**Curriculum Vitae**

Current as of May 13, 2024

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**2**. **Personal Data**

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Date/place of birth: 27 September 1960

Lemsterland

The Netherlands

Citizenship: Canada

**3. Academic Qualifications**

1998 Bovine specialist, Royal Dutch Veterinary College

1998 PhD in Veterinary Epidemiology, Utrecht University

1994 Epidemiologist A, Dutch National Science Foundation

1988 DVM, Utrecht University, The Netherlands

**4.** **Employment History**

2023 -- **United Nations University Chair** in Infectious Diseases in a Changing Climate

2014 -- **NSERC Industrial Research Chair** in Infectious Diseases of Dairy Cattle (Supported by Alberta Milk, Dairy Farmers of Canada, Dairy Farmers of Manitoba, BC Milk, Sask Milk, Westgen Endowment Fund, Lactanet, and MSD Animal Health). Renewed in 2019.

2008 -- 2013 **Head** of the Department of Production Animal Health, Faculty of Veterinary Medicine, University of Calgary

2007 -- **Professor Epidemiology of Infectious Diseases**, Department of Community Health Sciences, Faculty of Medicine, University of Calgary

2007- 2008 **Interim** **Head** of the Department of Production Animal Health, Faculty of Veterinary Medicine, University of Calgary

2006 -- **Professor Epidemiology of Infectious Diseases**, Department of Production Animal Health, Faculty of Veterinary Medicine, University of Calgary

2006 -- **Graduate Faculty**, Department of Community Health Sciences, Faculty of Medicine, University of Calgary

2006 -- **Graduate Faculty**, Department of Medicine, Faculty of Medicine, University of Calgary

2006 -- **Adjunct Professor** and Graduate Faculty, University of Prince Edward Island (renewed Nov. 2016)

2006 **Professor Epidemiology/Farm Service** (accelerated promotion), Department of

Health Management, Atlantic Veterinary College, University of Prince Edward Island

2001 – 2006 **Associate Professor Epidemiology/Farm Service**, Department of Health Management, Atlantic Veterinary College, University of Prince Edward Island.

1992 - 2001 **Veterinarian/epidemiologist** of the Ruminant department of the Dutch Animal Health Service, Drachten, the Netherlands

1990 - 1992 **Veterinarian**, Department of Herd Health and Reproduction, Utrecht University

1989 - 1990 **Veterinarian**, Department of Ambulatory Clinic and Herd Health, Veterinary

Faculty, Universidad Nacional, Costa Rica

1988 - 1989 **Manager and veterinarian** of a 3500-cow dairy and beef herd, Boca de Arenal, Costa Rica

**5. Professional Awards and Honors**

* Journal of Dairy Science Most Cited Award, 2024. This award is presented annually by Elsevier and Journal of Dairy Science to recognize contributors to Journal of Dairy Science whose work is significantly impacting research and the dairy industry.
* Royal College of Veterinary Surgeons Plowright Prize (£75,000). 2022. The biennial Plowright Prize recognizes an individual residing in Europe or the Common Wealth whose work has had a significant impact on the control, management and eradication of infectious diseases of animals. Their contribution will demonstrate animal, humanitarian or economic benefit.
* University of Calgary Killam Research Excellence Award ($5,000). 2021. This award is presented annually to an individual who has made outstanding contributions to research.
* O’Brien Institute of Public Health Research Excellence Award ($2,000), 2019. This award is presented to an individual who has at a senior career stage equivalent to 15 years post-awarding of their final degree, made outstanding contributions to research.
* Highly Cited Researcher, 2019. This is the list of most highly cited authors worldwide by Web of Science Group.
* Journal of Dairy Science (JDS) Club100, 2019. This award recognizes individuals who have (co-)authored 100 or more manuscripts in Journal of Dairy Science.
* University of Calgary Killam Annual Professorship ($10,000), 2019. This award is presented annually to recognize excellence in research, undergraduate and/or graduate teaching.
* UCVM’s Award for Research Excellence, 2018. This award is presented annually to recognize a UCVM faculty member who has actively promoted excellence in research.
* Elanco Award for Excellence in Dairy Science, 2018. This award is presented annually by the American Dairy Science Association to recognize outstanding research in dairy production or manufacturing contributing to improvement or care of dairy cattle, development and improvement of processes, products, equipment, methods, handling, and sanitation.
* Journal of Dairy Science Most Cited Award, 2018. This award is presented annually by Elsevier and Journal of Dairy Science to recognize contributors to Journal of Dairy Science whose work is significantly impacting research and the dairy industry.
* UCVM’s Award for Outstanding Achievement in Graduate Supervision, 2017. This award is presented annually to recognize a UCVM faculty member who has actively promoted excellence in graduate education and research through excellence in supervision.
* Highly Cited Researcher, 2016. This is the list of most highly cited authors worldwide by Thomson Reuters ISI.
* Peak Scholar in Entrepreneurship, Innovation, and Knowledge Engagement, 2015. This University of Calgary award is presented to scholars who have achieved excellence in Entrepreneurship, Innovation, and Knowledge Engagement.
* Highly Cited Researcher, 2015. This is the list of most highly cited authors worldwide by Thomson Reuters ISI.
* Journal of Dairy Science Most Cited Award, 2015. This award is presented annually by Elsevier and Journal of Dairy Science to recognize contributors to Journal of Dairy Science whose work is significantly impacting research and the dairy industry.
* Fellow of the Canadian Academy of Health Sciences. 2014. This fellowship is one of the most prestigious awards in Canada recognizing substantial contributions to health science.
* Journal of Dairy Science Most Cited Award, 2014. This award is presented annually by Elsevier and Journal of Dairy Science to recognize contributors to Journal of Dairy Science whose work is significantly impacting research and the dairy industry.
* University of Calgary Teaching Award for Curriculum Development. 2014. This award is presented annually by the University of Calgary and was given to the initial faculty members of UCVM as a group in recognition of outstanding contributions in the area of curriculum development.
* West Agro, Inc. Award, 2013. This award is presented annually by the American Dairy Science Association to recognize outstanding research of milk quality as affected by control of mastitis, management of milking, and practices in production of milk.
* Journal of Dairy Science Most Cited Award, 2011. This award is presented annually by Elsevier and Journal of Dairy Science to recognize contributors to Journal of Dairy Science whose work is significantly impacting research and the dairy industry.
* Intervet/Schering-Plough Award, 2010. This award is presented annually by the Canadian Veterinary Medical Association to a veterinarian whose work in large animal practice, clinical research or basic sciences has contributed significantly to the advancement of large animal medicine, surgery and theriogenology, including herd health management.
* Guest Professor at Dept. of Obstetrics, Fertility and Herd Health, Ghent University, Belgium, 2008-2020 (renewed in 2016). This is an honorary position with a 5% time commitment.
* Merit Award for Scholarly Achievement, 2006. This is the annual research award of the University of Prince Edward Island Faculty Association.
* Pfizer Animal Health Award for Research Excellence, 2005. This is the annual research award of the Atlantic Veterinary College.
* Nominated by the UPEI Graduate Student Association for the Pfizer Carl J. Norden Distinguished Teacher Award, 2005 and 2006.
* Dutch Veterinary Journal. Best journal manuscript for 2002.
* Dutch Veterinary Journal. Best journal manuscript for 1994.

**6. Professional Memberships**

* Canadian Veterinary Medical Association
* Alberta Veterinary Medical Association (License No. 2388)
* University of Calgary Ward of the 21st Century (W21C; affiliate membership)
* University of Calgary GastroIntestinal Research Group
* University of Calgary Snyder Institute for Chronic Diseases
* University of Calgary O’Brien Institute for Public Health
* Royal Dutch Veterinary College
* NMC (National Mastitis Council)
* American Dairy Science Association
* American Association of Bovine Practitioners
* Canadian Society for Epidemiology and Biostatistics

**7. Professional Activities**

Current:

* Board of the Canadian Academy of Health Sciences (2023 – present)
* International Advisory Board of Association of Mastitis (2023 – present)
* Advisory Board on Antimicrobial Resistance of the Public Health Agency of Canada (2022 – present)
* Fellow Nomination Committee of the Canadian Academy of Health Sciences (2020 – present)
* Steering Committee of the Canadian Antimicrobial Resistance (AMR) Network (2018 – present)
* International Collaborative Research Grant Program Committee of the International Association for Paratuberculosis (2017 – present)
* Chair EU Expert Group on Paratuberculosis funded by the DISCONTOOLS project (2014 – present)
* Dairy Farmers of Canada Biosecurity Technical Committee (2017 – present)
* Alberta Johne’s Disease Initiative Advisory Committee (2009 – present)

Past:

* Scientific Committee of the Canadian Bovine Mastitis Research Network, Leader of

the Environment Theme (2003 – 2023)

* Planning Committee Antimicrobial Stewardship Conference - Program, AB, Canada (2019 – 2020)
* Organizing Committee One Health Workshop, AB, Canada (2019 – 2020)
* Organizing committee of the 59th annual meeting of the NMC in Orlando, FL, USA (2019 – 2020)
* Organizing committee of UCVM Beef Health Conference (2011 - 2019). I have founded this event and chaired the first 3 conferences. Drs. Ed Pajor and Claire Windeyer are the current co-chairs
* Scientific Committee Regional meeting NMC 2018 in Italy (2016 – 2018)
* Adviser, USDA-NIFA-funded project “An Integrated Milk Quality Extension and Education Program to Reduce Mastitis” (2012 – 2018)
* Research Committee of the National Mastitis Council (NMC), USA (2005 – 2016)
* Leader Alberta Inflammatory Bowel Disease Consortium (2009 – 2016)
* Together with Drs. Jeroen De Buck and Karin Orsel, I organized the first eight annual Canadian *Mycobacterium avium* subsp. *paratuberculosis* meetings in Banff in October 2008 to 2015
* Ad-Hoc Committee for Antimicrobial Stewardship in Canadian Agriculture and Veterinary Medicine (2016 – 2017)
* Dairy Farmers of Canada Biosecurity Working Group (2014 – 2017)
* Organizing committee of the 2014 summer meeting of the NMC in Ghent, Belgium
* Organizing committee of the 2014 annual meeting of the NMC in Fort Worth, TX, USA
* American Dairy Science Association West Agro, Inc. Award selection committee (2013 - 2017) (Chair in 2016)
* Search and selection committee NSERC Industrial Research Chair Dairy Cattle/Nutrition/Physiology, University of Alberta (2013 – 2014)
* Dairy Farmers of Canada Production Expert Scientific Advisory Committee (PESAC) (2007 – 2015)
* Interim Scientific Director Canadian Bovine Mastitis Research Network (2011 – 2012)
* Board of NMC (formerly National Mastitis Council) (2008 – 2011)
* Chair of the International Advisory Committee of the National Mastitis Council (NMC), USA (2006 – 2011)
* External advisor of Dutch National Mastitis Reduction Project (2004 – 2011)
* Vice-chair technical committee of Canadian Johne’s Disease Initiative (2008 – 2009)
* Program committee of the Canadian Voluntary Johne’s Disease Prevention and Control Program (2008 – 2009)
* Alberta Johne’s Disease Working Group (2006 – 2009)
* Vice-chair of the International Advisory Committee of the National Mastitis Council (NMC), USA (2004 – 2006)
* Canadian Voluntary Johne’s Disease Prevention and Control Program Committee of the Canadian Animal Health Coalition (2005 – 2006), chair of both the program design and the concurrent research subcommittee

The establishment of both control programs was accomplished in close collaboration with the provincial Dairy Boards and Cattlemen Associations, the provincial ministries of Agriculture and Fisheries, provincial bovine practitioners, Dairy Farmers of Canada and the Canadian Cattlemen Association

* Organizing committee of the 2008 annual meeting of the NMC in New Orleans, USA
* Organizing committee of the Conference on Heifer Mastitis, Ghent, Belgium, June 2007. I was the editor of the proceedings that were published as a special issue in Vet. Microbiol. (2009) 134.
* Organizing committee of the 2007 annual meeting of the Am. Assoc. of Bovine Practitioners, Vancouver, Canada. I was responsible for the organization of the dairy section
* Scientific committee of the 2008 Canadian Association of Veterinary Epidemiology and Production Management annual meeting, Charlottetown, PEI, Canada
* Organizing committee of the 2007 Canadian Association of Veterinary Epidemiology and Production Management annual meeting, Edmonton, AB, Canada
* Organizing committee of the 2006 National Mastitis Council (NMC) summer meeting in Charlottetown, Prince Edward Island, Canada
* Organizing committee of the 2006 annual meeting of the National Mastitis Council (NMC) in Orlando, FL, USA
* Organizing committee of the 2004 annual meeting of the National Mastitis Council (NMC) in Charlotte (NC), USA

**8. Participation on University, College and Department Committees**

University of Calgary (2006 -)

Current:

* Director, One Health at UCalgary (2019-)
* Scientific Director, Antimicrobial Resistance – One Health Consortium (2019 -)
* Brain and Mental Health Scholars Committee (2019 -)
* Dept. of Community Health Sciences, Graduate Education Neutral Chairs Committee (2016 -)

Past:

* Leader, University of Calgary Biostatistics Centre (UCBC) (2014 - 2023)
* UCVM Prizes and Awards Committee, founding chair (2018 - 2023)
* Libraries and Cultural Resources Faculty Tenure and Promotion Committee (2021)
* UofC Campus and Facilities Development Subcommittee of General Faculties Council (2017-2020)
* UCVM Task group on Post-Graduate Education (2016 - 2021)
* UCVM Strategic Planning Steering Committee (2016 - 2021)
* UCVM Faculty Appeals Committee, chair (2016 - 2021)
* UofC SUPPORT: Research Awards committee (2020 - 2021)
* Cumming School of Medicine Clinical Research Unit (CRU), co-chair (2016 - 2018)
* Schulich School of Engineering Faculty Tenure and Promotion Committee (2017)
* UofC Advisory Committee on Knowledge Engagement (ACKE) (2015 - 2016)
* UCVM Research Committee (2013 - 2016)
* Executive Council of the Snyder Institute for Chronic Diseases (2012 - 2016)
* UofC Academic Review Committee for the University Fundraising Campaign

(2012 - 2015)

* UCVM Graduate Scholarship Evaluation Committee (2013 - 2014)
* Haskayne School of Business Faculty Tenure and Promotion Committee (2015)
* UofC SUPPORT: Research Infrastructure Programs subcommittee (2013 - 2015)
* UCVM Academic Appointment Review Committee (2013, 2014)
* UCVM Government and International Relations Committee (2008 - 2013)
* UCVM Leadership Council (2007 - 2013)
* UofC Killam Memorial Chair Selection Committee, 2011
* UCVM Research Strategy Committee (2008 - 2010)
* Faculty of Veterinary Medicine (UCVM) 3rd year teachers committee (2009 - 2010)
* UCVM Curriculum Working Group (2008)
* UCVM Student Affairs Working Group (2008)
* UCVM Admissions committee (2006 - 2007)
* UCVM Library committee (2006 - 2007)
* UCVM Distributed Veterinary Teaching Hospital committee (2006 - 2008)
* Many (>30) UCVM and other UofC Faculties faculty search and selection committees, most of whom I have chaired

UPEI (2001-2006)

* AVC Diagnostic Research Committee (2006)
* University of Prince Edward Island senate (2005 – 2006)
* UPEI Faculty Association Finance committee (2004 – 2006)
* Atlantic Veterinary College (AVC) Teaching Space Allocation Committee (2002 – 2005)
* AVC Population Health Space Allocation Committee (2002 – 2005)

**9. Editorial Activity**

Current:

* Associate Editor of *One Health Advances* (2023 – present)

Past:

* Editorial Advisory Board of *Preventive Veterinary Medicine* (1998 – 2024)
* Editorial Board of *Journal of Dairy Science* (2005 – 2011, and 2014 – 2019)
* Academic Editor *PeerJ* (2017 – 2019)
* Editor of a special issue of *Transboundary and Emerging Diseases* on Knowledge Gaps in the Control of Infectious Disease in Animals (2016 – 2017)
* Editorial Board of *Veterinary Research* (2008 – 2010)
* Editor of a special issue of *Veterinary Microbiology* on Heifer Mastitis (2007 – 2008)
* Board of Scientific Reviewers for the *American Journal of Veterinary Research* (2003 – 2006)
* Editor of a special issue of the Dutch Veterinary Journal on Chronic Wasting Disease in Cattle (2001)

**10. Reviewer** for:

My review activity is presented in: <https://publons.com/researcher/306194/herman-barkema/>

* *Preventive Veterinary Medicine*
* *Journal of Dairy Science*
* *Animal*
* *Epidemiology and Infection*
* *Canadian Veterinary Journal*
* *Journal of the American Veterinary Medical Association*
* *American Journal of Veterinary Research*
* *Canadian Journal of Veterinary Research*
* *Veterinary Research*
* *International Journal of Parasitology*
* *Veterinary Parasitology*
* *Veterinary Microbiology*
* *Acta Veterinaria Scandinavia*
* *Journal of Dairy Research*
* *Tijdschrift voor Diergeneeskunde (Dutch Veterinary Journal)*
* *Theriogenology*
* *Veterinary Record*
* *New Zealand Veterinary Journal*
* *Foodborne Pathogens and Disease*
* *Inflammatory Bowel Disease*
* *Veterinary Medicine International*
* *Journal of Mammary Gland Biology and Neoplasia*
* *Irish Veterinary Journal*
* *Animal Welfare*
* *Veterinary Quarterly*

Additionally, I review on a regular basis books and research proposals (NSERC, CHIR, USDA, Agricultural Funding Consortium, the Wellcome Trust, Alberta Livestock Industry Development Fund, Alberta Livestock and Meat Agency, Beef Cattle Research Council, Manitoba Rural Adaptation Council, Alberta Innovates – BioSolutions, MITACS, Genome BC, United Arab Emirates University, and The Academy of Finland).

