal Welfare for Spanish-Speaking Countries



Elsevier recently published the 3rd edition of "Bienestar Animal," a 500-page book written in Spanish concerning issues of animal welfare. Mexico was the initial market for earlier editions, but the demand grew rapidly in Spanish-speaking countries, and now this 3rd edition is the standard reference book for DVM students, veterinarians, animal organizations, and governments in Latin America and Spain. Dr. Daniel Mota, Universidad Metropolitana in Mexico, is the editor and chapter contributors include authors from 7 Latin American countries, Spain, Portugal, and Canada. **Dr. Alfonso Lopez**, Professor Emeritus, and Dr. Julio Martinez-Burnes (PhD AVC 2001) coauthored Chapter 5 entitled "Animal welfare of neonatal pigs." For the last 15 years, Dr. Lopez has been part of a multi-disciplinary team investigating the pathophysiology of stress, perinatal diseases, and mortality in piglets.

Chinook Project 2017



The Chinook Project completed its eleventh year of clinics in May – June 2016. As a charitable mobile veterinary service, the project has held 19 clinics in 11 different locations and has seen over 1,600 animals. It has performed over 850 spay and neuter surgeries have been performed with the participation of 61 fourth year veterinary students from all over Canada, and the USA.

Planning is underway for the 2017 season. A team of three veterinarians (Dr. Heather Gunn McQuillan, Dr. Alison Pollard and Dr. Marti Hopson) will travel with five senior veterinary students to Nunavut. Last year the team had good success pairing with the Iqaluit Humane Society.

They will continue to work with project organizers on coordination – this time sending participants to a smaller remote community. The tentative plan is to visit Igloolik, which is located on Igloolik Island, close to the Melville Peninsula and above the Arctic Circle. The population of this town is ~1600. For the participants this will likely be a once in a lifetime experience to consider the history (archaeological sites dating back 4000 years) and modern day concerns (global warming, culture, ecology, societal issues) while visiting this community.

The Chinook Project is participating in the CVMA Convention in July 2017. **Drs. Lisa Miller and Marti Hopson** will be presenting a lecture as well as participating in 2 panel discussions on animal welfare and access to veterinary care. Project co-ordinators have also received recent support from Veterinarians without Borders and are working with them on an expanded initiative to support Canada's veterinary colleges providing veterinary care to remote, under-served communities in Canada's north.



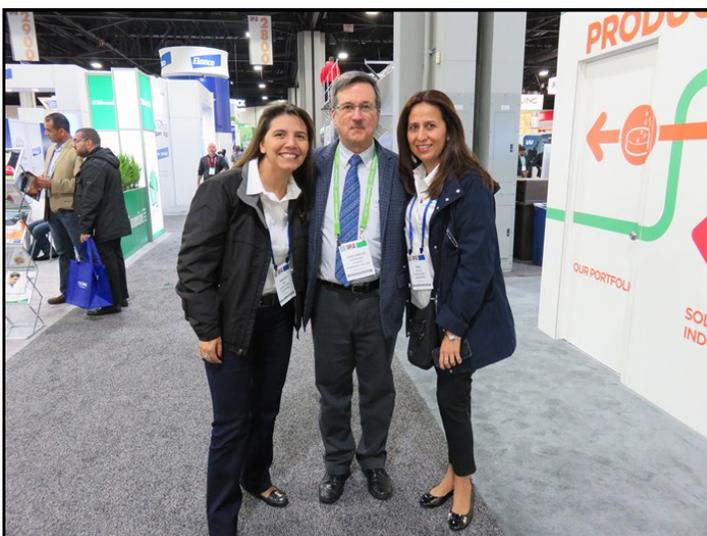
What's New in Dr. Juan Carlos Rodríguez's Laboratory?



Dr. Rodríguez-Lecompte's research focuses on the nutritional and immunological factors regulating immune responses, animal health, and food safety, allowing him to participate in two important meetings with the Poultry industry in the Dominican Republic (Santo Domingo and Santiago de los Caballeros) on January 26 - 27, respectively. As a keynote speaker, he delivered a talk entitled 'Impact of the intestinal integrity in the health of chickens'.



During the 2017 Atlantic Poultry Conference in Greenwich, NS, on February 14-16, **Dr. Rodríguez-Lecompte** was a keynote speaker, where he delivered a talk entitled 'Structure and function of the Respiratory System in Chickens'. It is a contribution of his research focus in mucosal-associated lymphoid tissue and the respiratory immune system. Dr. Rodríguez is collaborating with colleagues and producers in Atlantic Canada in his area of research.



