



Centre for Veterinary Epidemiological Research  
Annual General Meeting (Virtual by Zoom)  
8 March 2021, 10:00 - 11:30 a.m.

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**Attendees:**

Dr. Caroline Ritter  
Dr. Henrik Stryhn  
Dr. Javier Sanchez  
Dr. João Romero  
Dr. Jeff Davidson  
Dr. Katy Proudfoot  
Dr. Larry Hammell  
Dr. Thitiwan Patanasatienkul  
Jenny Yu (note-taker)

Dr. Crawford Revie  
Dr. Ian Dohoo  
Dr. J T McClure  
Dr. Jason Stull  
Dr. John VanLeeuwen  
Dr. Krishna Thakur  
Dr. Mariana Fonseca  
Dr. Ane Nødtvedt

## Welcome:

The CV ER Director, H. Stryhn, welcomed attendees and offered to chair the meeting unless someone else wanted to do that. There were no objections to H. Stryhn chairing the meeting.

## 1 Approvals

### 1.1 Agenda and Minutes

The agenda was unanimously approved, as were the minutes from the previous AGM (11 March 2020).

### 1.2 Business arising from the minutes/last meeting

In the previous minutes, Section 2.6.2 mentions the purchase of a CV ER banner. Because the Epi on the Island 2020 event had only internal participants, no purchase was done but it will be considered in the future.

## 2 New Business

### 2.1 Faculty members in epidemiology

- (follow-up from minutes) C. Ritter started in her CRC position on 1 June 2020.
- (follow-up from minutes) The “Aquatic Epi” faculty position (replacement for Raphael Vanderstichel's position) had gone through all approvals at AVC by mid-March of 2020, but ended being held up by a UPEI moratorium on new hires; the position should still be in the queue, and the process can start whenever UPEI opens up broadly for new hires.
- (follow-up from minutes) There was no real progress to report on efforts to establish a Dairy Research Chair, but the idea is still being developed. One issue is that NSERC no longer funds industrial Research Chairs so an alternative funding model will need to be developed.
- (follow-up from minutes) The proposed faculty position in Veterinary Infection Control & Public

Health was not selected for funding in 2020 by the AVC (Dean's Council). A new round of proposals for positions in 2021 has seen an updated proposal, for a One Health Infection Preventionist, move forward from the department for discussion at the college level. This is an effort to secure permanent funding for a current term position.

- The new round of proposals for positions also saw a proposal for a position in Aquatic Population Health move forward from the department for discussion at the college level, in another effort to secure ongoing funding for a current term position.

## **2.2 Recruitment of graduate students in epidemiology**

- The current cohort of epi graduate students is quite sizable. The winter semester courses (VHM 802 and VHM 812) are well attended, and several comprehensive exams are scheduled for this year, in addition to one exam successfully completed already. Arrivals of new students and visitors have been affected by the COVID-19 travel restrictions, but are expected to pick up again.
- The AVC graduate student stipends have not been reinstated, and the Sir James Dunn Animal Welfare Centre has not announced any new graduate scholarships.

## **2.3 Epi on the Island in 2021**

No plans for course offerings in the summer of 2021 had materialized at the time of the meeting. The two courses postponed from last year cannot be offered this summer due to uncertainty about which COVID-19 restrictions will still exist by the summer. I. Dohoo suggested to explore whether a course on epidemiological bias could be offered jointly with Simon Dufour from Université de Montréal.

## **2.4 ISVEE 2021 – update**

The conference has been postponed to August 2022. Many of the plans already made have tentatively been carried forward, e.g. for the scientific program. The conference is still planned to be held physically in Halifax with a program geared primarily towards the attending delegates, even if the intent is to add some online features. The conference workshops had been announced in 2020, but the call for proposals was halted and will reopen this spring. C. Ritter has joined the local organizing committee.