* As a member of Dairy Farmers of Canada’s Production Expert Scientific Advisory Committee (PESAC) I review the research proposals (2007 – present). This committee meets two times annually, in the spring to evaluate and select the LOIs and in the fall to evaluate and select the full proposals that will be recommended for funding to the Board and to NSERC for matching funding.
* I have reviewed promotion files to associate and full professor for Cornell Univ. (2008, 2022), Univ. of Saskatchewan (2009 and 2018), Univ. of Minnesota (2009), Univ. of British Columbia (2009), Univ. of Georgia (2010), Univ. of Jordan (2010), the Univ. of Alberta (2013), Univ. of Melbourne (2017), Univ. of Tennessee (2021), and Michigan State Univ. (2021, 2022), and tenure files for the Univ. of Saskatchewan (2008, 2017, 2019, 2020), Cornell Univ. (2011), Washington State Univ. (2012), North Carolina State Univ. (2012), Univ. of Jordan (2013), Univ. of Guelph (2014, 2022), the Univ. of Vermont (2014, 2015), Univ. of Georgia (2015), Univ. of British Columbia (2015), Univ. of Missouri (2015), Univ. of Montreal (2016), Univ. of Bern (2017), Univ. of Sydney (2018), Univ. of Idaho (2020), Univ. of Tennessee (2020), Univ. of Zürich (2023), and Michigan State Univ. (2023).
* I have been an external evaluator for full professor positions in Disease Modelling (2010), Disease Control and Prevention (2013), and Veterinary Preventive Medicine (2016) at the Univ. of Copenhagen, a full professor position in Milk Quality and Cattle Health at the Univ. of Helsinki (2014), an assistant professor position in interactions between disease management, herd health and production at Aarhus Univ. (Denmark; 2018), and a Professor for One Health Systems Science at the University of Veterinary Medicine Vienna (2024). Finally, I have been an external member of the search and selection committee for two NSERC Industrial Research Chair in Cattle Production at the Univ. of Alberta (2013 and 2018), four assistant professor positions in Biostatistics in the Faculty of the Univ. of Calgary (2013, 2014, 2017 and 2018), two Statistical Associates in the Faculty Nursing (2015 and 2016), and a Canada Research Chair in Livestock Genomics at the Univ. of Guelph (2017).

**11. Most Significant Contributions to Research**

The over-all goal of my research program is to ensure a safe and economical food supply with reduced risks of transmission of zoonotic diseases to farm families and the general public. I have two main research interests; the first is to prevent and control infectious diseases on dairy farms, primarily mastitis and Johne’s disease, including both animal and public health perspectives. New prevention and control programs in Canada, The Netherlands, and other countries have been introduced or changed based on results of my research. My second main research interest involves interactions among hosts, microbes and the environment in antimicrobial resistance. My research projects are conducted by graduate students and postdoctoral fellows, often with assistance of summer students. Because I value a multidisciplinary education of these graduate students, all of my graduate students are co-supervised by a faculty member with a complimentary expertise, most often a basis scientist. Knowledge transfer and exchange is a logical and important extension of my research program.

**1. Bovine mastitis**

1. **Prevention and control of mastitis in dairy cattle** (133 papers in refereed journals, 2 accepted papers, 9 submitted papers, and 2 book chapters). Bovine mastitis is the most costly disease of the dairy industry worldwide. Every year, approximately 25% of dairy cows are affected by clinical mastitis, whereas the incidence of subclinical mastitis is even higher. We demonstrated that management practices to decrease the prevalence of subclinical mastitis are available and that this decrease does not increase the incidence of clinical mastitis. We have suggested and evaluated improved detection methods of intramammary infection. Also, we have identified factors that affect cure of *Staphylococcus aureus* mastitis treatment, and developed algorithms that predict cure rate. With results of these studies, mastitis prevention and control programs in The Netherlands, Canada, the USA and many other countries have been improved. I have served as a Board member of the NMC, the international organization for udder health research, was Chair of the International Advisory Committee, and am a member of the Research Committee. Also, I have served as advisor of the Dutch Udder Health Centre, and I currently am adviser of the USDA-NIFA funded project “An Integrated Milk Quality Extension and Education Program to Reduce Mastitis”.
2. **Canadian Bovine Mastitis and Milk Quality Research Network**

The Canadian Bovine Mastitis and Milk Quality Research Network (CBMQRN) was established to help the dairy industry reduce mastitis. It is the most comprehensive and exciting research endeavour in support of the dairy industry that has ever existed in Canada. The Network consists of 42 scientific investigators at 9 universities and 2 federal research institutions with expertise in a wide variety of scientific disciplines (genetics, epidemiology, clinical medicine, immunology, microbiology, etc.) and who have come together to work as a team to tackle the most important mastitis research issues. I am the leader of the Environment theme (there are 2 other themes). Funding was committed for 5 years by NSERC ($7.1 million), and the dairy industry ($2.2 million). Dairy Farmers of Canada has asked CBMRN to select projects for a total of $1 million in funding for the Dairy Cluster. I lead one of the 3 research activities: “Enhancing sustainable production of safe, high quality milk by optimizing dairy farm best management practices for preventing mastitis and reducing its environmental impact.” Additionally, I have been the Interim Scientific Director for a year. The CBMRN has been awarded $1.8 million and $1.25 million in funding for the second and third 5-year Dairy Cluster of Dairy Farmers of Canada and Agriculture and Agri-Food Canada, respectively, and a 6-year $1.65 million NSERC CREATE grant for training of graduate students and post-doctoral fellows in Milk Quality.

**2. Johne’s disease**

1. **Johne’s disease research** (61 papers in refereed journals, 1 accepted paper, and 2 book chapters). Johne’s disease (paratuberculosis) is an infectious, chronic enteritis caused by *Mycobacterium avium* subsp. *paratuberculosis* (MAP). It results in intermittent diarrhea, loss of body condition and lower productivity in both beef and dairy cattle. Currently, it is non-treatable and in the terminal stage, cattle die in an extremely weakened state. Johne’s disease is widespread in cattle populations in most countries with major dairy and beef industries. There is a potential association of MAP with Crohn’s disease. We have determined the prevalence of MAP-infection in cattle in The Netherlands and Canada (16%), evaluated diagnostic tests, and improved testing schemes and prevention and control programs. Additionally, we have conducted several studies to determine the age- and dose-dependent susceptibility of calves to MAP and the role of calf-to-calf transmission. The results of our research program have defined the prevention and testing strategies currently used worldwide in Johne’s disease control programs.
2. **Canadian Johne’s disease prevention and control programs**

In May 2005, the Canadian Animal Health Coalition was sanctioned by its stakeholders, the Canadian dairy and beef industry, provincial ministries of agriculture, veterinary colleges and associations of bovine practitioners, to design a national Johne’s disease control program. Five subcommittees were formed, 3 of which I was requested to chair: ‘Goals and Objectives’, ‘Design of the Program’, and ‘Concurrent Research’. In May 2006, the committee delivered the draft of the program, including a knowledge transfer program and a template of the concurrent research program. The commodities have approved the program in the summer of 2007 and in July 2008 Agriculture and Agri-Food Canada have approved the program and its budget under the Advancing Canadian Agriculture and Agri-Food program. I lead the Scientific Committee in this program and I am co-chair of the Technical Committee.

Additionally, regional initiatives for Johne’s disease control programs have started. With funding of the PEI Holstein branch, I started with the group at the Atlantic Veterinary College a program on PEI, and requests for funding were submitted in New Brunswick, Nova Scotia and Newfoundland by the provincial Dairy Boards that were approved after I left PEI. After moving to Alberta, I am now actively involved in the Alberta Johne’s Disease Working Group. With a small group, we drafted a proposal for the Alberta Johne’s Disease Initiative which was funded by the Alberta Livestock and Meat Agency and Alberta Milk, the organization of Alberta dairy producers, for $730,000. Our research group at the Department of Production Animal Health coordinates this Initiative to reduce the prevalence and incidence of Johne’s Disease in Alberta. 355 (~65%) Alberta dairy farms participate in the Alberta Johne’s Disease Initiative.

To improve Johne’s control efforts nation-wide and internationally, I have also worked to bring together researchers from other institutions, as well as government and industry experts. Chairing the Johne’s disease Expert Group of the EU Discontools project is an example of these efforts. Together with Drs. Jeroen De Buck and Karin Orsel, I have initiated an annual meeting of the Canadian MAP researchers in Banff. This year, the meeting will be held for the 8th time.

1. **Antimicrobial Resistance (AMR)**
2. **AMR Research** (39 papers in refereed journals, 1 accepted paper, 2 submitted papers). AMR is a critically important emerging global concern, with ominous potential consequences. Antimicrobial use (AMU) in animals contributes to this threat and must therefore be minimized, albeit without compromising animal health and welfare. We estimated the level of AMR in Canadian and Chinese dairy cattle and we demonstrated that the association between AMU and AMR only exists for non-intramammary AMU. In response to a request from the World Health Organization (WHO), I was co-leader of a team from the Cumming School of Medicine and UCVM that conducted an intensive literature search; we concluded that reducing AMU in animals decreases AMR in bacteria of animals and very likely also humans. Additionally, we are currently working with the Public Health Agency of Canada, funded by Agriculture and Agri-Food Canada and Dairy Farmers of Canada, to determine best ways to reduce AMU in Canadian dairy cattle. Also, in response to a request by Alberta Health and Alberta Agriculture and Forestry, Dr. John Conly and I are co-creators of an Alberta AMR and AMU strategy. In addition, Dr. Conly and I are also collaborating to establish a WHO One Health Centre in AMR at UCalgary.Additionally, I am a member of the Advisory Group on AMR of PHAC. Finally, in 2017, I was designated a high-level foreign expert to work on AMR research at China Agricultural U., the leading veterinary school in China. I recruited 5 UCalgary faculty members to participate. We all visit China every 6 months. I always take 2 graduate students to co-teach the Chinese graduate students, providing them novel opportunities to engage in teaching. This designation was renewed in 2021.
3. **AMR – One Health Consortium**

Funded by the Major Innovation Fund program of the Alberta Ministry of Economic Development, Trade and Tourism, the AMR – One Health Consortium focuses on: 1) optimizing antimicrobial use (AMU); 2) enhancing surveillance systems; 3) developing effective infection prevention and control strategies; 4) training a generation of transdisciplinary-trained highly qualified personnel in One Health; and 5) working with stakeholders to produce evidence-based policy. As a pan-Alberta initiative, the Consortium leverages considerable existing provincial strengths and investments. Based at the University of Calgary as the lead institution, I am the leader of the AMR – One Health Consortium, the Consortium involves the following partnering institutions: University of Alberta, University of Lethbridge, Athabasca University, Agriculture and Agri-Food Canada, Lethbridge Research Center, Olds College, Lakeland College, Southern Alberta Institute of Technology, Alberta Health Services, Public Health Laboratories, and Mount Royal University.

The AMR - One Health Consortium includes 32 projects organized across 10 Work Packages (WPs), involving a total of 28 principal investigators and over 106 total investigators and 85 HQP across Alberta. These 10 WPs have been designed to address the issue of AMR under three pillars, falling under three thematic areas. The themes include: Innovation and Commercialization, and Education and Societal Impact, and Policy, Economics and Sustainability; the three pillars of AMR addressed within these themes include: Treatment Optimization, Surveillance, and Prevention of Transmission. I also lead a graduate course in Antimicrobial Resistance: One Health approach with over 20 instructors, all (inter)national experts. This Fall, the course will be offered as a virtual seminar series that will be open for international participants.

**4. Inflammatory Bowel Disease (IBD)**

1. **IBD research** (25 papers in refereed journals). Inflammatory bowel diseases (IBD) are a group of chronic, idiopathic and debilitating illnesses comprised mainly of Crohn's disease (CD) and ulcerative colitis (UC). A systematic review published by the Alberta IBD Consortium demonstrated that 0.5% of Canadians are affected by IBD and more than 9,000 new diagnoses are made annually. Alberta ranks among the highest in the world in terms of IBD prevalence, and the incidence continues to rise.
2. **Alberta IBD Consortium**

Funded by a $5 million Interdisciplinary Team Grant (ITG) from AHFMR (now Alberta Innovates), the Alberta IBD Consortium was formed to identify key gene-environment-microbe interactions that will lead to a better understanding of the pathogenesis of IBD. I have lead the Consortium, which consisted of a multidisciplinary team of 41 clinicians and scientists, mainly from the Universities of Calgary and Alberta, but including members in Lethbridge and Toronto. A key deliverable of the Consortium has been development of one of the world’s most comprehensive IBD patient cohorts, with genotype, phenotype, serotype and environmental data for over 2,000 individuals. An integral part of this collaborative approach to tackling IBD is engaging a wide range of stakeholders in a comprehensive integrated knowledge transfer and exchange (KTE) program in partnership with the Crohn’s and Colitis Foundation of Canada (CCFC). An additional $4.5 million was secured from a variety of sources to support this initiative.

**5. Lameness** (16 papers in refereed journals, 1 accepted paper). Lameness is one of the most important welfare, health and productivity problems in intensive dairy farming worldwide. It causes pain, reduces cow’s longevity, milk production and reproductive performance; therefore, it has great economic impact. We have determined prevalence of lameness in Canadian dairy herds and investigated herd-level control measures for this disorder. Currently, we focus on prevention and control of the most common foot disease, digital dermatitis. Results of studies are implemented in 2 important Canadian lameness control programs: the Alberta Dairy Lameness Reduction Initiative and the Animal Care component of the mandatory proAction Initiative of Dairy Farmers of Canada.

**6. *Neospora caninum* and prevention and control of neosporosis** (13 papers in refereed journals, 1 accepted paper). *Neospora caninum* is the most frequent cause of abortion outbreaks in cattle herds. We demonstrated that dogs are an important transmission vector in dairy cattle. In a series of fundamental and epidemiological studies, we demonstrated for the first time that dogs could be infected by consumption of infected placentas (fetal membranes) and that introduction of a dog to the farm was associated with outbreaks. We have also found that the coyote may be a definitive host for *N. caninum*. These results have lead to easily implemented control mechanisms to reduce the incidence of this disease in dairy cattle.

1. **Prevention and control of gastro-intestinal infections in cattle** (18 papers in refereed journals). A significant proportion of dairy cows are infected with gastro-intestinal parasites such *Giardia* *duodenalis* and *Cryptosporidium* spp. or pathogenic microbes such *Salmonella* species. Outbreaks cause significant economic losses and shedding animals can be a source of food-borne infections. We have determined the prevalence of infection and risk factors for introduction and persistence of these infectionsin dairy herds. Also, we have validated cow- and herd-level tests for detection of these infections in dairy herds. Our results were used to design various North-European *Salmonella* programs.
2. **Building a research-intensive department**

As Head of the Department of Production Animal Health, I have actively built a research-intensive department (without compromising the quality of teaching DVM and graduate students). After 6 years of building, we now have a well-functioning multidisciplinary department of 17 faculty members. I have mentored all young faculty members (9 have started in our department as 1st year assistant professor), and am co-investigator on many of their first grant proposals. When their CV was not yet sufficient, we have submitted grant proposals with myself as PI and them as Co-PI, with the intention that they would be the supervisor of the graduate student and lead the project. This has been important to start their career, and I am proud to see that all research-intensive members of my department are now successful on their own in obtaining research funding and supervision of graduate students. After 6 years, I handed the Headship over to Dr. John Kastelic, because I have become an NSERC Industrial Research Chair in Infectious Diseases of Dairy Cattle.