Dr. Rodríguez-Lecompte was invited to participate in the Merial Poultry Infectious Bursal Disease Summit II and vaccination workshop in Atlanta, GA. He had the opportunity to share with the international guest speakers his current research about this important immunosuppressive virus in chickens. Also, Dr. Rodríguez assisted in the International Production & Processing Expo and International Poultry Scientific Forum where he was updating important information for his courses Diseases of Poultry and Poultry Production Systems.

Photo: Drs. Angelica Daza, J. Rodríguez, and Irma Reyes

Wildlife Conservation Students get their Hands Dirty During CWHC Atlantic's Annual Necropsy Course



On February 28, 2017, CWHC Atlantic hosted its annual white-tailed deer necropsy wet laboratory for students enrolled in the Wildlife Conservation Technology program at Holland College, Prince Edward Island. CWHC members conducting this laboratory were wildlife pathologists, **Drs. Pierre-Yves Daoust** (Regional Director) and **Scott McBurney**, and wildlife technician **Darlene Weeks**.

The focus of such necropsy wet laboratories is to learn proper necropsy techniques and indicators of health in white-tailed deer. The students determined the age, sex and body condition of white-tailed deer that had died

as a result of a vehicular collision in New Brunswick. In the female specimens, they also determined reproductive status and aged the fetuses of the pregnant animals. Lastly, they examined all of the deer for *Parelaphostrongylus tenuis*, the “brainworm” parasite that commonly infects white-tailed deer.

Special thanks to the New Brunswick Department of Natural Resources for the provision of the white-tailed deer carcasses for teaching purposes. Also thanks to the staff and students of the Holland College Wildlife Conservation Technology program for their continued enthusiasm and collaboration.

Article and photo contributed by Darlene Weeks, Wildlife Technician CWHC Atlantic Region.

Photo: Dr. Scott McBurney (blue apron) and Darlene Weeks (yellow apron) with students of Holland College Wildlife Conservation program.

Science Atlantic Biology & Aquaculture & Fisheries Conference Presenters



On March 10-12, 2017, four students (**Alyson Brown, Laura Carvalho, Dylan Michaud, and Carter VanDerstine**) from **Dr. Mark Fast's** laboratory presented their research at the annual Science Atlantic Biology and Aquaculture and Fisheries Conference, held at St Francis Xavier University, in Antigonish, Nova Scotia.

Congratulations to **Dylan Michaud** who won 2nd place in the Graduate Student Presentation section.

Well done Dylan!

The Cross-Atlantic Sea Lice Initiative

The goal of the Cross Atlantic Salmon Lice project is to develop collaborative research activities between leading researchers and research institutions involved in sea lice research in Canada and Norway. This is specifically between the University of Prince Edward Island, through **Dr. Mark Fast's** laboratory and the Universities of Bergen, Norway and Victoria, BC. The diverse expertise of participants in sea lice biology, host-parasite interactions, functional genomics/ molecular biology, pharmacology and nutrition makes this consortium a very strong entity. The project, Cross-Atlantic Sea Lice Initiative (CASL), is funded by the Norwegian Research Council. The aim of the project is to increase collaboration in research regarding the salmon louse by providing funds for travel by students and researchers working in sea lice research from Canada to Norway and vice versa. These collaborations are intended to enhance the quality of the research but also to open up opportunities to utilize new types of experimental infrastructure and resources. In the long term, this type of collaboration is essential to offer the aquaculture industry solutions to handle sea lice in a sustainable manner.

Individual students (Masters, PhD and post-doc) have the opportunity to travel to Norway or Canada for 2-4 weeks to gain experience in techniques while other funding is available for groups to participate in workshops and short courses (about a week in duration). Through this initiative, students will gain access to a broader range of research activities and techniques and, to internationally leading experts in sea lice research. **Jordan Poley**, a PhD candidate with Dr. Fast, travelled to the University of Bergen this past summer as part of the first summer workshop series. "It was so great to have an opportunity to learn about the newest and upcoming molecular technologies used in sea lice research. These techniques are not only useful for lice research, but will be invaluable for any molecular application in the future." **Dr. Sara Purcell**, laboratory manager of Dr. Fast's Research Group, also travelled to Bergen in January: "It was an amazing opportunity for me to learn new techniques alongside researchers at the Sea Lice Research Centre. I was excited to travel to Bergen and be a part of the collaboration."