## **2.5 Governance**

### **2.5.1 Operations guidelines and steering committee**

The operations guidelines are still under development, but some major points were brought to the meeting for potential discussion. As has been the case for many years, CVER's Annual General Meeting (AGM) should be held yearly in January-March. Because CVER has established a practice of publishing biennial reports in the winter/spring of odd-numbered years (i.e., covering the two preceding years), it is suggested that the terms for the CVER Director be aligned with these publications. Specifically, the terms will be for two years of duration, with an election being held at the AGM in even-numbered years. Furthermore it was suggested that the terms for elected members of the Steering Committee be set at 4 years, also with elections at the AGM in even-numbered years. These suggestions imply that the next elections for both a new CVER Director and the Steering Committee will occur in 2022. No objections were raised against these plans. A brief discussion ensued about the benefits for CVER to have an official designation as a UPEI centre, in particular as CVER does not fully comply with UPEI policies for centres. The consensus was that as long as the centre status does not unreasonably impose extra work or undesired restrictions for CVER, we should aim to keep the status quo (as a UPEI centre). It was noted that the operations guidelines document will also include the membership rules and categories that were established following the 2019 AGM.

## **2.5.2 Meetings and Communication**

No CVER Research Seminars were held (due to COVID-19 restrictions); the hope is to restart the seminars this spring. Virtual CVER Coffee Socials have been held regularly on Mondays 10–11am, with a typical attendance of 10–15 participants. The CVER e-mail distribution list remains active and serves as a major channel to distribute information to CVER members. As well, the CVER webpages are continually updated.

## **2.5.3 Other activities**

An initiative to establish a social media presence for CVER has been discussed, and a group of people interested was established; the CVER Director assumes responsibility for a slow progress with this idea, but there is still interest to pursue it. A list of courses taught in the DVM and graduate programs on topics of epidemiology (in a broad sense) has been compiled. Changes have been implemented in the graduate first epidemiology and biostatistics courses to make them suitable for a broad range of students in terms of their focus on epidemiology and data analysis. Efforts to update the existing (informal) CVER vision document are awaiting the anticipated new additions among the faculty members of the group.

## **3 Updates on Centres, Groups, and Projects**

### **3.1 Ocean Frontiers Institute (OFI) – Presented by Krishna Thakur**

There are two phases of funding under OFI. Phase I projects are about research on New Models of Salmon Health Management, which include agent-based models on sea lice treatment strategies and development of resistance (post-doc Jaewoon Jeong); state-space modelling of sea lice outbreaks in salmon farms around Grand Manan Island, New Brunswick (former post-doc Adel Elghafghuf); assessing transmission patterns of sea lice among salmon farms in the Bay of Fundy, New Brunswick (PhD student Marianne Parent); and infectious viral disease spread models between salmon farms on the east and west coast of Canada (PhD student J. Romero). Phase II projects are about research on One Ocean Health, which includes epidemiological and genomic determinants of epizootic shell disease in lobsters in Canada (PhD student Svenja Köpper). Additional research on antibacterial treatment efficacy in farmed salmon is expected to start soon (Kristin Reynolds). Also partnering with Maya Groner and Jeff Maynard in USA, we are working on the impact of climate change on Ecological determinants of Epizootic shell disease in American lobsters in Canada.

### **3.2 Centre for Aquatic Health Science (CAHS) – Presented by Larry Hammell**

The Fish-iTrends Database is an ongoing sea lice data management project with three industry associations (ACFFA, NAIA, AANS), involving Matt Sanford (programmer) and Holly Burnley (project manager). All sites in NB, NS and NL are part of the Fish-iTrends database. The contract ends in April, but is expected to be renewed for another year. A project on Infectious Salmon Anaemia virus (ISAv) strain evaluation began late in 2020 and will continue into 2021. It will compare the fish-level apparent prevalence of ISAv between two NL marine cage sites considered to be infected with two different genotypes of the virus, and will further evaluate the different strains of ISAv found in samples collected from fish at two marine cage sites within the same Bay Management Area. Our team is working with NL FFA Department to compile an extensive collection of retrospective ISAv diagnostic test data (PCR, IFAT and cell culture) available for 2020, with completion of further genotyping on selected samples. Additionally, two projects related to shrimp diseases in Indonesia are continuing; K. Thakur and 3

postdoctoral fellows have been working on this over the last 18 months and will continue into 2021.