**12. Grants received**

Total >$50M ($28M as PI)

**Since start at Univ. of Calgary (August, 2006 –):**

* Implementation, impacts and economic aspects of selective dry cow therapy and selective treatment of clinical mastitis in Canadian dairy herds. Agriculture and Agri-Food Canada and Dairy Farmers of Canada, Dairy Cluster 4. 2023, $530,392. PI.
* Impact of maternal thermal stress on offspring's survival and performance in cattle. Margaret Gunn Endowment for Animal Research (MGEAR), 2022, $56,202. Co-I.
* Mitigating *Salmonella* Dublin infections in pre-weaned dairy calves. RDAR - Results Driven Agriculture Research, 2022, $436,250. Co-I.
* Impact of reducing colistin use on colistin resistance in humans and poultry in Indonesia (COINCIDE). JPI-AMR and CIHR, 2021, $1,594,540 (€1,105,603), Co-Principal Applicant
* Improving knowledge transfer and translation success for dairy producers and the Canadian public. RDAR - Results Driven Agriculture Research, 2021, $75,950. PI.
* Understanding the effects of outdoor access for dairy cows on transition cow health. RDAR - Results Driven Agriculture Research, 2021, $179,469. PI.
* One Health Modelling Network for Emerging Infections. Emerging Infectious Disease Modelling (EIDM), NSERC and PHAC, 2021, $2,500,000. Co-Principal Applicant
* Cattle Health Surveillance System (CHeSS) of major infectious diseases in Alberta. Results Driven Agriculture Research (RDAR), Agriculture Funding Consortium, Canadian Agricultural Partnership (CAP) and Westgen Endowment Fund, 2021, $334,410. PI.
* Alternative approaches to prevent or treat mastitis in dairy cows. Results Driven Agriculture Research (RDAR), Agriculture Funding Consortium and Canadian Agricultural Partnership (CAP), 2021, $272,183. Co-I.
* Supporting positive mental health of early-career veterinary practitioners. Zoetis Investment in Innovation Fund, 2020, $30,000. Co-I.
* Metalloproteinases in ulcerative digital dermatitis, a novel target for reparative therapies. Agriculture Funding Consortium, 2020, $224,876. Co-I.
* Health impacts of optimized pre-conditioning in beef cattle. Agriculture Funding Consortium, 2020, $133,250. Co-I.
* One Health Network for the Global Governance of Infectious Diseases and Antimicrobial Resistance. Canadian Institutes of Health Research (CIHR), 2019, $2,000,000. Co-applicant
* Effective and economic Johne’s disease control using new early disease detection assays. Alberta Agriculture and Forestry, 2019, $288,160, PI.
* NSERC Industrial Research Chair in Infectious Diseases of Dairy Cattle. Supported by Alberta Milk, Dairy Farmers of Canada, Dairy Farmers of Manitoba, BC Milk, SaskMilk, Westgen Endowment Fund, Lactanet, and MSD Animal Health, 2019 (renewal), $1,761,200. PI
* Production and health impacts from seasonal feeding of garlic products to growing cattle. Canadian Agricultural Partnerships and Saskatchewan Agricultural Development Fund. 2019. $271,600. Co-I.
* One Health Emerging Cross-cutting Research Theme. University of Calgary, Vice-President of Research. 2019, $1,000,000. PI and Lead.
* Antimicrobial resistance – One Health Consortium. Alberta Ministry of Economic Development and Trade. 2019, $15,569,460. PI and Scientific Director.
* Improving the cure for digital dermatitis: Understanding the critical role of macrophages. Strategic Research and Development Program with the Ministry of Alberta Agriculture and Forestry (AF). 2019. $203,416. Co-investigator.
* The Canadian Bovine Mastitis and Milk Quality Research Network: continuing the advancement of milk quality in Canada. Agriculture and Agri-Food Canada and Dairy Farmers of Canada, Dairy Cluster 3. 2018, $1,249,999. Co-PI.
* Antimicrobial stewardship and its impact on antimicrobial use, antimicrobial resistance, and animal health on dairy farms. Agriculture and Agri-Food Canada and Dairy Farmers of Canada, Dairy Cluster 3. 2018, $1,582,089. Co-PI.
* Designation of the Rocky Mountain Data Science Center as a CANSSI Health Sciences Collaborating Centre (HSCC). Canadian Statistical Science Institute (CANSSI), 2017. $20,000. Co-applicant.
* Healthy dairy herds: supporting producers to mitigate lameness on dairy farms. ALMA, 2016. $150,980. Co-investigator.
* Novel synergistic antimicrobial methods to inhibit antibiotic-resistant bovine mastitis pathogens. ALMA, 2016. $149,000. Co-investigator.
* Systematic review on the use in food animals of critically important antimicrobial agents for food animals. World Health Organization, 2016. $50,000. Co-investigator.
* Phage-enhanced direct fecal assay of *Mycobacterium avium* subspecies *paratuberculosis* in cattle. Alberta Livestock and Meat Agency, 2016. $247,500. Co-investigator.
* Characteristics of coagulase-negative staphylococci influencing virulence and inhibition of other mastitis pathogens. NSERC Discovery Grant, 2016. $195,000. PI.
* Efficacy of nitric oxide (NO) treatment for digital dermatitis. Growing Forward 2: Agri-Innovation Program British Columbia, Alberta Milk, and BC DIREC, 2016, $182,728. Co-PI.
* Reverse vaccinology approach for the prevention of mycobacterial disease in cattle. Genome Canada LSARP, 2015, $7,343,840. Co-Applicant.
* Evaluation of the efficacy of in-parlor treatment of digital dermatitis. Alberta Milk and Growing Forward 2, 2015, $82,000. PI
* NSERC CREATE in Milk Quality. NSERC, 2015. $1,650,000. Co-applicant.
* Development of a bovine leukemia virus control program in Alberta. Alberta Livestock and Meat Agency, and Alberta Milk, 2015, $93,486. Co-investigator.
* NSERC Industrial Research Chair in Infectious Diseases of Dairy Cattle. Supported by Alberta Milk, Dairy Farmers of Canada, Dairy Farmers of Manitoba, BC Milk, Westgen Endowment Fund, CanWest DHI, and Canadian Dairy Network, 2014, $1,800,000. PI
* Application of laboratory assays for product efficacy studies focusing on treatment and control of Digital Dermatitis in cattle to improve animal welfare. Alberta Livestock and Meat Agency and Alberta Milk. 2014, $124,510. Co-investigator.
* A national dairy cattle health and management benchmarking study. Agriculture and Agri-Food Canada and Dairy Farmers of Canada, Dairy Cluster 2. 2013, $950,000. Co-investigator.
* Automatic milking systems: factors affecting health, productivity and welfare. Agriculture and Agri-Food Canada and Dairy Farmers of Canada, Dairy Cluster 2. 2013, $378,082. Co-investigator.
* Canadian Bovine Mastitis and Milk Quality Research Network. Agriculture and Agri-Food Canada and Dairy Farmers of Canada, Dairy Cluster 2. 2013, $1,714,722. Co-PI.
* Impact of management practices on antimicrobial resistance in bovine mastitis pathogens. Agriculture and Agri-Food Canada and Dairy Farmers of Canada, Dairy Cluster 2. 2013, $145,462 (within Canadian Bovine Mastitis and Milk Quality Research Network funding in Dairy Cluster 2). PI.
* Better animal welfare leads to improved animal health and longevity, and economic advantages to dairy producers. Agriculture and Agri-Food Canada and Dairy Farmers of Canada, Dairy Cluster 2. 2013, $630,240. Co-investigator.
* Evaluation of an alternative environmental sample collection method to detect dairy herds infected with *Mycobacterium avium* subspecies *paratuberculosis* (MAP). Canadian Agricultural Adaptation Program, and Alberta Milk, 2013, $23,300. PI.
* Broad-spectrum infrared thermography for use as an early detection method for Digital Dermatitis in dairy cattle. Canadian Agricultural Adaptation Program, and Alberta Milk, 2013, $12,500. PI.
* Effectiveness of a standardized footbath protocol in the prevention of bovine digital dermatitis on dairy farms in Alberta. Alberta Livestock and Meat Agency, and Alberta Milk, 2013, $184,000. Co-investigator.
* Hoofbath efficacy evaluation. DeLaval, 2013, $81,900. PI.
* Effectiveness of farm pasteurization to control horizontal transmission of *Mycobacterium avium* subsp. *paratuberculosis*. UCVM Clinical Research Grant competition, 2013, $14,970. PI.
* A translational approach to understanding and managing Primary Sclerosing Cholangitis. The Faculty of Medicine and Alberta Health Services (Calgary Zone) Emerging Research Teams Grant Program, 2011, $300,000. Co-investigator.
* The partnership between University of Calgary Faculty of Veterinary Medicine and Kerala Veterinary & Animal Sciences University to promote education, research, and knowledge transfer. Partnership Development Seed Grant, Shastri Indo-Canadian Institute, 2011, $10,000. Co-applicant.
* Integrated analysis of *Mycobacterium avium* subspecies *paratuberculosis* genotype and phenotype: identifying vaccine targets. Alberta Livestock and Meat Agency, 2011, $498,897. Co-investigator.
* Characterization of coagulase-negative staphylococcal species isolated from intramammary infections and extramammary sites on dairy farms. Agriculture Funding Consortium. 2011, $270,581. Co-investigator.
* Transmission pattern profiling of *Mycobacterium avium* subsp. *paratuberculosis* between and within Canadian dairy herds by fast and discriminating strain typing. Dairy Farmers of Canada. 2010, $94,000. PI.
* Inhalation as route of transmission for *Mycobacterium avium* subspecies *paratuberculosis*; comparison of intratracheal and aerosolized challenge. Agricultural Funding Consortium, 2010, $126,908. Co-investigator.
* Rapid identification and consequences of intramammary infection with coagulase-negative staphylococci. Agriculture and Agri-Food Canada and Dairy Farmers of Canada, Dairy Cluster 1. 2010, $149,845. PI.
* Reducing intramammary infection in free-stall housed dairy cows: interaction of post-milking standing time with cow cleanliness, lameness, and social status. Agriculture and Agri-Food Canada and Dairy Farmers of Canada, Dairy Cluster 1. 2010, $108,364. Co-investigator.
* Developing a molecular phenotype to select for robust beef cattle to reduce cost of production and improve animal health, animal welfare and food safety. Agricultural Funding Consortium, 2010, $652,050. Co-investigator.
* The influence of management practices on claw health, lameness and animal welfare on Alberta dairy farms. Alberta Livestock and Meat Agency, 2010, $158,350. Co-PI.
* Improving cow comfort to increase longevity in tie stalls and free stalls. Agriculture and Agri-Food Canada and Dairy Farmers of Canada, Dairy Cluster 1. 2010, $215,000. Co-investigator.
* Enhancing sustainable production of safe, high quality milk by optimizing dairy farm best management practices for preventing mastitis and reducing its environmental impact. Agriculture and Agri-Food Canada and Dairy Farmers of Canada, Dairy Cluster 1. 2010, $315,000. PI.
* Assessment of health, welfare and milk composition on organic and conventional dairy farms. Organic Science Cluster, 2009, $360,000. Co-PI.
* Reducing the incidence of mastitis in robotic milking systems through feed bunk management and design. Ontario Ministry of Agriculture, Food & Rural Affairs, New Directions & Alternative Renewable Fuels Research Program, 2009, $88,351. Co-Investigator.
* Etiology of Inflammatory Bowel Disease: gene, microbe, and environment interactions. Alberta Heritage Foundation for Medical Research, 2009, $5,000,000. Team Leader.
* Age and dose dependent susceptibility of *Mycobacterium avium* subsp. *paratuberculosis* infection in calves. Agricultural Funding Consortium, 2009, $450,514. Co-PI.
* Prevalence and contact-structure analysis for transmission of important production limiting diseases of cattle and elk in southwest Alberta. Agricultural Funding Consortium, 2009, $102,640. Co-Investigator.
* Age dependent susceptibility of *Mycobacterium avium* subsp. *paratuberculosis* infection in calves. Dairy Farmers of Canada/NSERC, 2008, $237,281. Co-PI.
* Canadian Voluntary Johne’s Disease Prevention and Control Program. Advancing Canadian Agriculture and Agri-Food program, 2008, $191,000. Co-PI (proposal submitted by the Canadian Animal Health Coalition).
* Etiology of the Inflammatory Bowel Disease: gene, microbe & environment interactions. Alberta Heritage Foundation for Medical Research, 2008, $10,000 for composing the full proposal after approval of the Letter of Intent. Team Leader.
* Prevalence of methicillin-resistant *Staphylococcus aureus* (MRSA) and extended-spectrum- ß-lactamase (ESBL) *Escherichia coli* in milk samples of cows having clinical or subclinical mastitis. Public Health Agency of Canada, 2007, $71,732. Co-PI.
* Selenium status of Maritime dairy cows and its relationship to the incidence of new intramammary infections. Atlantic Veterinary College internal competition, 2007, $10,000. Co-investigator.
* Selenium and mastitis in early lactating dairy cows. Alltech Chile, 2007, $23,000. Co-PI.
* The identification of genetic polymorphisms and protein biomarkers that are associated with susceptibility or resistance to bovine Johne’s disease. Dairy cattle genetics research and development council (DAIRYGEN) of Canadian Dairy Network, 2006, $542,000. Co-investigator.

**UPEI (August, 2001 – August, 2006):**

* Maritime Quality Milk – Integrated milk quality research and services for enhanced competitiveness in the regional dairy-food sector. Atlantic Innovation Fund, 2006, $4,498,310. Co-PI.
* Determination of the relationship between bacterial concentration of *Mycobacterium avium* subsp. *paratuberculosis* in bovine feces and time to detection in TREK ESP Diagnostic unit. Atlantic Veterinary College internal competition, 2006, $7350. Co-investigator.
* Presence of mastitis pathogens in culture-negative milk samples from cows with clinical mastitis. National Mastitis Research Foundation, 2006, US$15,000. PI.
* Local Support for the Canadian Bovine Mastitis Research Network. TechPEI, 2006, $170,000. Co-PI.
* Fecal survey of parasites infecting humane society animals. Sir James Dunn Animal Welfare Centre, 2005, $28,910. Co-PI.
* Canadian Bovine Mastitis Research Network. NSERC Research Networks, 2005, $9,312,220. Theme leader of one of the two research themes, the Monitoring theme.
* Association between antimicrobial usage in mastitis treatment and control, and antimicrobial resistance. NSERC Research Networks. Project within Canadian Bovine Mastitis Research Network, 2005, $507,910. PI.
* Validation of *Neospora caninum* ELISA for use in bulk tank milk samples. Atlantic Veterinary College internal competition, 2005, $5505. PI.
* The effect of intramammary antimicrobial therapy at dry-off on antimicrobial resistance in commensal fecal *Escherichia coli* bacteria on Quebec dairy farms. CORPAQ, 2005, $100,000. Co-PI.
* Prevalence and transmission of *Giardia* and *Cryptosporidium* at the farm level. APF project 4500609 (Health Canada and Agriculture and Agri-Food Canada), 2004, $320,000. PI.
* Efficacy of vaccination in preventing giardiasis in calves. Atlantic Veterinary College internal competition, 2004, $7485. PI.
* Role of wild canids in the epidemiology of *Neospora caninum*. Atlantic Veterinary College internal competition, 2004, $6746. PI.
* Estimation of sensitivity of individual and pooled fecal culture for detection of *Mycobacterium* *avium* subsp. *paratuberculosis* infection in dairy cattle. Dairy Farmers of Canada/NSERC, 2004, $106,510. PI.
* Assessment of the mastitis situation in Canada. Dairy Farmers of Canada/NSERC, Canadian Bovine Mastitis Research Network, 2003/2004, $209,912. PI.
* Establishment of laboratory facilities for *Mycobacterium* *avium* subsp. *paratuberculosis* at the Atlantic Veterinary College. Canadian Foundation for Innovation, New Opportunities, 2003, $178,079. PI.
* Zoonotic potential and transmission dynamics of *Giardia* and *Cryptosporidium* infections in domestic livestock. PEI Health Research Institute, Group Development Award, 2003, $2,500. PI.