In addition, sea lice researchers from all over the world recently gathered in PEI in November 2016 for the first of three workshops focused on developing new research collaborations. Face-to-face meetings such as these provide a more productive environment for complex discussion and ensure that all viewpoints are adequately explored, thereby building consensus around research questions, sharing methodologies and tasks and identifying gaps in current knowledge.



Next summer, students and researchers from the University of Bergen will have the same opportunity to learn new techniques at the Atlantic Veterinary College.

Photo: left to right: Christiane Eichner (Bergen) **Shona Whyte (UPEI)** Stanko Skugor (Oslo)

Sara Purcell (UPEI) Amber Messmer (Victoria) **Jordan Poley (UPEI)** Jong Leong (Victoria) Tiago Hori (CATC) **Mark Fast (UPEI)** **Laura Braden (UPEI)** Michael Dondrup (Bergen) Simon Jones (DFO- Nanaimo) Aina-Cathrine Øvergård (Bergen) Sussie Dalvin (bergen) Rune Male (Bergen) Gregor McEwan (**UPEI**) Frank Nilsen (Bergen)

The Nature of Things turns to AVC

The team behind *the Nature of Things with David Suzuki* has been hard at work to produce a new documentary series called *The Wild Canadian Year*. Airing in September 2017, this highly anticipated five-part legacy series will show Canada's extraordinary wildlife through the lens of its four distinct seasons.

The team had little luck getting footage of foxes displaying their characteristic pouncing behaviour in the snow, to catch mice and voles. To fill in these gaps, they turned to our little island overrun by foxes. The production team got in contact with UPEI's Biology department but was quickly referred to AVC's **Jordi Segers**, who spends a lot of his spare time observing and photographing foxes in Charlottetown. In preparation for the film crew's arrival, Jordi worked with the production team to help get a team of volunteers from the Holland College Wildlife Conservation Technology group together and select suitable film locations in and around Charlottetown.

In the winter of 2016 the film crew arrived on the island but shortly after a big thaw cleared most of the island of its snow. This winter the crew came back just in time for the big snow storms and were able to spend a full week on the Confederation Trail in Charlottetown to film our island foxes. With the help of Jordi and other volunteers, who tirelessly scouted along the trails, the team was able to work very efficiently and respond to calls about fox activity, focusing their energy on those places where they were the most likely to get the footage they were after. Despite all this preparation, all the help, and the ease of finding foxes in Charlottetown, it was no easy feat to capture their leaping behaviour on camera, but nonetheless the team was successful in the end. Keep your eye on CBC for *The Wild Canadian Year* in September: <http://www.cbc.ca/wildcanadianyear/>



Photo by Jordi Seger, Program Coordinator, with CWHC

Recent Publications

McEwan GF, Groner ML, Burnett DL, Fast MD, Revie CW. Managing aquatic parasites for reduced drug resistance: lessons from the land. J.R. Soc. Interface 13: 20160830. [Http://dx.doi.org/10.1098/rsif.2016.0830](http://dx.doi.org/10.1098/rsif.2016.0830).

Fenton H, Daoust PY, Forzán M, Vanderstichel RV, Ford JKB, Spaven L, Lair S, Raverty S. Causes of mortality of harbor porpoises *Phocoena phocoena* along the Atlantic and Pacific coasts of Canada. Diseases of Aquatic Organisms 2017; 122: 171-183 doi: 10.3354/dao03080.

Lopera-Toro PA, Rodriguez-Lecompte JC. Marek Disease Virus: molecular approach to the virus and host immune response. Med.Zootec.2016; 11: 71-85.

Forzán MJ, Heatley J, Russell KE, Horney B. Clinical pathology of amphibians: a review. Veterinary Clinical Pathology 2017; 0/0:1-23 DOI:10.1111/vcp.12452.

Villa-Arcila NA, Duque-Madrid PC, Sanchez-Arias S, Rodriguez-Lecompte JC, Ratto MH, Sanchez J, Ceballos-Marquez A. Biturate concentration before and after calving is not associated with the odds of subclinical mastitis in grazing dairy cows. Livestock Science Journal 2017;198:195-200.

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

