

## Canadian National White-Nose Syndrome Program Funding Continues



Congratulations to **Drs. Pierre-Yves Daoust , Scott McBurney and Jordi Segers** (Canadian National Coordinator, Bat White-Nose Syndrome Program) of the Canadian Wildlife Health Cooperative (CWHC), Atlantic Region, who have received a \$100,000-contract with Environment Canada. This program has been approved to extend the Canadian National White-Nose Syndrome Program Funding for the fiscal year 2016-17.

This additional year of funding represents the 3rd year for the program, and CWHC, Atlantic Region receives the bulk of the funding (\$80-85 K) because the Canadian National Bat White-Nose Syndrome Coordinator's position is embedded in this Centre.

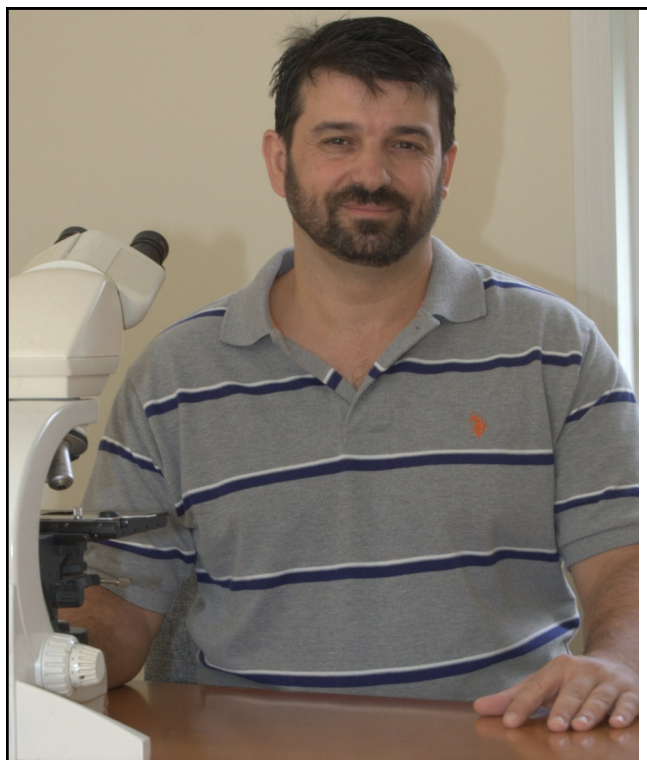
The Coordinator's role will be integral as the Canadian program moves from disease response to recovery of the endangered bat

species affected by Bat White-Nose Syndrome. Therefore, the continuation of this program is good news for bats, and it is exciting that the Atlantic Region section of the CWHC continues to play a role regionally, nationally and internationally in matters related to this important wildlife management issue. Well done CWHC Team!

Photo: Jordi Segers (Canadian National Coordinator, Bat White-nose Syndrome Program) Photo courtesy of Don MacAlpine.

## Welcome to our New Graduate Students

### Dr. Carlos Lopez -Mendez



**Dr. Lopez-Mendez** is originally from Spain and received his DVM (BSc. In Veterinary Medicine) from University Santiago de Compostela. Shortly after graduation, he moved to England where he worked for a few years in Food Inspection and Animal Welfare. Dr. Lopez-Mendez then did an MSc in Toxicology in the University of Surrey in 2005 and started working as toxicopathologist in a GLP Contract Research Laboratory for several years where he gained sound knowledge of rodent pathology in drug discovery and regulatory toxicology.

As he progressed in his career, he decided to embark upon a pathology residency program to gain ACVP certification. He arrived at the Atlantic Veterinary College in September 2011 to begin his residency training and MVSc program that he successfully completed in September 2014. He had the opportunity to work with Dr. Sunny Hartwig in rodent nephropathology in a project on transcription factor Sox4. Carlos is currently preparing for the second phase of the ACVP certifying examination and has started a Post Graduate Diploma in Fish Pathology mentored by **Drs. Paul Hanna** and **David Groman**. Carlos commented on his new project:

*"... I am very impressed with the faculty within the Department of Pathology and Microbiology and the Diagnostic Services unit; they have so much to offer to support aquaculture, a rapidly expanding animal production, with a bright future in Canada and in PEI. I am delighted to have this opportunity to gain specific knowledge in finfish and shellfish pathology."*

Photo: Dr. Carlos Lopez-Mendez

### Kami Harris

**Kami Harris** began her university career at Mount Allison University (MTA) in Sackville, NB where she obtained a BSc in biology. She returned to the following year to complete an honours thesis on barcoding dinoflagellates. Kami once again returned to MTA to pursue an MSc, which she completed in December 2014. Her thesis centered on the imprint control region of *Drosophila melanogaster*. During that time Kami also worked on a number of other research projects involving ticks and Lyme disease. Her work with Lyme disease ultimately led her to the AVC where she is enrolled in the PhD program under the supervision of **Dr. Pierre-Yves Daoust** and Dr. Vett Lloyd (MTA). Her proposed research will determine the bacterial strains present in Maritime ticks and identify the potential animal reservoirs for Lyme disease.