**Before start position at UPEI:**

* Cohort of herds infected with paratuberculosis, Dairy Commodity Board, Ministry of Agriculture, The Netherlands, 2000-2003, $1,380,000. PI.
* Objective parameters related to chronic wasting in Dutch dairy farms, Ministry of Agriculture and Dairy Commodity Board, The Netherlands, 2000, $330,000. PI.
* Paratuberculosis in roes, Ministry of Agriculture, 2000, $35,000. Co-PI.
* Most rapid eradication of paratuberculosis in infected herds, Dairy Commodity Board, Ministry of Agriculture, The Netherlands, 2000-2002, $212,000. PI.
* Robotic milking and mastitis, European Community, 2000, $441,000. Co-investigator
* Role of Calcium in retained placenta of Friesian mares, Commission Promotion of Veterinary and Comparative Research of Animal Diseases, The Netherlands, 2000, $9,000 (supervisor). Co-PI.
* Randomized clinical trial on the efficacy of a J5-vaccine for Gram-negative mastitis, Merial, The Netherlands, 1999-2000, $55,000. PI.
* Epidemiology *of Neospora caninum,* Dairy Commodity Board, The Netherlands, 1999-2002, $640,000. Co-PI.
* Development of a bulk milk ELISA for *Neospora caninum,* Dairy Commodity Board, The Netherlands, 1999-2000, $64,000. Co-PI.
* Randomized clinical trial two dry cow treatments, Elanco Animal Health, The Netherlands, 1999-2000, $26,000. PI.
* Cohort study of 100 paratuberculosis-unsuspected herds, Dairy Commodity Board, Ministry of Agriculture, The Netherlands, 1999-2002, $244,000. PI.
* A new type *of Salmonella typhimurium* in Dutch dairy herds, Dairy Commodity Board, Ministry of Agriculture, The Netherlands, 1999-2000, $150,000. Co-PI.
* Validation of a bulk milk ELISA for *Salmonella dublin,* Dairy Commodity Board, Ministry of Agriculture, The Netherlands, 1999, $67,000. PI.
* Specificity of Johnine and gamma-interferon for paratuberculosis, Dairy Commodity Board, Ministry of Agriculture, The Netherlands, 1999-2000, $ 146,000. Co-PI.
* Role of viruses in the prevalence of subclinical mastitis, ID-Lelystad, 1999, $70,000. PI.
* Randomized clinical trial of two clinical mastitis treatments, Pharmacia and Upjohn, Belgium, 1999, $41,000. PI.
* Role of viruses in the incidence of clinical mastitis, ID-Lelystad, The Netherlands, 1998-1999, $50,000. PI.
* Randomized clinical trial of two clinical mastitis treatments, Intervet International, 1998-1999, $48,000. PI.
* Randomized clinical trial of two dry cow treatments, Intervet International, 1998-1999, $70,000. PI.
* Prevalence of management measures to prevent infection with paratuberculosis in Dutch cow-calf herds, Dairy Commodity Board, Ministry of Agriculture, The Netherlands, 1998-1999, $49,000. PI.
* Prevalence of management measures to prevent infection with paratuberculosis in Dutch dairy herds, Dairy Commodity Board, Ministry of Agriculture, The Netherlands, 1998-1999, $103,000. PI.
* Seroprevalence of paratuberculosis in Dutch cow-calf herds using an absorbed ELISA, Dairy Commodity Board, Ministry of Agriculture, The Netherlands, 1998-1999, $112,000. PI.
* Seroprevalence of paratuberculosis in Dutch dairy herds using an absorbed ELISA, Dairy Commodity Board, Ministry of Agriculture, The Netherlands, 1998-1999, $318.000. PI.
* Validation of an absorbed ELISA for detection of antibodies to *Mycobacterium avium* subsp. *paratuberculosis,* Dairy Commodity Board, Ministry of Agriculture, The Netherlands, 1998, $24,000. Co-PI.
* Association between heat stress and mastitis, Dairy Commodity Board, The Netherlands, 1998, $15,000. PI.
* Epidemiology *of Staphylococcus aureus* on low BMSCC Herds, Intervet, Dairy Commodity Board, The Netherlands, 1997-2001, $470,000. Co-PI.
* Randomized clinical trial of treatment of mastitis in early lactation, Pharmacia and Upjohn, Belgium, 1996, $66,000. PI.
* Association between ‘closed’ dairy farming and disease, Dairy Commodity Board, Ministry of Agriculture, The Netherlands, 1995-1999, $327,000. PI.
* Mastitis and teat-end callosity, Dutch dairy board, Dairy Commodity Board, The Netherlands, 1995-1999, $353,000. PI.
* Excretion of oxytetracycline and lugol in milk of intrauterine treated cows, Commission Promotion of Veterinary and Comparative Research of Animal Diseases, The Netherlands, 1993, $9,000 (co-investigator). Co-PI.
* Clinical mastitis in three bulk milk somatic cell count cohorts, J. Mesdag Foundation, Animal Health Service in the northern Netherlands, 1992-1998, $621,000. PI.

**13. Graduate Students and Postdoctoral fellows**

**Current**

1. Sebastian Olivares Herrera. Started September 2023, PhD, UofC. Effect hot weather on disease incidence (co-supervisor. Supervised by Dr. Juan Hernandez, cattle health specialist UCVM).
2. Ana Carolina Pereira. Started September 2022, MSc, UofC. Control Johne’s disease (co-supervised by Dr. Karin Orsel, epidemiologist UCVM)
3. Berina Traub. Started September 2022, MSc, UofC. Outdoor access of dairy cattle.
4. Julia Bodaneze. Started January 2022, MSc, UofC. Antimicrobial stewardship on dairy farms.
5. Waseem Shaukat. Started September 2021, PhD, UofC. Surveillance of infectious diseases in dairy cattle.
6. Ben Caddey. Started September 2021, PhD, UofC. Reduction of antimicrobial use on Canadian dairy farms.
7. Marit Biesheuvel. Started September 2020, PhD, UofC. Control of infectious diseases in dairy cattle.
8. Linda Dorrestein. Started May 2019, PhD, UofC. Communication between veterinary practitioner and farmers (co-supervised by Dr. Caroline Ritter, epidemiologist UPEI).
9. Mark Lowerison. Started in September 2015, PhD, UofC (part-time). Biostatistical analysis of large health datasets (co-supervised by Dr. Rob Deardon, biostatistician UCVM).

**Defended**

1. Ellen de Jong. 2019-2023, PhD, UofC. Antimicrobial resistance in Alberta dairy herds. Enhancing antimicrobial stewardship on dairy farms with a focus on selective treatment of clinical mastitis.
2. Saranya Narayana. 2016-2023, PhD, UofC. Genetics and genomics of bovine mastitis (co-supervised by Dr. Flavio Schenkel, geneticist UofGuelph).
3. Larissa Martins. 2020-2023, MSc, UofC. Detection of Johne’s disease on dairy farms using different qPCR target genes for *Mycobacterium avium* spp *paratuberculosis* in young stock (co-supervised by Dr. Karin Orsel, epidemiologist UCVM).
4. Lindsay Whelan. 2021-2023, MSc, UofC. Barriers and facilitators to the implementation of a decolonization strategy for *Staphylococcus aureus* prior to hip and knee arthroplasty in Alberta, Canada: A multi-methods study (co-supervisor; supervised by Dr. Elissa Rennert-May, infectious diseases physician Cumming School of Medicine).
5. Kayley McCubbin. 2018-2023, PhD, UofC. Antimicrobial stewardship: A One Health approach with a focus on antimicrobial resistance in dairy cattle.
6. Syed Ali Naqvi. 2016-2021, PhD, UofC. Big data and machine learning tools to understand mastitis epidemiology and other topics.
7. Diego Nobrega. 2017-2020, PhD, UofC. Antimicrobial resistance: Prevalence, genetics and associations with antimicrobial use in food-producing animals.
8. Jennifer Ida. 2017-2020, MSc, UofC. Jennifer Ida. Started September 2017, MSc, UofC. Motivating veterinarians to assist dairy farmers to decrease the use of antimicrobials.
9. Mengyue Li. 2017-2019, MSc, China Agricultural University, visiting graduate student. Inhibition of major udder pathogens by coagulase-negative staphylococci.
10. Paloma Cavalcante. 2016-2019, MSc, UofC. Cathelicidin mitigates murine *Staphylococcus aureus* mastitis and prevents bacterial invasion in mammary epithelial cells (co-supervisor; supervised by Dr. Eduardo Cobo, UCVM).
11. Casey Jacobs. 2014-2019, PhD, UofC. On-farm control of digital dermatitis in dairy cows.
12. Bayan Missaghi. 2013-2018 (part-time), MSc, UofC. The human microbiome: Implications for health and disease
13. Kaitlyn Watts. 2016-2018, MSc, UofC. Exploration of innate immune response during infectious bovine digital dermatitis and the evaluation of topical therapeutic treatment (co-supervisor; supervised by Dr. Eduardo Cobo, UCVM).
14. Caroline Corbett. 2013-2018, PhD, UofC. *Mycobacterium avium* subsp. *paratuberculosis*: Herd prevalence and calf-to-calf transmission
15. Carolina Ritter. 2013-2018, PhD, UofC. Disease control on dairy farms with a focus on Johne’s disease and veterinary communication
16. Domonique Carson. 2014-2017, MSc, UofC. Bacteriocins in bovine non-*aureus* staphylococci
17. Larissa Condas. 2013-2016, MSc, UofC. The distribution of *Staphylococcus* non-*aureus* in bovine mastitis
18. Gang Liu. 2013-2017, PhD, Beijing Agricultural University, visiting graduate student. Effect of intramammary infection with coagulase-negative staphylococci on udder health, milk production and culling (co-supervisor; supervisor Dr. Han Bo, China Agricultural University).
19. Amanda Mirto. 2013-2017, MSc, UofC. Development of a marked live attenuated Johne’s disease vaccine strain (co-supervisor; supervisor Dr. Jeroen De Buck, UCVM).
20. Laura Solano. 2011-2016, PhD, UofC. Detection, prevention and control of lameness and foot lesions in Canadian dairy herds
21. Ana Bras. 2013-2015, MSc, UofC. *Mycoplasma bovis* in farmed bison: Analysis of the epidemiology of an emerging bison pathogen (co-supervisor; supervisor Dr. Claire Windeyer, UCVM).
22. Christina Ahlstrom. 2011-2015, PhD, UofC. The genomic diversity and molecular epidemiology of *Mycobacterium avium* subsp. *paratuberculosis* in Canadian dairy cattle (co-supervisor; supervisor Dr. Jeroen De Buck, UCVM).
23. Robert Wolf. 2010-2014, PhD, UofC. Control of *Mycobacterium avium* subspecies *paratuberculosis* on Western Canadian dairy farms; prevalence, diagnostics and risk factors (co-supervisor; supervisor Dr. Karin Orsel, UCVM).
24. Rienske Mortier. 2009-2014, PhD, UofC. Age- and dose-dependent susceptibility to *Mycobacterium avium* subsp. *paratuberculosis* in dairy calves
25. Maria Negron. 2010-2014, PhD, UofC. Non-medical reasons for colectomy among ulcerative colitis patients
26. Joel David. 2011-2013, MSc, UofC. Gene expression study of *Mycobacterium avium* subspecies *paratuberculosis* infected cows – “A road to identify transcripts that could serve as biomarkers for early diagnosis of Johne’s disease” (co-supervisor; supervisor Dr. Jeroen De Buck, UCVM).
27. Praseeda Ajitkumar. 2009-2012, MSc, UofC. Molecular techniques for the identification of bovine mastitis pathogens
28. Andrea Wasko. 2007-2012, MSc, University of Calgary. Equine lung inflammation in Alberta: Evaluation of clinical signs, risk-screening questionnaire, and bronchoalveolar lavage in recurrent airway obstruction and inflammatory airway disease (co-supervisor; supervisor Dr. Renaud Leguillette, UCVM).
29. Vineet Saini. 2007-2011, PhD, University of Calgary. Association between antimicrobial use and antimicrobial resistance in bovine mastitis pathogens
30. Jan Lievaart. 2004-2010, PhD, Utrecht University. Somatic cells counts in dairy herds
31. Alejandro Ceballos. 2005 - 2010, PhD, UPEI. Selenium supplementation in cattle: transfer to milk and udder health (co-supervisor; supervisor Dr. Jeff Wichtel, UPEI).
32. Sofie Piepers. 2006 - 2010, PhD, Ghent University, Belgium. Udder health of dairy heifers in early lactation: risk factors at the herd-, heifer-, and quarter- level, and the impact on performance during first lactation (co-supervisor; supervisor Dr. Sarne De Vliegher, Ghent University).
33. Otlis Sampimon. 2004 – 2009, PhD, Utrecht University, The Netherlands. Coagulase-negative staphylococci mastitis in Dutch dairy herds (co-supervisor; supervisor Dr. Theo Lam, Utrecht University).
34. Richard Olde Riekerink. 2003 – 2007, PhD, UPEI. Assessment of the mastitis situation in Canada
35. Fabienne Uehlinger. 2003 – 2007, PhD, UPEI. Prevalence and zoonotic potential of Giardia *duodenalis* in cattle and dogs
36. Wendela Wapenaar. 2003 – 2006, PhD, UPEI. Epidemiology of Neospora caninum in dairy cattle and wild canids on Prince Edward Island
37. Shawn McKenna. 2001- 2005, PhD, UPEI. Detection of bovine paratuberculosis (co-supervisor; supervisor Dr. Greg Keefe, UPEI).
38. Zhiying Zhang. 2002 – 2005, MSc, UPEI. Use of bioactive compounds to preserve boar sperm
39. Francesca Neijenhuis. 1997 - 2004, PhD, Utrecht University, The Netherlands. Teat condition in dairy cows (co-supervisor; supervisor Dr. Henk Hogeveen, Utrecht University).
40. Mello Sevinga. 1999 - 2004, PhD, Utrecht University, The Netherlands. Retained placenta in Friesian horses
41. Sarne de Vliegher. 2000 - 2004, PhD, Ghent University, Belgium. Udder health in dairy heifers. Some epidemiological and microbiological aspects
42. Jan Veling. 1998 - 2004, PhD, Utrecht University, The Netherlands. Diagnosis and control Salmonella Dublin infections on Dutch dairy farms
43. Kees Kalis. 1998 - 2003, PhD, Utrecht University, The Netherlands. Diagnosis and control of paratuberculosis in dairy herds
44. Yvette de Haas. 1999 - 2003, PhD, Wageningen University, The Netherlands. Genetics of bovine mastitis and somatic cell count (co-supervisor; supervisor Dr. Roel Veerkamp, Wageningen University).
45. Jan Sol. 1997 - 2002, PhD, Utrecht University, The Netherlands. Cure of Staphylococcus aureus mastitis in Dutch dairy cows
46. Thomas Dijkstra. 1999 - 2002, PhD, Utrecht University, The Netherlands. Horizontal and vertical transmission of Neospora caninum
47. Ruth Zadoks. 1997 - 2002, PhD, Utrecht University, The Netherlands (with distinction). Molecular and mathematical epidemiology of Staphylococcus aureus and Streptococcus uberis mastitis in dairy herds (co-supervisor; supervisor Dr. Ynte Hein Schukken, Utrecht University).

**Postdoctoral fellows**

1. Anne-Marieke Smid. 2019 -, UofC. Outdoor access of Canadian dairy cattle.
2. Helen Becker. 2013 – 2015, UofC. The role of microbial infection in Crohn’s disease.
3. Vineet Saini. 2011 – 2013, UofC. Epidemiology of infectious diseases (co-supervisor).
4. Ajitkumar Gopinathamenon. 2009 - 2010, UofC. An epidemiologic analysis of the incidence and causes of culling in Alberta beef bulls

**Graduate and examination committees**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Student** | **Year** | **Program** | **Graduate committee** | **Comprehensive or Candidacy exam** | **Examination committee** |
| Ebo Budu-Amoako1 | 06-11 | PhD | X |  |  |
| Tatjana Coklin2 | 05–07 | MSc | X |  |  |
| Elmabrok Masaoud1 | 04–06 | PhD | X |  |  |
| Tim Burnley1 | 04–06 | MSc | X (chair) |  |  |
| Nicole O’Brien1 | 04–06 | MSc | X (chair) |  |  |
| Linda Waite1 | 2004 | MSc |  |  | X |
| Pascale Nerette1 | 2004 | PhD |  | X |  |
| Christine MacWilliams1 | 03–09 | MSc | X |  |  |
| Carolyn Sanford1 | 02–05 | PhD | X | X |  |
| Fortune Sithole1 | 02–05 | PhD | X | X | X |
| Sarah Purcell1 | 02–06 | PhD | X |  |  |
| Pipat Arunvipas1 | 2003 | PhD |  | X |  |
| Vicky Benson1 | 2003 | PhD |  | X |  |
| Joao Paulo Haddad1 | 2003 | PhD |  | X | X |
| Aboubakar Mounchili1 | 2003 | PhD |  | X |  |
| Ashwani Tiwari1 | 2003 | PhD |  | X | X |
| Liza Rosenbaum-Nielsen3 | 2003 | PhD |  |  | X |
| Åse Margrethe Sogstadt4 | 2006 | PhD |  |  | X |
| Roberta Lea McCombie5 | 2007 | PhD |  | X |  |
| Simon Dufour6 | 07-11 | PhD | X |  | X |
| Chris Bartels7 | 2007 | PhD |  |  | X |
| Suvi Taponen8 | 2008 | PhD |  |  | X |
| Byron Weckworth5 | 08-12 | PhD | X | X | X |
| Pieter Passchyn9 | 08-15 | PhD | X |  |  |
| Carrie Lavers1 | 09-14 | PhD | X |  |  |
| Patricia Curry5 | 08-12 | PhD |  | X |  |
| Oudesso Kerro Dego10 | 2009 | PhD |  |  | X |
| Natalie Molodecky5 | 09-11 | MSc | X |  | X |
| Matthieu Pruvot5 | 09-14 | PhD | X | X | X |
| Fox Underwood5 | 10-13 | MSc | X | X | X |
| Vanessa Oliver5 | 2010 | MSc |  |  | X |
| Christopher Luby10 | 2010 | PhD |  |  | X |
| Kaiyu Wu5 | 2011 | PhD |  |  | X |
| Susanne Eisenberg7 | 2011 | PhD |  |  | X |
| Guilherme Bond5 | 11-16 | PhD | X | X | X |
| Barbara Wolfger5 | 11-15 | PhD | X | X | X |
| Yasmeen Khalil5 | 11-13 | MSc | X |  | X |
| Jesse Invik5 | 11-15 | MSc | X |  | X |
| Kristen Reti5 | 12-14 | MSc | X |  | X |
| Kristin Eccles5 | 12-14 | MSc | X |  | X |
| Alysha Rusk5 | 14-17 | MSc | X |  | X |
| Sarah Akierman5 | 2015 | MSc |  |  | X |
| Jason Jiang5 | 2015 | MSc |  |  | X |
| Anneleen De Visscher9 | 2016 | PhD |  |  | X |
| Christina Tse5 | 14-16 | MSc | X |  | X |
| Hossein Jamali6 | 14-18 | PhD | X |  |  |
| Ivelisse Robles11 | 14-19 | PhD | X |  |  |
| Emily Morabito5 | 15-17 | MSc | X |  | X |
| Mahjoob Aghamohammadi6 | 15-19 | PhD | X |  |  |
| Alessa Kuczewski5 | 15-19 | PhD | X | X | X |
| Ravi Holani5 | 15-20 | PhD | X |  | X |
| Philip Rasmussen5 | 17-20 | PhD | X | X | X |
| Michelle van Huyssteen5 | 17-19 | MSc | X |  | X |
| Priyoshi Lahiri5 | 19-23 | PhD | X | X | X |
| Dennis Vu5 | 20-23 | MSc | X |  | X |
| Conor McAloon12 | 2017 | PhD |  |  | X |
| Tariq Ali13 | 2018 | PhD |  |  | X |
| Abdel Aziz Shaheen5 | 2018 | MSc | X |  |  |
| Michael Sanderson5 | 2020 | PhD |  |  | X |
| Devon Boyne5 | 2020 | PhD |  |  | X |
| Samreen Shafiq5 | 2020 | MSc |  |  | X |

1University of Prince Edward Island; 2Universityof Ottawa; 3University of Copenhagen, Denmark; 4Norwegian Veterinary School, Oslo, Norway; 5Universityof Calgary; 6University of Montreal; 7Utrecht University, The Netherlands; 8University of Helsinki, Finland; 9Ghent University, Belgium; 10University of Saskatchewan; 11University of Guelph;12University College Dublin, Ireland; 13China Agricultural University, Beijing, China.