### **3.3 Dairy Research Groups (DRG) – Presented by J McClure**

There are four major research projects at this time, of which three are funded through the Dairy Cluster funds (DCF). The Dairy Cluster projects started in late 2018. The first DCF project is the AVC node of the national CaDNetASR network, with J. Sanchez and Luke Heider as the Co-PIs and three UPEI graduate students involved with the project: M. Fonseca, Ana Soffia Jaramillo and Landon Warder (see 3.7 for more details). The next DCF project is a calf longevity study, with Greg Keefe and J. McClure as Co-PIs. This project is in collaboration with Elsa Vasseur at McGill University whose graduate student is looking at impacts of calf management practices on the animals' welfare and longevity in the herd. At UPEI, the graduate student Elizah McFarland is including calf veterinary care and calf health data to determine their impact on whether the animals reach their genetic potential. The third DCF project is detecting penicillin and other beta-lactam resistance in *S. aureus* mastitis isolates using MALDI-TOF technology, and is conducted by G. Keefe, J. McClure and Ibrahim Elsohaby.

The Atlantic Healthy Herd II program, funded through the Canadian Agriculture Partnership and the Maritime dairy boards, focuses on three production-limiting diseases: BVD, Johne's disease and BLV. Shawn McKenna and G. Keefe are heading the Johne's disease and BVD projects. The funding allows continuation of the Johne's disease control program, and the BVD study is looking at the utility of using a qPCR assay on bunk swabs samples to detect BVD within the herd. The BLV project, involving G. Keefe, J. McClure, S. McKenna and the UPEI graduate student Simon Bourassi, has two components. The first component is a continuation of bulk tank milk surveillance for BLV to estimate farm prevalence, but also includes validation of a new ELISA assay for this surveillance. The second study has enrolled 32 farms where all cows on the farm will be individually tested to determine if they are infected with BLV. The BLV positive cows will then have their BLV proviral load in their blood determined, with the idea that cows with the highest proviral load are the most likely to transmit the virus to naive animals. With this information, producers and their veterinarians will devise management strategies to reduce herd prevalence through culling and segregation of cows with a high proviral load. We are currently testing cows for this year and will retest the enrolled herds next year.

### **3.4 Shellfish Research Group (SRG) – Presented by Jeff Davidson**

The group continues to investigate the decreasing mussel and oyster productivity on PEI farms. An investigation to determine the effect of hurricane Dorian on the shellfish industry (in particular the oyster industry) was carried out in 2019/20, and the results were presented to the PEI Aquaculture Alliance. In support of the transfer of mussel socks and collectors from areas of infestation to areas that are not infested, field trials were conducted in 2020/21 on mitigating the presence of aquatic invasive species on mussel socks and collectors by fresh water flow-through treatments followed by out-of-water air exposure. A multi-year project supported by the PEI provincial government to evaluate oyster seed enhancement on public fishing grounds on PEI will continue in 2021. The international student exchange programs between AVC and Kasetsart University, Thailand (aquatic health), and Mahidol University, Thailand (ecohealth), have been suspended since February 2020 due to COVID-19. Tentative plans are to restart the programs in 2022 for fourth year students from the two universities in Thailand.

Since December 2019, Sonja Saksida has contributed to the SRG. Her proposal to establish an aquatic research program on both finfish and shellfish in Canada has been submitted. She has also initiated collaborations with faculty members, including from the Department of Pathology and Microbiology, to increase the profile and learning opportunities for veterinary students and postgraduates.