Photo: Kami Harris





## Pathology & Microbiology Alumni - Dr. Christiana Glover



**Dr. Christiana Glover** moved to Montreal, Quebec in August 2005 after she graduated from the AVC (MVSc/ Residency in Anatomic Pathology) and she has since been working at ITR Laboratories Canada Inc. This is a contract research organization (CRO) where Christiana works as a toxicologic anatomic pathologist. Her responsibilities include but are not limited to evaluating and interpreting slides for good laboratory practice (GLP) and Non-GLP studies on a variety of species such as rodents, rabbits, dogs, minipigs and non-human primates. She also ensures that the morphologic pathology data obtained from nonclinical studies used in the development of new biological and chemical entities are accurate. Dr. Glover also supervises necropsies and provides technical and scientific support to the post-life team. Christiana interacts with prospective and current clients by addressing and supporting their needs and thus promotes ITR's services and capabilities. The experience she has gained during

her years at the AVC helped her to transition smoothly into this role at ITR. Her earlier years at ITR Laboratories were spent working and preparing towards the ACVP certifying examination which she successfully passed to become a boarded Diplomate in Anatomic Pathology in 2010. Christiana is currently a senior veterinary pathologist and the only ACVP board certified pathologist in ITR. She has a recent publication entitled, "Artifactual stratum corneum calcification of the Beagle dog tongue."

Glover C, Ochoa,R. Artifactual stratum corneum calcification of the Beagle dog tongue. Toxicologic Pathology 2014; 43: 733-736.

Photo: Dr. Christiana Glover

## Fast Laboratory : Congratulations to Jordan Poley on Placing 1st



**Jordan Poley** is a PhD candidate supervised by **Dr. Mark Fast**. Recently, presented his work on sea lice responses to *cypermethrin* and *azamethiphos* at the 9<sup>th</sup> International Symposium on Fish Parasites in Valencia, Spain, where he was awarded the 1<sup>st</sup> Best Oral Presentation prize for his work.

Jordan's research focuses on the identification of genetic markers in sea lice. Specifically, his aim is to understand the response and resistance mechanisms involved with drug treatments used in aquaculture.

Photo: Jordan Poley

## Rodriguez Lab:

### Advanced Avian Immunology Course



**Dr. Juan Carlos Rodriguez** offered the first course in advanced avian immunology to graduate students interested in enhancing their knowledge in the poultry field. This was an intensive course to bring students up to date with the importance of the poultry Industry. The course covered seminars in basic immunology, immune responses, immunomodulation, and how to apply serology to different poultry production systems and management.

As well as daily seminars, students were involved in hands on laboratory techniques. The course ran from July 13-17, 2015.

Photo left to right: Ori Elad, Dr. Pablo Lopera, and William Hannad

### National and International Molecular Immunology Techniques Training

**Dr. Juan Carlos Rodriguez's** laboratory gave a two week training course in molecular immunology techniques. This was graduate level training involving hands on experience in plasmid DNA purification, gel electrophoresis, cloning, PCR, qRT-PCR, Western blotting, *in situ* hybridization and ELISA.

Students participating in the course were from Colombia (University of Antioquia) and Canada (Dalhousie University). Laboratory trainers were **Patty McKenna** (Technician), **Ori Elad** (PhD student) and **Dr. Juan Carlos Rodriguez**. The course took place from July 13-24, 2015.

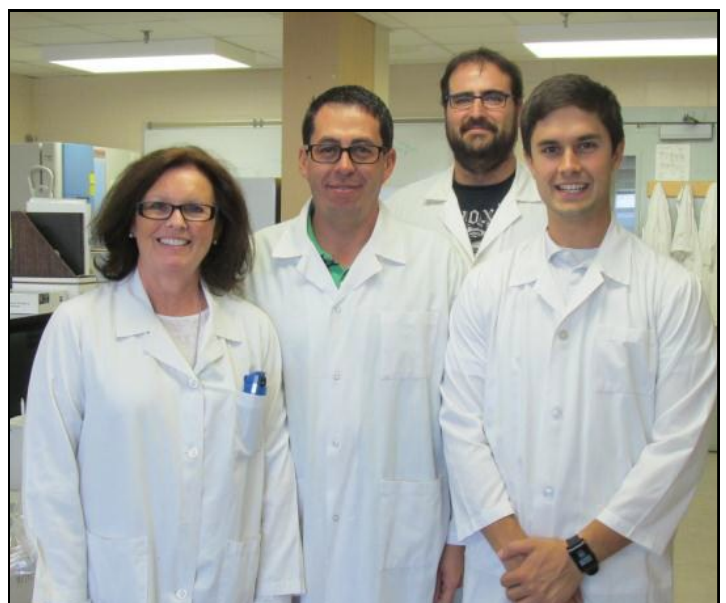


Photo left to right: Patty McKenna, Dr. Pablo Lopera, Ori Elad, and William Hannad