In addition, I have chaired many MSc and PhD thesis defenses and candidacy/field of study exams as a neutral chair.

**14. Publications**

**Graduate students of Dr. Barkema are printed in bold.**

**Every underlined authorship reflects senior authorship position.**

**H-index Web of Science (Core Collection): 73; Google Scholar: 99**

## Refereed Journals:

1. Xu M., Z. Zhu, S. Meng, H. Li, A. Wang, H.W. Barkema, E.R. Cobo, J.P. Kastelic, M. Asfandyar Khan, J. Gao, and B. Han. 2024. Heme oxygenase activates calcium release from the endoplasmic reticulum of bovine mammary epithelial cells to promote TFEB entry into the nucleus to reduce the intracellular load of *Mycoplasma bovis*. *Microbiol Res* 284:127727.
2. Yang J., Y. Xiong, H.W. Barkema, X. Tong, Y. Lin, Z. Deng, J.P. Kastelic, D. Nobrega, Y. Wang, B. Han, and J. Gao. 2024. Comparative genomic analysis of *Klebsiella pneumoniae* K57 capsule serotypes isolated from bovine mastitis in China. *J Dairy Sci* 107:3114-3126.
3. Knauss M., E. Spackman, H.W. Barkema, E.A. Pajor, B. Knauss, and K. Orsel. 2024. Partial herd hoof trimming results in a higher economic net benefit than whole herd hoof trimming in dairy herds. *PLoS ONE* 19:e0301457.
4. Ghafouri F., V.D. Reyhan, M. Sadeghi, S.R. Miraei-Ashtiani, J.P. Kastelic, H.W. Barkema, and M. Shirali. 2024. Competing endogenous RNAs (ceRNAs) and application of their regulatory networks in complex traits and diseases of ruminants. *Ruminants* 4:165-181.
5. Brunskill I., D.S. Somanader, M. Perrin, H.W. Barkema, S. Hillier, S. Hindmarch, E. Topp, J.S. Weese, G.D. Wright, and A.M. Morris. 2024. Seeing the whole elephant: Designing ‘One Health’ governance to fight antimicrobial resistance. *Clin Microbiol Infect* 30:419-422.
6. Fonseca M., L. Heider, H. Stryhn, J.T. McClure, D. Léger, D. Rizzo, S. Dufour, J.-P. Roy, D.F. Kelton, D. Renaud, H.W. Barkema, and J. Sanchez. 2024. Frequency of isolation and phenotypic resistance of fecal *Salmonella* enterica recovered from dairy cattle in Canada. *J Dairy Sci* 107:2357-2373.
7. Khan S., T. Wang, E.R. Cobo, B. Liang, M. Asfandyar Khan, M. Xu, W. Qu, J. Gao, H.W. Barkema, J.P. Kastelic, G. Liu, and B. Han. 2024. Anti-oxidative Sirt1 and the Keap1-Nrf2 signaling pathway impaired inflammation and positively regulate autophagy in murine mammary epithelial cells or mammary glands infected with *Streptococcus uberis*. *Antioxidants*. 13:171.
8. **Whelan L.**, J. Leal, M. Leslie, H.W. Barkema, W. Ocampo, and E. Rennert-May. 2024. Patient compliance with the implementation of a decolonization strategy for *Staphylococcus aureus* in hip and knee replacements. *Am J Infect Contr* 52:207-213.
9. **Biesheuvel M.M.**, C. Ward, P. Penterman, E. van Engelen, G. van Schaik, R. Deardon, and H.W. Barkema. 2024. Within-herd transmission of *Mycoplasma bovis* infections after initial detection in dairy cows. *J Dairy Sci* 107:503-517.
10. Shrestha S., K. Orsel, H.W. Barkema, **L. Martins**, S. Shrestha, and F.J.U.M. van der Meer. 2024. Effects of bovine leukemia virus seropositivity and proviral load on milk, fat, and protein production of dairy cows. *J Dairy Sci* 107:517-526.
11. **De Jong E., K.D. McCubbin,** T. Uyama, C. Brummelhuis, **J. Bodaneze**, D.F. Kelton, S. Dufour, J. Sanchez, J.-P. Roy, L.C. Heider, D. Rizzo, D. Léger, and H.W. Barkema. 2024. Adoption and decision factors regarding selective treatment of clinical mastitis on Canadian dairy farms. *J Dairy Sci* 107:463–475.
12. **Whelan L.**, J. Leal, M. Leslie, H.W. Barkema, and E. Rennert-May. 2023. Baseline prevalence of antimicrobial resistance in patients who develop a surgical site infection in hip and knee arthroplasty: A brief report. *Am J Infect Contr* 51:1449–1451.
13. Singh B.B., R. Somayaji, R. Sharma, H.W. Barkema, and B. Singh. 2023. Editorial: Zoonoses - a one health approach. *Front Public Health* 11:1332600.
14. **Smid A.-M.C.**,V. Boone, M. Jarbeau, J. Lombard, and H.W. Barkema. 2023. Outdoor access practices in the Canadian dairy industry.*J Dairy Sci* 106:7711-7724.
15. **McCubbin K.D., E. de Jong, C.M. Brummelhuis, J. Bodaneze, M. Biesheuvel**, D.F. Kelton, T. Uyama, S. Dufour, J. Sanchez, D. Rizzo, D. Leger, and H.W. Barkema. 2023. Adoption and decision factors regarding selective dry cow therapy and use of teat sealants on Canadian dairy farms. *J Dairy Sci* 106:7104-7116.
16. Zhou M., H.W. Barkema, J. Gao, J. Yang, Y. Wang, J.P. Kastelic, Y. Shi, G. Liu, and B. Han. 2023. MicroRNA Bta-miR-223 modulates NLRP3 and Keap1, mitigating lipopolysaccharide-induced inflammation and oxidative stress in bovine mammary epithelial cells and murine mammary glands. *Vet Res* 54:78.
17. Dehghanian Reyhan V., F. Ghafouri, M. Sadeghi, S.R. Miraei-Ashtiani, J.P. Kastelic, H.W. Barkema, and M. Shirali. 2023. Integrated comparative transcriptome and circRNA-lncRNA-miRNA-mRNA ceRNA regulatory network analyses identify molecular mechanisms associated with intramuscular fat content in beef cattle. *Animals* 13:2598.
18. **McCubbin K.D., E. de Jong, A.-M. C. Smid, J.A. Ida, J. Bodaneze**, R.M. Anholt, S. Larose, S.J.G. Otto, and H.W. Barkema. 2023. Perceptions of antimicrobial stewardship: Identifying drivers and barriers across various professions in Canada utilizing a One Health approach. *Front Public Health* 11:1222149.
19. Ghafouri F., M. Sadeghi, A. Bahrami, M. Naserkheil, V. Dehghanian Reyhan, A. Javanmard, S.R. Miraei-Ashtiani, S. Ghahremani, H.W. Barkema, R. Abdollahi-Arpanahi, and J.P. Kastelic. 2023. Construction of a circRNA-lincRNA-lncRNA-miRNA-mRNA ceRNA regulatory network identifies genes and pathways linked to goat fertility. *Front Genet*. 14:1195480.
20. Fonseca M., L.C. Heider, H. Stryhn, J T. McClure, D. Léger, D. Rizzo, L. Warder, S. Dufour, J.P. Roy, D.F. Kelton, D. Renaud, H.W. Barkema, and J. Sanchez. 2023. Intramammary and systemic use of antimicrobials and their association with resistance in generic *Escherichia coli* recovered from fecal samples from Canadian dairy herds: A cross-sectional study. *Prev Vet Med* 261:105948.
21. **Dorrestein L.**, J. Jansen, T. Plagis, C. Ritter, G. Vertenten, and H.W. Barkema. 2023. Use of an online gaming tool, the Veterinary DialogueTrainer, for teaching clinical communication skills to bovine veterinary practitioners. *Front Vet Sci* 10:1192598.
22. Warder L.M.C., L.C. Heider, D. Léger, D. Rizzo, JT. McClure, **E. de Jong**, **K.D. McCubbin**, T. Uyama, M. Fonseca, A. Soffia Jaramillo, D. Kelton, D. Renaud, H.W. Barkema, S. Dufour, J-P. Roy, and J. Sánchez. 2023. Quantifying antimicrobial use on Canadian dairy farms using garbage can audits. *Front Vet Sci* 10:1185628
23. **De Jong E.**, **K.D. McCubbin**, D. Speksnijder, S. Dufour, J.R. Middleton, P.L. Ruegg, T.J.G.M. Lam, D.F. Kelton, S. McDougall, S.M. Godden, A. Lago, P.J. Rajala-Schultz, K. Orsel, S. De Vliegher,V. Krömker, **D.B. Nobrega**, J.P. Kastelic, and H.W. Barkema. 2023. Invited review: Selective treatment of clinical mastitis in dairy cattle. *J Dairy Sci* 106:3761-3778.
24. Lin Y., J. Han, H.W. Barkema, Y. Wang, J. Gao, J.P. Kastelic, B. Han, S. Qin, and Z. Deng. 2023. Comparative genomic analyses of *Lactococcus garvieae* isolated from bovine mastitis in China. *Microbiol Spectr* 8:e0299522.
25. Fonseca M., L.C. Heider, H. Stryhn, J T. McClure, D. Léger, D. Rizzo, L. Warder, S. Dufour, J.-P. Roy, D.F. Kelton, D. Renaud, H.W. Barkema, and J. Sanchez. 2023. Antimicrobial use and its association with the isolation of and antimicrobial resistance in *Campylobacter* spp. recovered from fecal samples from Canadian dairy herds: A cross-sectional study. *Prev Vet Med* 215:105925.
26. Liu, G., Y. Wu, L. Wang, Y. Liu, W. Huang, Y. Li, M. Gao, J.P. Kastelic, H.W. Barkema, Z. Xia, and Y. Jin. 2023. Re-emergence of canine *Leishmania infantum* infection in mountain areas of Beijing. *One Health Advances* 1:11.
27. Bourassa-Blanchette S., **M.M. Biesheuvel**, J.C. Lam, A. Kipp, D. Church, J. Carson, B. Dalton, M.D. Parkins, H.W. Barkema, and D.B. Gregson. 2023. Incidence, susceptibility and outcomes of candidemia in adults living in Calgary, Alberta, Canada (2010 – 2018). *BMC Infect Dis* 23:100.
28. **De Jong E.**, L. Creytens, S. De Vliegher, **K.D. McCubbin**, M. Baptiste, A.A. Leung, D. Speksnijder, S. Dufour, J.R. Middleton, P.L. Ruegg, T.J.G.M. Lam, D.F. Kelton, S. McDougall, S.M. Godden, A. Lago, P.J. Rajala-Schultz, K. Orsel, V. Krömker, J.P. Kastelic, and H.W. Barkema. 2023. Selective treatment of non-severe clinical mastitis does not adversely affect cure, somatic cell count, milk yield, recurrence and culling: a systematic review and meta-analysis. *J Dairy Sci* 106:1267-1286.
29. Vanhoudt A., **C. Jacobs**, M. Caron, H.W. Barkema, M. Nielen, T. van Werven, and K. Orsel. 2023. Broad-spectrum infrared thermography for detection of M2 digital dermatitis lesions on hind feet of standing dairy cattle. *PLoS One* 18:e0280098.
30. **Narayana S.G.**, **E. de Jong**,F.S. Schenkel, P.A.S. Fonseca, T.C.S. Chud, D. Powel, G. Wachoski-Dark, P.E. Ronksley, F. Miglior, K. Orsel, and H.W. Barkema. 2023. Underlying genetic architecture of resistance to mastitis in dairy cattle: A systematic review and gene prioritization analysis of genome-wide association studies. *J Dairy Sci* 106:323-351.
31. **Ida J.A.**,W.M. Wilson, D.V. Nydam, S.C. Gerlach, J.P. Kastelic, E.R. Russell, K.D. McCubbin, C.L. Adams, and H.W. Barkema. 2023. Contextualized understandings of dairy farmers’ antimicrobial use regulation in Alberta, Canada. *J Dairy Sci* 106:547-564.
32. Somanader, D.S., I. Brunskill, M. Perrin, H.W. Barkema, S. Hillier; S. Hindmarch, J.S. Weese, G.D. Wright, and A.M. Morris. 2022. Canada has an opportunity to address antimicrobial resistance through COVID-19 recovery spending. *Lancet Regional Hlth, Americas* 16:100393.
33. **Missaghi B.**, M.W. Malik, **W. Shaukat**, M.A. Ranjha, A. Ikram, and H.W. Barkema. 2022. Associations of the COVID-19 pandemic with the reported incidence of important endemic infectious disease agents and syndromes in Pakistan. *BMC Infect Dis* 22:887.
34. Kurban D., J.-P. Roy, F. Kabera, A. Fréchette, M.M. Um, A. Albaaj, S. Rowe, S. Godden, P.R.F. Adkins, J.R. Middleton, M.-L. Gauthier, G.P. Keefe, T.J. DeVries, D.F. Kelton, P. Moroni, M. Veiga dos Santos, H.W. Barkema, and S. Dufour. 2022. Diagnosing intramammary infection: Meta-analysis and mapping review on frequency and udder health relevance of microorganism species retrieved in bovine milk samples. *Animals* 12:3288.
35. Hasankhani A., A. Bahrami, S. Mackie, S. Maghsoodi, N. Sheybani, F. Safarpoor Dehkordi, F. Rajabi, G. Javanmard, H. Khadem, H.W. Barkema, and M. De Donato. 2022. In-depth systems biological evaluation of bovine alveolar macrophages suggests novel insights into molecular mechanisms underlying *Mycobacterium bovis* infection. *Front Microbiol* 13:1041314.
36. Uyama T., D.L. Renaud, E.I. Morrison, J.T. McClure, S.J. LeBlanc, C.B. Winder, E. de Jong, K.D. McCubbin, H.W. Barkema, S. Dufour, J. Sanchez, L.C. Heider, and D.F. Kelton. 2022. Associations of calf management practices with antimicrobial use in Canadian dairy calves. *J Dairy Sci* 105:9084-9097.
37. Liang B., W. Zhao, B. Han, H.W. Barkema, D. Niu, Y. Liu, J.P. Kastelic, and J. Gao. 2022. Biological and genomic characteristics of two bacteriophages isolated from sewage, using one multidrug-resistant and one non-multidrug-resistant strain of *Klebsiella pneumoniae*. *Front Microbiol* 13:943279.
38. Jelinski D., D.A. Julien, K. Orsel, H.W. Barkema, J.S. Weese, and J.M. Conly. 2022. Collaborative co-design and development of a smartphone application to promote veterinary antimicrobial stewardship. *Can Vet J* 63:1078-1080.
39. Charlier J., H.W. Barkema, P. Becher, P. De Benedictis, I. Hansson, I. Hennig-Pauka, R. La Ragione, L.E. Larsen, E. Madoroba, D. Maes, C.M. Marín, F. Mutinelli, A.J. Nisbet, K. Podgórska, J. Vercruysse, D.J.L. Williams, and R.N. Zadoks. 2022. Disease control tools to secure animal and public health in a densely populated world. *Lancet Plan Health* 6:e812-824.
40. Eshraghisamania R., **A. Mirto**, J. Wang, M. Behr, H.W. Barkema, and J. De Buck. 2022. Identification of essential regions in *Mycobacterium avium* subsp. *paratuberculosis* genome for persistence in dairy calves. *Front Microbiol* 13:994421.
41. Zhao W., M. Xu, H.W. Barkema, X. Xie, Y. Lin, S. Khan, J.P Kastelic, D. Wang, Z. Deng, and B. Han. 2022. *Prototheca bovis* induces autophagy in bovine mammary epithelial cells via the HIF-1α and AMPKα/ULK1 pathway. *Front Immunol* 13:934819.
42. **McCubbin, K.D.**, **E. de Jong**, T.J.G.M. Lam, D.F. Kelton, J.R. Middleton, S. McDougall, S. de Vliegher, S. Godden, P.J. Rajala-Schultz, S. Rowe, D.C. Speksnijder, J.P. Kastelic, and H.W. Barkema. 2022. Invited review: Selective use of antimicrobials in dairy cattle at drying off. *J Dairy Sci* 105:7161-7189.
43. Reyhan V.D., M. Sadeghi, S.R. Miraei-Ashtiani, F. Ghafouri, J.P. Kastelic, and H.W. Barkema. 2022. Integrated transcriptome and regulatory network analyses identify candidate genes and pathways modulating ewe fertility. *Gene Rep* 28:101659.
44. Samadi Kochaksaraei G., A. Aziz Shaheen, C.H. Seow, H.W Barkema, and C.S. Coffin. 2022. Tenofovir disoproxil fumarate therapy to prevent Hepatitis B Virus vertical transmission–A review of maternal and infant outcomes. *Liver Int* 42:1712-1730.
45. M. Sadeghi, A. Bahrami, A. Hasankhani, H. Kioumarsi, R. Nouralizadeh, S.A. Abdulkareem, F. Ghafouri, and H.W. Barkema. 2022. lncRNA-miRNA-mRNA ceRNA network involved in sheep prolificacy: An integrated approach. *Genes* 13:1295.
46. Rojas-Poncea G., D. Sauvageau,R. Zemp, H.W. Barkema, and S. Evoy. 2022. Use of untargeted magnetic beads to capture *Mycobacterium smegmatis* and *Mycobacterium avium paratuberculosis* prior detection by mycobacteriophage D29 and real-time-PCR. *J Microbiol Meth* 197:106490.
47. **Smid A.-M.C.**, P.H.J. Ingberg, S. de Jong, S. Sinclair, M.A.G. von Keyserlingk, D.M. Weary, and H.W. Barkema. 2022. Western Canadian dairy farmer perspectives on the provision of outdoor access for dairy cows and on the perceptions of other stakeholders. *J Dairy Sci* 105:4461-4473.
48. Zhao W., Z. Deng, H.W. Barkema, S. Xu, J. Gao, G. Liu, M. Zhou, Y. Lin, J.P. Kastelic, and B. Han. 2022. Nrf2 and NF-κB/NLRP3 inflammasome pathways are involved in *Prototheca bovis* infections of mouse mammary gland tissue and mammary epithelial cells. *Free Rad Biol Med* 184:148-157.
49. FranceA.E., S. Dufour, D.F. Kelton, H.W. Barkema, D. Kurban, and T.J. DeVries. 2022. Effect of dry-off management on milking behavior, milk yield, and somatic cell count of dairy cows milked in automatic milking systems. *J Dairy Sci* 105:3544-3558.
50. **Naqvi S.A.,** M.T.M. King, T.J. DeVries, H.W. Barkema, and R. Deardon. 2022. Data considerations for developing deep learning models for dairy applications: A simulation study on mastitis detection. *Comput Electron Agric* 196:106895.
51. Rasmussen P., H.W. Barkema, E. Beaulieu, S. Mason, and D.C. Hall. 2022. Economic premiums associated with *Mycobacterium avium* subspecies *paratuberculosis*-negative replacement purchases in major dairy producing regions. *J Dairy Sci* 105:3234-3247.
52. Kariyawasam R.M., D.A. Julien, D.C. Jelinski, S.L. Larose, E. Rennert-May, J.M. Conly, T.C. Dingle, J.Z. Chen, G.J. Tyrrell, P.E. Ronksley, and H.W. Barkema. 2022. Antimicrobial resistance (AMR) in COVID-19 patients: A systematic review and meta-analysis (November 2019 – June 2021). *Antimicrob Resist Infect Contr* 11:45.
53. Singh B.B., B. Devleesschauwer, M.S. Khatkar, **M. Lowerison**, B. Singh, N.K. Dhand,and H.W. Barkema. 2022. Disability-adjusted life years (DALYs) due to the direct health impact of COVID-19 in India, 2020. *Sci Rep* 12:2454.
54. **McCubbin K.D.**, H.W. Barkema, A. Babujee, J. Forseille, K. Naum, P. Buote, D. Dalton, S.L. Checkley, K. Lehman, T. Morris, K. Smilski, W.L. Wilkins, R.M. Anholt, S. Larose, L.M. Saxinger, D. Blue, and S.J.G. Otto. 2022. One health and antimicrobial stewardship: Where to go from here? *Can Vet J* 63:198-200.
55. Raman M., C. Ma, L.M. Taylor, L.A. Dieleman, G. Gkoutos, J.A. Vallance, K.D. McCoy, I.A. Lewis, H. Jijon, D.M. McKay, D. Mutch, H.W. Barkema, D. Gibson, M. Rauch, and S. Ghosh. 2022. A Crohn’s disease therapeutic dietary intervention (CD-TDI): study protocol for a randomised controlled trial. *BMJ Open Gastroenterol* 9:e000841.
56. Uyama T., D.F. Kelton, E.I. Morrison, **E. de Jong**, **K.D. McCubbin**, H.W. Barkema, S. Dufour, J. Sanchez,L.C. Heider, S.J. LeBlanc, C.B. Winder, J T. McClure, and D.L. Renaud. 2022. Cross-sectional study of antimicrobial use and treatment decision for pre-weaned Canadian dairy calves. *JDS Commun* 3:72-77.
57. Fonseca M., L.C. Heider, D. Leger, J.T. McClure, D. Rizzo, S. Dufour, D.F. Kelton, D.L. Renaud, H.W. Barkema, and J. Sanchez. 2022. Canadian Dairy Network for Antimicrobial Stewardship and Resistance (CaDNetASR): An on-farm surveillance system. *Front Vet Sci* 8:799622.
58. Naserkheil M., F. Ghafouri, S. Zakizadeh, N. Pirany, Z. Manzari, S. Ghorbani, M.H. Banabazi, M.R. Bakhtiarizadeh, M.A. Huq, M.N. Park, H.W. Barkema, D. Lee, and K.‑S. Min. 2022. Multi-omics integration and network analysis reveal potential hub genes and genetic mechanisms regulating bovine mastitis. *Curr Issues Mol Biol* 44:309-328.
59. **Naqvi S.A.**, M.T.M. King, R.D. Matson, T.J. De Vries, R. Deardon, and H.W. Barkema. 2022. Mastitis detection with recurrent neural networks in farms using automated milking systems. *Comput Electron Agric*. 192:106618.
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1. Uyama T., D.F. Kelton, E.I. Morrison, **E. de Jong**, **K.D. McCubbin**, H.W. Barkema, S. Dufour, M. Fonseca, J T. McClure, J. Sanchez, L.C. Heider, and D.L. Renaud. 2024. Associations among antimicrobial use, calf management practices, and antimicrobial resistance in *Escherichia coli* from a pooled fecal sample in calves on Canadian dairy farms: a cross-sectional study. In press (*J Dairy Sci*).
2. Rasmussen P., H.W. Barkema, P.P. Osei, J. Taylor, A.P. Shaw, B. Conrady, G. Chaters, V. Muñoz, D.C. Hall, O.O. Apenteng, J. Rushton, and P.R. Torgerson. 2024. Global losses due to dairy cattle diseases: A comorbidity-adjusted economic analysis. In press (*J Dairy Sci*).
3. Bourassa-Blanchette S., **M.M. Biesheuvel**, J.C. Lam, A. Kipp, D. Church, J. Carson, B. Dalton, M.D. Parkins, H.W. Barkema, and D.B. Gregson. 2024. Candidemia treatment is improved by infectious diseases consultation: A population-based cohort study. In press (*JAMMI*).
4. **ShaukatW.**, **E. de Jong**, **K.D. McCubbin**, **M. Biesheuvel**, F.J.U.M. van der Meer, J. De Buck, G. Lhermie, D.C. Hall, K.N. Kalbfleisch, J.P. Kastelic, K. Orsel, and H.W. Barkema. 2024. Herd-level prevalence of bovine leukemia virus, *Salmonella* Dublin and *Neospora caninum* in Alberta, Canada, dairy herds using ELISA on bulk tank milk samples. In press (*J Dairy Sci*).
5. Samadi Kochaksaraei G., C.H. Seow, H.W Barkema, and C.S. Coffin, F. Yan, and A. Aziz Shaheen. The epidemiology and natural history of chronic hepatitis B in the Canadian province of Alberta from 2012 to 2021: A population-based study. In press (*J Viral* *Hepat*).
6. Cheang I.H.I., H.A. Lardner, O.O. Oyedeji, K. Rochon, H.C. Block, M. Asai-Coakwell, N.E. Erickson, H.W. Barkema, and O.N. Durunna. The effect of garlic-infused supplements on beef cattle mineral supplement intake, body performance and feeding behavior. Accepted for publication (*Transl Anim Sci*).
7. **Martins L.**, K. Orsel, R. Eshraghisamani, J.M. Hernández-Agudelo, A.C. Pereira, **W. Shaukat**, A.P. Koets, J.P. Bannantine, C. Ritter, D.F. Kelton, R.J. Whittington, M.F. Weber, A. Facciuolo, N. Dhand, K. Donat, S. Eisenberg, M.A. Salgado, J.P. Kastelic, J. De Buck, and H.W. Barkema*.* Invited Review: Improved control of Johne’s disease in dairy cattle through advancements in diagnostics, testing and management of young stock. Accepted for publication (*J Dairy Sci*).
8. YangJ., N. Wu, Y. Xiong, D.B. Nobrega, H.W. Barkema, B. Han, J. Cheng, and J. Gao. Differences in milk microbiota between healthy cows and cows with recurring *Klebsiella* mastitis. Accepted for publication (*PLoS ONE*).
9. Ghafouri F., V. Dehghanian Reyhan, M. Sadeghi, S. Reza Miraei-Ashtiani, J.P. Kastelic, H.W. Barkema, and M. Shirali. Integrated analysis of transcriptome profiles and lncRNA–miRNA–mRNA ceRNA regulatory network to identify biological functional effects of genes and pathways associated with Johne's disease in dairy cattle. Accepted for publication (*Non-Coding RNA*).
10. **De Jong E.**, I. van der Velden, **A.-M.C. Smid**, **J.A. Ida**, K.K. Reyher, D.F. Kelton, and H.W. Barkema. Dairy farmers' considerations for antimicrobial treatment of clinical mastitis. Accepted for publication (*Front Vet Sci*).
11. Wang Y., S. Meng, H. Bahetijiang, H. Li, T. Wang, T. Assabayev, H.W. Barkema, J.P. Kastelic, Z. Deng, and B. Han. Phenotypic and genotypic characterization of ST103 Serotype Ia *Streptococcus agalactiae* isolated from bovine mastitis in China. Accepted for publication (*Heliyon*).