### **3.5 Sir James Dunn Animal Welfare Centre (SJDAWC) – by Katy Proudfoot**

The Centre promotes animal welfare through research, service and teaching. For research and service, the Centre offers grants on a regular basis. Last year, the grant application review process included a novel Notice of Intent step, whereby application summaries are submitted ahead of the full application, and applicants can use the feedback received to improve their full application. As another novelty, an Integrated application category was established for projects combining research and service components, with aim of encouraging such projects. The next call for grants is in the fall of 2022.

Three research grants, on lab animal welfare (Paul Bernard), canine behaviour and physiology (Karen Overall), and horse welfare on PEI (C. Ritter), and one service grant renewal, on animal health and welfare of pets in northern Canada (J. VanLeeuwen) were awarded. New graduate students have started recently: Molly Mills (horse welfare; supervisor Katherine MacMillan), Hannah Spitzer (natural behaviour and stress response of newborn calves; K. Proudfoot) and Camille Squair (effects of veterinary handling on canine behaviour and physiology; K. Overall).

The Centre also has teaching (mainly DVM program) and outreach activities. The annual animal welfare in practice symposium in 2021, entitled “Animal Abuse and Neglect”, was held on March 4<sup>th</sup> and 6<sup>th</sup> as a Zoom webinar. The AVC Animal Welfare journal club aims to host two meetings per semester in 2021. A Facebook webpage (<https://www.facebook.com/SJDAWC/>) is used to share the Centre’s activities with the public.

### **3.6 Smallholder Dairy Research Group (SDRG) – by John VanLeeuwen**

The SDRG has a dairy research, teaching and service program involving faculty members and graduate students from both AVC and Science (groups in family science and human nutrition). Queen Elizabeth Scholars Phase II funding, partnering with Farmers Helping Farmers (FHF) and Veterinarians without Borders Canada (VWB), currently supports 3 veterinary graduate students (Edward Kariuki, Daniel Muasya, and Ron Sang at the University of Nairobi) and 1 non-veterinary graduate student (Julie Oyoo). Due to COVID-19, field research was delayed and 3 veterinary and 2 nutrition internships helping the research were cancelled, but their projects should be completed in 2021 or 2022. In August 2020, Peter Kimeli successfully defended his PhD thesis on calf comfort management, funded by SJDAWC. SDRG collaborators outside Africa include Dario Vallejo-Timaran in Colombia and Suppada Kananub in Thailand, and their supervisory committees.

Based partly on the successful research, teaching and service activities of the SDRG in Kenya, VWB now has a large 7-year project funded by Global Affairs Canada in six countries: Kenya, Ghana and Senegal in Africa, and Laos, Vietnam and Cambodia in SE Asia. The project is service oriented, but there is a research component for project evaluation to quantify and document the activities and impacts of the project. Due to COVID-19, VWB suspended the activities for both the practitioners and the students in 2020. FHF now also has a large 4-year project in Kenya (also funded by Global Affairs Canada), where the SDRG is directly involved with the implementation and evaluation component of the project which includes a new structure and photos for the Handbook for Kenyan Dairy Farmers, new video links (in progress) and cell phone training enhancements. Normally, the senior rotation involved with FHF is in January each year. It was cancelled in 2021 due to COVID-19, but fortunately it happened in January 2020 before the lockdown.

### **3.7 Antimicrobial Resistance and Risk Analysis Groups – by Javier Sanchez**

The AMR group collaborates with Canada’s four other veterinary colleges within the Canadian Dairy Network for Antimicrobial Stewardship and Resistance (CaDNetASR). This 5-year project, ending in March 2023, involves annual sampling and testing in the selected farms across five provinces. The

CaDNetASR program has 6 Ph.D., 2 MSc, and 5 undergraduate students working on different projects related to surveillance and stewardship of antimicrobial usage and resistance. A primary task during the last year has been the development of an automated process to quantify antimicrobial usage using dispensing records from veterinary clinics. As the program is ending in 2023, we have started to look for funding opportunities to expand the program.