## Poultry Science Association Conference

**Ori Elad** (PhD candidate) and his supervisor, **Dr. Juan Carlos Rodriguez**, each presented an oral presentation at the 2015 Poultry Science Association Annual Meeting in Louisville, Kentucky, in July 2015. This was a great opportunity for Ori to present his PhD project entitled “Nutritional Epigenetic Characterization of Chicken B Cell Receptors”; Meetings of this caliber are very helpful to students allowing them to hear what other colleagues are studying and discovering in the same field. It also is a great opportunity to meet new people and discuss projects as well as finding possible future job opportunities. **Dr. Juan Carlos Rodriguez’s** presentation was on updated information of his current research about the role of Vitamin D as an immunomodulator on chicken B cells.

Photo : Ori Elad



Photo: Dr. Juan Carlos Rodriguez



## Mycoplasma and Immunity Conference

**Dr. Juan Carlos Rodriguez** was invited to participate in the Asociacion de Veterinarios Especialistas en Avicultura del Occidente (AVECAO) 2015 annual meeting in Tepatitlan, Jalisco, Mexico, August 13th and 14th, 2015. This International meeting was attended by 350 people involved in the Mexican poultry industry; **Dr. Juan Carlos Rodriguez** gave a presentation entitled, “Mycoplasma and Immunity” and also attended the annual general meeting.



From the Left to right: Drs. Luis E. Angulo Cedeño (AVECAO-President), JC Rodriguez, José A. García Flores (AVECAO-Scientific committee), Miguel Angel Márquez (Poultry consultant), María G. López Murguía (AVECAO-Vice-President), Robert Webster (St. Jude Children Hospital), Gustavo González Ramírez (AVECAO- Diffusion & business), and Miguel A. Casillas Vázquez (AVECAO-Secretary).



## Recent Thesis Defenses

### Fast Laboratory : Congratulations to Dr. Ravinder Sappal



Congratulations to **Dr. Ravinder Sappal** who successfully defended her PhD thesis [Mitochondrial bioenergetics: An integrated platform to study interactions of multiple stressors] on Friday September 18, 2015. Ravinder was co-supervised by Dr. Collins Kamunde (Biomedical Sciences) and **Dr. Mark Fast. Dr. Paul Hanna** chaired the Examination Committee. Congratulations Ravinder!

Photo Dr. Ravinder Sappal

### Johnson Laboratory: Congratulations to John Davidson

Congratulations to **John Davidson** who successfully defended his MSc thesis [Optimal treatment regimes from productivity and economic standpoints: The management of suspended mussel lines using high pressure water treatments for the vase tunicate, *Ciona intestinalis*] on Wednesday September 23, 2015. John was co-supervised by **Dr. Gerry Johnson** and Dr. Pedro Quijon (Biology). **Dr. Dave Speare** chaired the examination committee. Congratulations John!

Photo: John Davidson



## Congratulations to the Pathology and Microbiology Winners of the 2015 AVC Summer Research and Leadership Program Poster Presentations



Photo: First Place Winner- John Greenan

Congratulations to the first place winner, **John Greenan**, supervised by **Dr. Chelsea Martin**.

A native of Charlottetown, John obtained his BSc from UPEI and a BEd from St. Thomas University before attending the AVC. After future completion of his DVM degree, John's tentative plans are to practice small animal medicine, and possibly further studies in the areas of pathology or internal medicine.

His summer project, under the supervision of Dr. Chelsea Martin, was the evaluation of mPGEs-1 expression and Akt activation in feline oral squamous cell carcinoma using immunohistochemistry. These inflammation associated molecules are considered potential therapeutic targets. Further studies may elucidate methods of targeting inflammation in treatment of feline oral squamous cell carcinoma as an alternative to current cyclooxygenase inhibitor use.

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Congratulations to the third place winner, **Terra MacDonald**, supervised by **Dr. Fred Kibenge**.

Terra is a third year veterinary student originally from Truro, Nova Scotia where she attended the Dalhousie Agricultural Campus (formerly the Nova Scotia Agricultural College). Over the past year while also attending her second year at AVC, she has completed her honour's project and will earn her undergraduate degree, a Bachelor of Science majoring in Animal Science in May 2016.