**Publications Submitted:**

1. Das S.K., K. Ranabhat, S. Dulal, B. Sapkota, S. Shrestha, K. Paudel, B. Aryal, B. Kalauni, A. Bhattarai, and H.W. Barkema. Predictors of in-hospital mortality in patients with COVID-19: A retrospective study from a tertiary care hospital in Nepal. Submitted for publication (*Sci Rep*).
2. **Whelan L.**, J. Leal, M. Leslie, H.W. Barkema, W. Ocampo, and E. Rennert-May. Clinic barriers and facilitators to the implementation of a decolonization strategy for *Staphylococcus aureus* in hip and knee arthroplasty: A qualitative study. Submitted for publication (*Health Care Manag Sci*).
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6. Wang Y., T. Wang, J. Xiong, J. Gao, H.W. Barkema, M. Tuerdi, M. Xu, Z. Deng, J.P. Kastelic, and B. Han. Transcriptome and proteome analysis of the immune responses of bovine mammary gland: Exploring immunomodulatory target genes for acute clinical mastitis caused by *Escherichia coli*. Submitted for publication (*Heliyon*).
7. Samadi Kochaksaraei G., F. Yan, C.H. Seow, H.W Barkema, and C.S. Coffin, and A. Aziz Shaheen. The epidemiology of chronic hepatitis B among women of childbearing age and their linkage to care during pregnancy in the Canadian province of Alberta from 2012 to 2021. Submitted for publication (*Hepatol Comm*).
8. Olson M.A., C. Cullimore, W.D. Hutchison, A. Grimsrud, D. Nobrega, J. De Buck, H.W. Barkema, E. Wilson, B.E. Pickett, and D.L. Erickson. Genes associated with fitness and disease severity in the pan-genome of mastitis-associated *Escherichia coli*. Submitted for publication (*mSystems*).
9. **Biesheuvel M.M.,** K. Kalbfleisch, J. De Buck, E. van Engelen, P.M. Penterman, G. van Schaik, P. Moroni, G. Gioia, D. Nobrega, and H.W. Barkema. Impact of carbon dioxide concentrations on laboratory sensitivity of *Mycoplasma* species isolated from dairy cows. Submitted for publication (*Microbiol Spectr*).
10. **Caddey B.**, S. Fisher, H.W. Barkema, and D. Nobrega. Transmission of antimicrobial-resistant organisms between humans and companion animals. Submitted for publication (*Clin Microbiol Rev*).
11. **Caddey B.**, **W. Shaukat**, K.L. Tang, and H.W. Barkema. Vancomycin-resistant *Enterococcus* prevalence and its association along the food chain: A systematic review and meta-analysis. Submitted for publication (*BMJ Global Health*).

**Publications in Preparation:**

1. Orsel K., G.T. Barkema, **L. Solano**, R. Keesman, and H.W. Barkema. Estimating the impact of footbathing on digital dermatitis M-stage dynamics. In preparation for submission (*Prev Vet Med*).
2. Keesman R., G.T. Barkema, **L. Solano**, H.W. Barkema, and K. Orsel. Applying the continuous-time Markov chain model on irregular-time series. In preparation for submission (*J Comput Sci*).
3. Xiong Y., J. Yang, H.W. Barkema, J.P. Kastelic, D. Nobrega, X. Li, X. Tong, Z. Fan, and J. Gao. Opinions of managers of large Chinese dairy farms on selective treatment of clinical mastitis and dry cow therapy. In preparation for submission (*Lancet Planet Health*).
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5. **McCubbin K.D.**, H.W. Barkema, J.M. Conly, D. Currie, R.M. Anholt, and R. Geransar. One Health antimicrobial resistance framework for action development: Policy development with a Delphi method. In preparation for submission (*Front Public Health*).
6. Tamang M.D., J. Bae, H.W. Barkema, and B. Jeon. Synergistic inhibition of methicillin-resistant *Staphylococcus* *aureus* (MRSA) with β-lactams and octyl gallate. In preparation for submission (*Intern J Antimicrob Agents*).
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12. Burnett T.A., R. Westin, E. Vasseur, D. Pellerin, D.B. Haley, A.M. de Passillé, H.W. Barkema, J. Rushen, and R.L.A. Cerri. Reproductive measures associated with cow injury, housing and management on Canadian free stall dairy farms. In preparation for submission (*J Dairy Sci*).
13. Walpole C.E., S. Naushad, L.A.Z. Condas, H.W. Barkema, J. De Buck, J.E. Hill, J.R. Campbell, A.P. White, and C.D. Luby. Identification of non-*aureus* staphylococci using different target genes (*rpoB* or *cpn60*) and databases (GenBank or Chaperonin). In preparation for submission (*J Dairy Sci*).
14. Fehr K.B., H. Derakhshani, S. Sepehri, D. Francoz, J. De Buck, H. W. Barkema, J. C. Plaizier, and E. Khafipour. Influence of environmental bacterial communities, farm-systems and seasons on bovine udder bacterial communities and udder inflammation. In preparation for submission (*Microbiome*).
15. Morabito E., H.W. Barkema, **C. Ritter**, E.A. Pajor, D. Pellerin, and K. Orsel. Understanding the potential impact of cow comfort assessments on opinions and behaviors of dairy producers towards cow comfort. In preparation for submission (*J Dairy Sci*).
16. Remnant J.G., M.A.G. von Keyserlingk, J.P. Kastelic, T.J.G.M. Lam, C. Luby, J.-P. Roy, G.P. Keefe, D.F. Kelton, and H.W. Barkema. Changes in dairy veterinary practice resulting from changes in the dairy industry. In preparation for submission (*J Dairy Sci*).
17. **Liu G.**, **S.A. Naqvi**, J. De Buck, **V. Saini**, H.W. Barkema. The impact of intramammary infection at calving with coagulase-negative staphylococci on udder health in the lactation. In preparation for submission (*J Dairy Sci*).
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19. **McCubbin K.D.**, J. Sanchez, D.F. Kelton, E. Spackman, **S.A. Naqvi**, S. Dufour, and H.W. Barkema. A decision tree analysis of selective and blanket dry cow therapy. In preparation for submission (*J Dairy Sci*).
20. **Narayana S.G.**, H.W. Barkema, T.C.S. Chud, H.R. de Oliveira, P.A.S. Fonseca, G. de Oliveira, A. Butty, C. Baes, F. Malchiodi, and F.S. Schenkel.Association between copy number variants and somatic cell score in Holstein cows. In preparation for submission (*J Dairy Sci*).
21. **Narayana S.G.**, F.S. Schenkel, H.R. de Oliveira, J. Hidalgo, G.A. Oliveira Jr, F. Miglior, E. Massender, and H.W. Barkema. Genomic predictions of mastitis-related traits in early lactation using single-step genomic approach.In preparation for submission (*J Dairy Sci*).
22. Yang X., J. Zhi, H. Yang, H.W. Barkema, and Q. Dong. Biomarkers of oxidative stress in clinical disease in transition dairy cows. In preparation for submission (*J Dairy Sci*).
23. **Smid A.-M.C.**, M. Jarbeau, V. Boone, and H.W. Barkema. Understanding Canadian dairy farmers perspectives on outdoor access for dairy cows using an online questionnaire. In preparation for submission (*J Dairy Sci*).
24. Wang A., J. Han, H.W. Barkema, T. Wang, S. Meng, Z. Zhu, H. Li, D.B. Nobrega,W. Qu, G. Liu, S. Qin, B. Han, J.P. Kastelic, and J. Gao. Prevalence of pathogens isolated from bovine mastitis milk on large Chinese dairy farms from 2017 to 2023. In preparation for submission (*J Dairy Sci*).
25. **De Jong E.**, **J.A. Ida**, **A.M.C. Smid**, K.K. Reyher, D.F. Kelton, C. Ritter, I. van der Velden, and H.W. Barkema. Cultivating change: A study of Western Canadian dairy farmers' perspectives on mastitis-related antimicrobial stewardship and strategies for milk culturing adoption. In preparation for submission (*J Dairy Sci*).