The Risk Analysis group is engaged in diverse fields. First, the group became involved in COVID-19 related activities at local and national levels: participated in biweekly meetings with Health PEI, and supported the local CPHO with model projections; participated in weekly meetings of the PHAC External Modeling group; participated in seminar presentations for AARMS (Atlantic Association for Research in Mathematical Sciences); and participated in three large NSERC network proposals related to emerging infectious disease modeling using a One Health approach. The group was also actively involved in obtaining funding for a 6-month COVID-19 project to develop an information system and disease model for a region in Colombia, with colleagues from Universidad de Caldas, Colombia; Universidad Austral de Chile, and the National Institute for Agriculture Research (INRA) from Barcelona, Spain. Several papers are resulting from these activities.

Second, a project on a risk analysis framework for sea lice tolerance to freshwater treatment was completed with two published papers, with the participation of Emilie Laurin, C. Revie, M. Groner and Marit Stormoen (Norway). Third, the group is collaborating with the International Livestock Research Institute (ILRI) on a project related to food safety. An exposure assessment is being conducted on health risk associated with the consumption of aflatoxin M1 through milk in dairy farms in Burkina Faso. A PhD student at the University of Bern and a researcher in ILRI are working on this project. Finally, the group started to work with PHAC's Risk and Capability Assessment Unit (RCA) to develop a standard risk prioritization approach for health-related threats.

### **3.8 Veterinary Epidemiology and Social Science for Animals (VESSA) Group – by Caroline Ritter**

The VESSA group was initiated in June 2020 when C. Ritter started her position as Canada Research Chair within CVER. The aim of the group is to improve animal health and welfare by accounting for the “human factor” that affects how animals are cared for. Currently, for the project of AMU on dairy farms (collaborating among others with J. Sanchez and L. Heider), the group is focusing on finding the connections between AMU and animal welfare. For a project of Surplus calves on dairy farms (collaborating among others with K. Proudfoot and Nina von Keyserlingk from UBC), the group is focusing on citizens' attitudes toward certain managements practices with calves. In addition, the main part of this group will serve as veterinary advisory, specifically on how veterinarians during herd health visits can become more effective advisors by using their communication skills. For this aspect, C. Ritter is a co-supervisor for a PhD student (Linda Dorrestein, UOFC), and a related paper is accepted recently. An MSc student funded by the Canadian Agriculture Partnership (CAP) and SJDAWC will start in May 2021 to work on the social science part of horse owners' decision-making related to animal welfare. A graduate student is expected to join the group in September 2021 to focus on veterinary mental health.

### **3.9 Other research activities**

J. McClure mentioned collaborative projects (with J. Stull, Matt Saab and Michelle Evason) on companion animal AMU/AMR. One project is on methicillin resistant *Staphylococcus pseudintermedius* (MRSP) in dogs in Atlantic Canada over a period of 11 years. A graduate student, Ashlynn Webster has been working on this and will defend her MSc degree in April 2021. Another project is on attitudes, knowledge and influences of AMR and antimicrobial choices by pet owners. A paper on this for dog owners has been submitted, and a paper for cat owners is in the pipeline for June 2021. A graduate student, Madeleine Stein, has worked on this project, with Scott Weese from OVC as an additional

collaborator.

Aimie Doyle together with J. McClure and M. Saab, are working on alcohol-based antiseptics for preparation of skin prior to surgical procedures. A paper for equine joint injection sites was just published. A second publication on investigating such techniques for bovine laparotomies is expected later in 2021. A survey of equine parasitism on PEI, while looking for evidence of resistance to parasites, is a collaboration with Ben Stoughton and MVSc student Amanda Butler.

## **Adjournment**

The meeting was adjourned at 12:10 p.m.