Terra's project focused on developing more sensitive methods of detecting and quantitating Infectious Salmon Anemia (ISA) virus isolates. As ISA is a reportable disease and early detection and quarantine is a key in preventing massive losses, she believes these results could provide valuable insight into ways to improve current methods. Terra was pleased to be chosen to receive an award for her poster and presentation through the Summer Leadership Program. She was encouraged to know that she was able to express her results and ideas in a way that her peers and mentors enjoyed and understood.



Photo: Third Place-Winner Terra MacDonald

## 2014-2015 Student Assistants Working in Pathology and Microbiology

Brad Caissie	Fish Health (M. Fast)	May5/14-Nov 30/15
Wilson Chung	Fish Health (M. Fast)	May 5/14- Nov 30/15
Rebecca Croke	Fish Health (M. Fast)	May 5/14-Nov 30/15
Nicolle Davis	Wildlife-(P.Y.Daoust)	May 4/15-Aug 20/15
Kaitlyn Fitzpatrick	Fish Health (M. Fast)	Aug 8/14-Nov 24/15
John Greenan	Cancer Pathology (C. Martin)	May 19/15-Aug20/15
Alex Johnston	Fish Health (M. Fast)	May 5/14-Dec 1/15
Lauren, Korecky	Fish Health (M. Fast)	May 5/14-Nov 30/15
Ryan LaBang	Fish Health (M. Fast)	Jan 5/14-Nov 24/15
Terra MacDonald	Aquaculture Virology-(F.Kibenge)	March /15-Dec 18/15
Louise-Marie Roux	Fish Health (M. Fast)	May 5/14-Nov 30/15
Kate Rundle	Fish Health (M. Fast)	May 5/14-Nov 30/15
Carter Van Iderstine	Fish Health-(M Fast)	May 4/15-Aug 21/15
Alden West	Fish Health (M. Fast)	May 5/14-Nov 30/15
Kara Wilson	Fish Health (M. Fast)	May 5/14-Nov 30/15

## Recent Publications

Yitbarek A, Echeverry H, Munyaka P, Rodriguez-Lecompte JC. Innate immune response of pullets fed diets supplemented with prebiotics and synbiotics. *Poultry Science* 2015; 94: 1802-1811.

Villeneuve A, Polley L, Jenkins E, Schurer J, Gilleard J, Kutz S, Conboy G, Benoit D, Seewald W, Gagne F. Parasite prevalence in fecal samples from shelter dogs and cats across the Canadian provinces. *Parasites & Vectors* 2015; 8: 281.

Forzán MJ, Ferguson LV, Smith TG. Calcium oxalate nephrolithiasis and tubular necrosis in recent metamorphs of *Rana sylvatica* (*Lithobates sylvaticus*) fed spinach during the premetamorphic (tadpole) stage. *Veterinary Pathology* 2015; 52: 384-387.

Overy DP, Marron-Lopez F, Muckle A, Bourque A, Lund L, MacHattie D, Lopez A. Dermatophytosis in farmed mink (*Mustela vison*) caused by *Trichophyton equinum*. *Journal of Veterinary Diagnostic Investigation* 2015; 27: 621-626.

Poley JD, Okechukwu O, Fast MD. Towards a consensus: Multiple experiments provide evidence for constitutive expression differences among sexes and populations of sea lice (*Lepeophtheirus salmonis*) related to emamectin benz oate resistance. *Aquaculture* 2015; 448: 445-450.



## DEPARTMENTS OF BIOMEDICAL SCIENCES & PATHOLOGY AND MICROBIOLOGY 2015 FALL SEMINAR SERIES

<b>Tuesdays, 3:30-4:30 pm</b> <b>AVC Lecture Theatre C</b>		
<b>Date</b>	<b>Topic</b>	<b>Presenter</b>
September 29	Presenting to an audience: There are more ways than one to skin a catfish.	Dr. Mark Fast Pathology & Microbiology
October 6	Assessing the Risk of Borrelia Infection (Lyme Disease) in New Brunswick using Dogs as a Sentinel Species	Dr. Vett Lloyd Mount Allison University
October 13	Open	
October 20	Improved detection of a fish virus with a segmented genome by real-time-RT-qPCR	Jocelyn Perez-Lazo Pathology & Microbiology
October 27	Defining the role of Sox 11 and combined Sox4/Sox 11 in renal development.	Sushant Gavhale Biomedical Sciences
November 3	Open	
November 10	TBA	Louise Roux Directed Studies
November 17	Microbial Natural Products in Context: Sources and Significance	Nadia Prigoda-Lee Biomedical Sciences
Co-ordinators of the Departmental Seminar series are Drs. Sunny Hartwig and Anne Muckle.		

We welcome all comments, suggestions and submissions. Please contact:

Dr. Fred Kibenge ([kibenge@upei.ca](mailto:kibenge@upei.ca)) or Ingrid MacLeod ([imacleod@upei.ca](mailto:imacleod@upei.ca)).