**Book chapters:**

1. Imada J., D.F. Kelton, and H.W. Barkema. 2020. Epidemiology, global prevalence, and economics of infection. Chapter 1 in *Paratuberculosis: organism, disease, control*. Eds. M.A Behr, K. Stevenson, and V. Kapur. 2nd Ed. CAB International. ISBN 9781789243420, pp. 1-13.
2. Lam T.J.G.M., H.W. Barkema, H. Knijn, S. Piepers, and S. de Vliegher. 2017. The herd health approach of mastitis (in Dutch). Chapter 1 in Handbook Udder Health Cattle. Eds. T.J.G.M. Lam and S. de Vliegher, ISBN13 9789082232127, pp. 3-13.
3. Bradley A., H.W. Barkema,A. Biggs, M. Green, and T.J.G.M. Lam.2013. Control of mastitis and enhancement of milk quality. Chapter 5 in Dairy Herd Health. Ed. M. Green. CAB International. ISBN 9781845939977, pp. 117-168.
4. Barkema H.W., J.W. Hesselink, **S.L.B. McKenna**, G. Benedictus, and H. Groenendaal. 2010. Global prevalence and economics of infection with *Mycobacterium avium* subsp. *paratuberculosis* in ruminants*.* Chapter 2 in *Paratuberculosis: organism, disease, control*. Eds. M.A Behr and D.M. Collins. CAB International. ISBN 9781845936136, pp. 10-21.
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>500 abstracts in proceedings of scientific meetings.

**Publications in Non-refereed Journals:**

1. ACER group, E. de Jong, and H.W. Barkema. 2022. Should we treat clinical mastitis selectively? Progressive Dairy. Nov. 2, 2022. <https://www.agproud.com/articles/56334-should-we-treat-clinical-mastitis-selectively>
2. Barkema H.W., and P. Griebel. 2020. Johne’s disease – new advances, new era. Dairy Global. Special edition “Pathogens and prevention” May 2020:45-46.
3. van Huyssteen M., H.W. Barkema, S. Mason, and K. Orsel. 2019. Lameness in dairy cattle. Western Canadian Association of Bovine Practitioners Newsletter 26(4):18-19.
4. Nobrega D.B., and H.W. Barkema. 2019. Antimicrobial treatment of mastitis during lactation – a systematic review. Western Canadian Association of Bovine Practitioners Newsletter 26 (1):14-19.
5. Nobrega D.B., H.W. Barkema, and D.F. Kelton. 2018. Is selective dry cow treatment in our future? 2017 DHI Western Progress Report:10.
6. Naqvi S.A., and H.W. Barkema. 2018. Heifer mastitis and udder health. Western Canadian Association of Bovine Practitioners Newsletter 25 (2):18-19.
7. Ritter C., and H.W. Barkema. 2018. Insights in dairy farmers’ management decisions. Insights (Alberta Farm Animal Care), February 2018.
8. Nobrega D.B., and H.W. Barkema. 2018. Selective dry cow treatment and antimicrobial resistance. Insights (Alberta Farm Animal Care), February 2018.
9. Nobrega D.B., and H.W. Barkema. 2018. Tracking empty drug containers on-farm detects more antibiotic treatments. Progressive Dairyman, January 18, 2018.
10. Solano L., C. Jacobs, E. Morabito, J. Davis, K. Orsel, H.W. Barkema, S. Mason, E. Pajor, and G.A. Atkins. 2016. Foot lesions in dairy cattle in Alberta. Western Canadian Association of Bovine Practitioners Newsletter 23 (2):18.
11. Bras A., H.W. Barkema, C.S. Ribble, J. Kastelic, and M.C. Windeyer. 2015. Prevalence, risk factors, and clinical expression of *Mycoplasma bovis* disease in farmed bison (*Bison bison*) herds in Western Canada. Western Canadian Association of Bovine Practitioners Newsletter 22(3):12-13.
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13. Wolf R., K. Orsel, J. De Buck, and H.W. Barkema. 2014. High percentage of Alberta and Saskatchewan dairy farms are infected with *Mycobacterium avium* subsp. *paratuberculosis*, the cause of Johne’s disease. Dairy Research and Extension Consortium of Alberta dairy research summary, July 2014.
14. Barkema H.W., J. De Buck, P. Ajitkumar, L. Condas, and H. Poirier. 2013. Des progrès pour percer le mystère des staphyloques à coagulase négative! *Le producteur de lait québécois* June 2013:42-44.
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16. Barkema H.W., and R.G.M. Olde Riekerink. 2012. Udder health in Canadian dairy herds. *Canadian Jersey Breeder Magazine* June-July 2012:38-39.
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19. Heinrich C., S. Ghosh, K. Sharkey, and H.W. Barkema. 2011. Toward patient-focused research: integrated KT in action. *Alberta Innovates – Health Solutions KT Casebook* 2:21-25.
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**15.** **Invited Presentations** (since start position UPEI at August, 2001)

May 7, 2024 One Health at UCalgary and AMR – OH Consortium. 2024 Canada First Research Excellent Fund (CBREF) Symposium, Calgary, AB, Canada

April 25, 2024 Prevention of udder infections in and around the dry period. 10th Boehringer Ingelheim International Dairy Health Forum, Chengdu, China

April 22, 2024 Udder health on large dairy farms. Youyuan dairy group, Yinchuan, China

February 23, 2024 Antimicrobial resistance: Why veterinarians and animal owners should be concerned. One step ahead of mastitis seminars, HIPRA (delivered as a video presentation)

February 13, 14, and Managing mastitis on Alberta dairy farms. Alberta Milk Producer

15, 2024 Meetings. Lethbridge, Lacomber, and Leduc, AB, Canada

December 1, 2023 Importancia del uso selectivo de antibióticos: secado y mastitis clínica [Importance of selective antibiotic therapy: drying off and clinical mastitis]. Colun Dairy Cooperative, Valdivia, Chile

November 30, 2023 Control de la paratuberculosis en las granjas lecheras [Control of Johne’s disease in dairy herds]. Colun Dairy Cooperative, Valdivia, Chile

November 27, 2023 Mi viaje loco [My crazy career]. Universidad Austral de Chile, Valdivia, Chile

October 26, 2023 Importance of selective antibiotic use in dairy herds: Drying off and clinical mastitis. Hebei Agricultural University, Baoding, Hebei, China

October 23, 2023 Control of paratuberculosis in the dairy industry with a particular focus on inclusion of calves in the control. Sk-xing Group, Hohhot, Inner Mongolia, China

October 20, 2023 Addressing antimicrobial resistance in humans and animals: A One Health Perspective. Faculty of Veterinary Medicine, China Agriculture University, Beijing, China

October 11, 2023 The AMR – One Health Consortium: A Pan-Alberta Collaborative Platform. One Health AMR Symposium: A Look at the Current Stage of Knowledge, Gaps, and Future Research, Hamilton, ON, Canada

October 2, 2023 Antimicrobial stewardship: It can only be accomplished if we develop targets and work together. University of Guelph AMR Symposium, Guelph, ON, Canada

September 19, 2023 Importance of selective antibiotic use in Canadian dairy herds: Drying off and clinical mastitis. Faculty of Veterinary Medicine, University of Montreal, Saint-Hyacinthe, QC, Canada

June 29, 2023 Overview research in NSERC Industrial Research Chair in Infectious Diseases of Dairy Cattle. UK – Canada dairy researchers meeting, Ottawa, ON, Canada

April 26, 2023 Tackling AMR in humans and animals. Association of Veterinary Medical Students Annual Public Lecture, Abuja, Nigeria (delivered as a video presentation)

April 18, 2023 Tackling AMR in humans and animals. 2023 McGill AMR Seminar, Montreal, QC, Canada

March 9, 2023 Importance of selective antibiotic use: Drying off and clinical mastitis. 2023 Western Canadian Dairy Seminar, Red Deer, AB, Canada

January 27, 2023 Animal disease and antimicrobial resistance. The 13th Canadian Agricultural Economics Society policy conference, Ottawa, ON, Canada

November 29 - Dairy Farmers of Canada Showcase. Presentation of Research in my

December 1, 2022 Industrial Research Chair in Infectious Diseases of Dairy Cattle, Lethbridge, Lecombe and Leduc, AB, Canada

## November 19, 2022 One-Health perspective: Tackling antimicrobial resistance in humans and animals. International Veterinary Students Association, Abuja, Nigeria (delivered as a video presentation).

November 18, 2022 Antimicrobial Stewardship: Why is a One Health approach essential. Techinvention Lifecare, Mumbai, India (delivered as a video presentation).

## October 31, 2022 Progress in mastitis prevention and control in dairy herds. Advanced Cattle Production Medicine (ACPM) Project, Hoards Dairyman and China Agricultural University, China (delivered as a video presentation).

## September 4, 2022 Responsible use of antimicrobials: where are we and where are we going to? Institutional Development Plan (IDP), SKUAST Jammu, and Association of Mastitis, India (delivered as a video presentation).

## September 3, 2022 Responsible use of antimicrobials: where are we and where are we going to? Advanced Cattle Production Medicine (ACPM) Project, Hoards Dairyman and China Agricultural University, China (delivered as a video presentation).

## June 17, 2022 Lessons learned from Johne’s disease programs worldwide. Johne’s disease Industry Day, Animal Health Ireland, Haas, Ireland.

## June 13, 2022 Lessons learned from Johne’s disease programs worldwide. 15th International Association for Paratuberculosis Colloquium, Dublin, Ireland.

June 12, 2022 An update on Johne’s disease control and research in Canada. 8th ParaTB Forum, Dublin, Ireland.

March 24, 2022 Antimicrobial use and resistance in the dairy industry. Dairy Research and Extension Consortium of Alberta - Coffee Talk - Animal Health (delivered as a video presentation).

February 6, 2022 Antimicrobial resistance: Why veterinarians and animal owners should be concerned. International Veterinary Students Association Standing Committee on One Health (delivered as a video presentation).

October 6, 2021 One Health: It’s all about relationships! Seminar in the 2021 Animal Health Week. Canadian Veterinary Medical Association (delivered as a video presentation).

July 23, 2021 One Health: Exploring next steps in Canada. Canadian Veterinary Medical Association annual convention (delivered as a video presentation).

July 23, 2021 Antimicrobial resistance: Why veterinarians and animal owners should be concerned. Canadian Veterinary Medical Association annual convention (delivered as a video presentation).

June 9, 2021 Effect in restriction in the use of antibiotics in food animals on antimicrobial resistance in food animals and humans. Canadian Animal Health Laboratorians Network annual meeting (delivered as a video presentation).

May 17, 2021 Responsible use of antimicrobials: where are we and where are we going to? Polo di Formazione di Maccarese, Italy (delivered as a video presentation).

February 2, 2021 Antimicrobial resistance – A One Health problem. Science & Industry Advisory Committee of Genome Canada (delivered as a video presentation).

December 4, 2020 Mastitis prevention and control in dairy herds. China Agricultural University, Beijing, China (delivered as a video presentation).

October 28, 2020 Responsible use of antimicrobials: where are we and where are we going to? University of São Paulo. Internet presentation because the two presentations in Uberlandia and Ponta Grossa, Brazil, had to be cancelled because of COVID-19.

January 30, 2020 Udder health situation in Canada. 59th annual Meeting of the National Mastitis Council, Orlando, FL, USA.

January 27, 2020 Mastitis prevention and control in dairy herds. AGM of the Vancouver Island Dairy Producers 2020, Nanaimo, BC, Canada.

January 16, 2020 *Streptococcus uberis* mastitis. 29th annual of the Western Canadian Association of Bovine Practitioners Conference, Calgary, AB, Canada.

December 17, 2019 Effect in restriction in the use of antibiotics in food animals on antimicrobial resistance in food animals and humans. Guru Angad Dev Veterinary and Animal Science University, Ludhiana, Punjab, India (delivered by Skype).

December 3, 2019 Effect in restriction in the use of antibiotics in food animals on antimicrobial resistance in food animals and humans. Chinese Academy of Agricultural Sciences, Beijing, China.

October 3, 2019 Antimicrobial use and resistance in dairy cows - recent research results and some of the studies underway. Biosecurity and Food safety technical committees of Dairy Farmers of Canada, Winnipeg, MB, Canada.

June 10, 2019 Effect in restriction in the use of antibiotics in food animals on antimicrobial resistance in food animals and humans. 69th Annual Conference of the Canadian Society of Microbiologists, Sherbrooke, QC, Canada.

February 11-14, 2019 Disease control on dairy farms – Makes it sense economically? 2019 Dairy Research and Extension Consortium of Alberta Workshops. Lethbridge, Lacombe, Leduc and Westlock, AB, Canada.

February 1, 2019 Effect in restriction in the use of antibiotics in food animals on antimicrobial resistance in food animals and humans. CenCan Conference 2019, Winnipeg, MN, Canada.

February 1, 2019 Recent developments in Johne’s disease control on dairy farms - Are we ready to start eradicating this disease? CenCan Conference 2019, Winnipeg, MN, Canada.

February 2, 2019 Mastitis prevention and control in dairy herds. CenCan Conference 2019, Winnipeg, MN, Canada.

February 2, 2019 Changes in the dairy industry affecting dairy veterinary practice. CenCan Conference 2019, Winnipeg, MN, Canada.

November 29, 2018 Use of antibiotics in production animals and antimicrobial resistance in production animals and humans, and what we can do in the Canadian dairy industry. BC Dairy Industry Conference 2018, Vancouver, Canada.

July 6, 2018 Effect of restriction of antibiotics in production animals on antibiotic resistance in food animals and humans. 12th World Conference on Animal Production, Vancouver, Canada.

June 6, 2018 Lessons learned from Canadian Johne’s disease programs. 6th Paratuberculosis Forum. Playa del Carmen, Mexico.

March 9, 2018 Lessons learned from Canadian Johne’s disease programs. 36th Western Canadian Dairy Seminar. Red Deer, AB, Canada.

March 6, 2018 Milk quality workshop. 36th Western Canadian Dairy Seminar. Red Deer, AB, Canada.

February 9, 2018 Use of antibiotics in production animals and antimicrobial resistance in production animals and humans, and what we can do in the Canadian dairy industry. Dairy Research Symposium 2018, Dairy Farmers of Canada, Ottawa, Canada.

November 22, 2017 Use of antibiotics in production animals and antimicrobial resistance in production animals and humans, and what we can do in the Canadian dairy industry. AGM Alberta Milk, Edmonton, Canada.

September 30, 2017 Effect of restriction in the use of antibiotics in food animals on antibiotic resistance in food animals and humans. China Agricultural University, Beijing, China.

September 26, 2017 Effect of restriction in the use of antibiotics in food animals on antibiotic resistance in food animals and humans. Shandong Agricultural University, Tai’an, Shandong province, China.

June 22, 2017 Effect of restriction in the use of antibiotics in food animals on antibiotic resistance in food animals and humans. UCVM annual beef conference, Calgary, AB, Canada.

June 6, 2017 Effect of restriction in the use of antibiotics in food animals on antibiotic resistance in food animals and humans – A systematic review and meta-analysis. CAVEPM conference, Calgary, AB, Canada.

April 10, 2017 Use of antibiotics in food animals and antibiotic resistance in food animals and humans. University College Dublin, Dublin, Ireland.

February 16, 2017 Use of antibiotics in food animals and antibiotic resistance in food animals and humans. Alberta Milk Delegate Workshop, Edmonton, AB, Canada.

February 13, 2017 Effect of restriction in the use of antibiotics in food animals on antibiotic resistance in food animals and humans – A systematic review and meta-analysis. AMR Workshop, Genome Alberta and University of Calgary, Calgary, AB, Canada.

February 7, 2017 Effect of restriction in the use of antibiotics in food animals on antibiotic resistance in food animals and humans. The 2017 Annual T.K. Cheung Lecture in Animal Science. Faculty of Agriculture, University of Manitoba, Winnipeg, MN, Canada.

January 21, 2017 Changes in the dairy industry affecting cattle health and welfare. Alberta Farm Animal Care, Red Deer, AB, Canada.

August 29, 2016 Challenges, new developments, techniques and programs in cow herd health. 67th Annual Meeting of the European Association of Animal Production, Belfast, Northern Ireland.

June 8, 2016 Changes in the dairy industry affecting cattle health and welfare. University of Guelph, Guelph, ON, Canada.

March 9, 2016 Changes in the dairy industry affecting cattle health and welfare. 34th

Western Canadian Dairy Seminar, Red Deer, AB, Canada.

March 7, 2016 Emerging infectious diseases: constantly changing, consistently

challenging*. Mini-Medical School*. Snyder Institute for Chronic Diseases.

Calgary, AB, Canada.

February 5, 2016 Infectious diseases in dairy cattle – antimicrobials and the human connection. Innovate3: Promoting progress to the profit of the Canadian dairy industry, Ottawa, ON, Canada.

September 25, 2015 Bottlenecks in the prevention and control of *Mycobacterium avium* subsp. *paratuberculosis* infection. EU Discontools. Brussels, Belgium.

September 23, 2015 International development in the dairy industry affecting udder health. Masterclass Udder Health (GD and DeLaval), Steenwijk, The Netherlands.

November 20, 2014 Changes in the dairy industry affecting dairy veterinary practice. Colloque sur la santé des troupeaux laitiers, 10th edition. Drummondville, QC, Canada.

August 11-14, 2014 Mastitis prevention. Seven lectures in England, UK, for DairyCo.

June 24, 2014 Keynote presentation: Bottlenecks in the prevention and control of *Mycobacterium avium* subsp. *paratuberculosis* infection. 12th International Colloquium on Paratuberculosis. Parma, Italy.

April 23, 2014 Biosecurity on Alberta dairy farms. Animal Disease Risk Assessment and Surveillance Symposium. Calgary, AB, Canada.

April 10, 2014 The future of dairy veterinary practice. Ontario Association of Bovine Practitioners and Ontario Agri-Business Association Spring Meeting. Guelph, ON, Canada.

March 11, 2014 Mastitis prevention workshop. Western Canadian Dairy Seminar. Red Deer, AB, Canada.

February 4-5, 2014 Consumer Concerns about food production: do we need to be worried about how milk is produced? Nutrition File Seminar, Food integrity: building consumer trust in our food system. Edmonton and Calgary, AB, Canada.

January 20, 2014 The Alberta Inflammatory Bowel Disease Consortium – a logical collaboration between human and veterinary medical researchers. Working together for better health; Symposium celebrating research collaborations between the faculties of Veterinary Medicine and Medicine. University of Calgary, AB, Canada.

November 29, 2013 Update on Johne’s disease research in Calgary. Continuing Education for Belgian Veterinary Practitioners. Ghent University, Belgium.

November 26, 2013 Prevention and treatment of mastitis: the role of the veterinary practitioner, and an update on Canadian research. Udder forum, Kortrijk, Belgium

July 25, 2013 Transmission pattern profiling of *Mycobacterium avium* subsp. *paratuberculosis* between and within Canadian dairy herds by fast and discriminating strain typing. *Dairy Research for a Healthy World Symposium*, Toronto, ON, Canada

March 14, 2013 Results of research in the Canadian Bovine Mastitis and Milk Quality Research Network. *Webinar for directors of the provincial and national Canadian dairy organizations*.

January 30, 2013 Managing infectious disease in dairy herds. *Central Manitoba Holstein Dairy Club annual conference*, Carman, MB, Canada.

November 30, 2012 The mastitis situation in Canada. *TOPVAC vaccine launch*, Edmonton, AB, Canada.

October 3, 2012 The UofC Faculty of Veterinary Medicine: Born out of the BSE crisis. *Gyro Club Calgary Central*, Calgary, AB, Canada.

September 26, 2012 Managing infectious disease in dairy herds. *17th Annual General Meeting of Canadian Dairy Network and the 2012 Dairy Cattle Improvement Industry Forum*, West Kelowna, BC, Canada

September 25, 2012 Innovation, discovery and improving health outcomes – The Alberta Inflammatory Bowel Disease Consortium. *Research Network Fest*, Calgary, AB, Canada

June 17, 2012 Availability and sustainability of health databases and tissue banks in Alberta. *Alberta Innovates – Health Solutions Making Connections Conference*, Jasper, AB, Canada

June 11, 2012 Research in UCVMs Department of Production Animal Health. *Alberta*

*Beef Producers, Animal Health and Welfare Working Group*, Edmonton,

AB, Canada

April 26, 2012 Johne’s disease in cattle and Crohn’s disease in humans – linked diseases?? *Seminar Series Gastroenterology Group*, University of Manitoba, Winnipeg, MN, Canada.

March 6, 2012 Essentials of a disease control program with a focus on Johne’s disease.

British Columbia Ministry of Agriculture, Abbotsford, BC, Canada

February 14, 15, 16, Mastitis in Alberta. *Canadian Bovine Mastitis Research Network*

2012 *workshops*, Lethbridge, Red Deer and Leduc, AB, Canada

February 4, 2012 Johne’s Disease Control in Canada – Coordinated Nationally – Delivered

Provincially. *3rd ParaTB Forum*, Sydney, Australia

January 31, 2012 Making a difference: from innovation platforms to personalized medicine.

*Alberta Health and Wellness Lunch ‘n Learn Presentations*, Edmonton,

AB, Canada

January 21, 2012 Improving udder health on dairy farms using the TACTIC udder

health veterinary kit. *Annual meeting of Western Canadian Association of*

*Bovine Practitioners*, Calgary, AB, Canada

January 12, 2012 How to get a low bulk tank somatic cell count and keep it low. *Eastern*

*Manitoba Holstein Dairy Club annual conference*, Steinbach, MN,

Canada

January 12, 2012 Latest research results related to Johne’s disease research. *Eastern*

*Manitoba Holstein Dairy Club annual conference*, Steinbach, MN,

Canada

January 11, 2012 Production of safe high quality milk. *Dairy Farmers of Ontario annual*

*general meeting*, Toronto, ON, Canada

January 10, 2012 Use of milk for monitoring disease in dairy herds. *CanWest DHI annual*

*general meeting*, Toronto, ON, Canada

October 18, 2011 The role of biosecurity in endemic disease on dairy farms. *CanWest*

*Veterinary Conference*, Banff, AB, Canada

October 18, 2011 Johne’s disease in cattle and Crohn’s disease in humans – linked diseases?? *CanWest Veterinary Conference*, Banff, AB.

October 3, 2011 Johne’s disease in cattle and Crohn’s disease in humans – linked diseases?? *40th Annual Meeting of the Canadian Institute of Public Health Inspectors*, Calgary, Alberta, Canada

June 8, 2011 Udder health treatment and prevention: what is in the near future? 10 year Orbeseal Symposium. Pfizer. London, UK.

June 9, 2011 Mastitis and Animal Welfare. 10 year Orbeseal Symposium. Pfizer. London, UK.

June 9, 2011 Animal welfare in udder health - Prevention and treatment: the role of the veterinarian. 10 year Orbeseal Symposium. Pfizer. London, UK.

May 31, 2011 How to get a low bulk tank somatic cell count and keep it low. Nutri-Source annual meeting for clients, Sylvan Lake, AB, Canada

May 30, 2011 An Alberta Disease Control Program with a focus on Johne’s Disease – the AJDI. Personnel of CanWest DHI, Calgary, AB, Canada

March 29, and The Alberta Johne’s Disease Initiative. Alberta Milk Spring Meetings.

April 7 and 8, 2011 Red Deer, Taber and Lethbridge, AB, Canada

February 17, 2011 How to get a low bulk tank somatic cell count and keep it low. Annual Meeting Dairy Farmers of Manitoba, Brandon, MN, Canada

November 30, 2010 The Dutch Udder Health Centre, an international perspective. Final symposium of the Dutch Udder Health Centre, Arnhem, The Netherlands.

November 29, 2010 The Canadian Bovine Mastitis Research Network. 3rd Annual meeting *Dutch Mastitis Research Workers*, Utrecht, The Netherlands

November 28- Approach of mastitis on large dairy farms. Four lectures to Dutch farmers

December 1, 2010 for the Dutch Udder Health Centre.

November 26, 2010 The added value of collaboration between basic scientists and clinicians/epidemiologists. Faculty of Veterinary Medicine, Ghent University, Ghent, Belgium

November 18, 2010 Johne’s disease in cattle and Crohn’s disease in humans – linked diseases?? *John Waters Zoonotic Disease Workshop*, Calgary, Alberta, Canada

June 8, 2010 Johne’s disease in cattle and Crohn’s disease in humans – linked diseases?? *10th Canadian Animal Health Laboratorian Network Annual Meeting*, Calgary, Alberta, Canada

December 17, 2009 Johne’s disease in cattle and Crohn’s disease in humans – linked diseases?? Faculty of Veterinary Medicine, Ghent University, Ghent, Belgium

November 15, 2009 Alberta Inflammatory Bowel Disease Consortium – A new approach to the study of IBD. Crohn’s and Colitis Foundation of Canada Annual Meeting: CCFC & You, Emerging Trends in Inflammatory Bowel Disease, Calgary, Canada

June 23, 2009 Use of bulk milk for herd-level disease monitoring. CanWest DHI meeting, Guelph, Ontario, Canada

April 24, 2009 Mastitis Prevention and Therapy – What makes sense from an overall herd perspective. Veterinary clinics around Lethbridge, AB, Canada

March 10, 2009 Use of bulk milk for herd-level disease monitoring. CanWest DHI seminar at *Western Canadian Dairy Seminar*, Red Deer, Alberta, Canada

December 5, 2008 Heifer mastitis: Attention today, pays off tomorrow! *Manitoba Dairy Seminar* 2008, Winnipeg, MN, Canada

March 4-8, 2008 New approaches to mastitis prevention. *Western Canadian Dairy Seminar*, Red Deer, Alberta, Canada

January 27, 2008 Biosecurity and mastitis. *National Mastitis Council (NMC) 47th annual meeting*, New Orleans, LA, USA

December 11, 2007 The mastitis situation in Canada – where do you stand? *Colloque sur la*

*santé des troupeaux laitiers*, 3e edition, Quebec City, Canada

July 19, 2007 Brief update on status of potential link with Crohn’s Disease. *Johne’s Disease Meeting of Dairy Farmers of Canada and the Canadian Cattlemen’s Association*, Calgary, AB, Canada

July 19, 2007 Overview of current Canadian research and applications submitted which address the gaps identified. *Johne’s Disease Meeting of Dairy Farmers of Canada and the Canadian Cattlemen’s Association*, Calgary, AB, Canada

June 25, 2007 Impact of heifer mastitis on somatic cell count, production, culling and fertility. *Conference on heifer mastitis*, Ghent, Belgium

March 21, 2007 Johne’s disease – the Canadian situation. University of Calgary, *Gastrointestinal Research Group seminars*, Calgary, Canada

January 17, 2007 Johne’s disease – towards a national prevention and control program. Technical Committee of the Alberta Beef Producers, Calgary, Canada

December 18, 2006 Veterinary Education in Calgary. *Norwegian Veterinary School*, Oslo,

Norway

October 20-23, 2006 Management of a high somatic cell count problem. *27th IDF World Dairy*

*Congress*, Shanghai, China

March 27-30, 2006 Treatment of mastitis. *III Panamerican Congress on Mastitis Control and*

*Milk Quality*, Leon, Guanajuato, Mexico (presented by my former graduate student Ruth Zadoks because of adoption of our 3rd daughter from China)

March 7, 2006 Mastitis, the Canadian perspective. *Western Canadian Dairy Seminar*, Red Deer, Alberta, Canada (presented by my graduate student Richard Olde Riekerink because of adoption of our 3rd daughter from China)

December 7, 2005 Heifer mastitis: Attention today, pays off tomorrow! Collogue sur la santé des troupeaux laitiers, Saint-Hyacinthe, QC, Canada

July 24, 2005 Epidemiology of mastitis: change in distribution of mastitis pathogens,

bulk milk somatic cell count and preventative practices in the last decade. *CSAS Mastitis Symposium at the 2005 American Dairy Science Association/American Animal Science Association/Canadian Society of Animal Science Joint Annual Meeting*, Cincinnati, OH, USA

June 21-22, 2005 Control of mastitis in dairy cows. *Italian Association of Bovine*

*Practitioners*, Milan, Italy (two-day continuing education course)

April 2, 2005 Health problems in organic dairy farms. *Organic dairy symposium Prince*

*Edward Island*. Charlottetown, PEI, Canada

February 23, 2005 Voluntary Atlantic Johne’s disease program. *2005 New Brunswick Dairy Conference*, Moncton, NB, Canada

January 22, 2005 Prepartum heifers – is preventative treatment warranted? *5th Annual CE Conference of the Atlantic Bovine Practitioners Association*, Moncton, NB, Canada

January 22, 2005 Atlantic Johne’s program. *5th Annual CE Conference of the Atlantic Bovine Practitioners Association*, Moncton, NB, Canada

November 25, 2004 Treatment of subclinical mastitis. *Belgian Mastitis Forum*, Ghent, Belgium

October 22, 2004 Marrying epidemiology and basic science: a tale of two studies. *Biomedical Science seminars*, Atlantic Veterinary College, Charlottetown, PEI

March 31, 2004 Johne’s Disease – Management and the Crohn’s debate. *Dairy Focus*, Dartmouth, NS, Canada

February 1, 2004 Cure of subclinical *Staphylococcus aureus* mastitis during lactation. 43rd *Natl Mastitis Counc Ann Mtg*, Charlotte, NC, USA

January 22, 2004 Johne’s – An international perspective. *4th Annual CE Conference of the Atlantic Bovine Practitioners Association*, Moncton, NB, Canada

October 7, 2003 The effect of an internal teat sealer on udder health after calving. Royal Veterinary and Agricultural College, Copenhagen, Denmark

October 7, 2003 A slaughterhouse study on the cow-level prevalence of paratuberculosis in dairy cows in Atlantic Canada and the state of Maine (USA). Royal Veterinary and Agricultural College, Copenhagen, Denmark

May 1, 2003 *Giardia* and *Cryptosporidium* infections in domestic livestock: zoonotic potential, transmission dynamics, and threat to drinking water. *Giardia and Cryptosporidium seminar*. Atlantic Veterinary College, Charlottetown, Canada

March 18, 2003 The Foot-and-Mouth Disease outbreak in The Netherlands and Great Britain. Veterinary College, Agricultural University, Beijing, China

March 18, 2003 The role of the dog in the transmission of *Neospora caninum*. Veterinary College, Agricultural University, Beijing, China

March 18, 2003 Possibilities and challenges to become a graduate student in North America. Veterinary College, Agricultural University, Beijing, China

February 6, 2003 Udder health in the high production herd. *2003 New Brunswick Dairy Conference*, Moncton, NB, Canada

January 26, 2003 The effect of management style on udder health. *42nd Natl Mastitis Counc Ann Mtg*, Fort Worth, TX, USA

January 18, 2003 The Foot-and-Mouth Disease outbreak in The Netherlands and Great Britain. Annual conference of the SCVMA, Charlottetown, PE, Canada

November 14, 2002 Bulk milk SCC and distribution of mastitis pathogens in The Netherlands over the last decades. Mastitis Research Workers annual conference, Chicago, IL, USA

July 18, 2002 Johne’s – An international perspective with special emphasis on The Netherlands. *54th Ann Conf of the Can. Vet. Med. Assoc.*, Halifax, NS, Canada

**16. Teaching Responsibilities**

Currently, at the Faculty of Veterinary Medicine of the University of Calgary we are developing the graduate curriculum (the DVM curriculum is now relatively established), continue building the facilities and recruiting the faculty members that are needed for teaching and research.

The courses and contact hours from 2006 to present have changed significantly from year to year because of recruitment of new colleagues. My teaching load is significantly less than at UPEI because of my activities as NSERC Industrial Research Chair in Infectious Diseases of Dairy Cattle and cross-appointment in the Dept. of Community Health Sciences. My annual course work in the academic year 2016-2017 is as follows.

**Course Work and Student Contact**

|  |  |
| --- | --- |
| **Course** | **Contact Hours** |
| VETM 344, Principles of Veterinary Epidemiology (1st year) | 12 |
| VETM 520, Advanced Health Management (3rd year) | 3 |
| MDCH640, Fundamentals of Epidemiology (post-graduate) | 65 |
| Totals | 80 |

## In Calgary, I have supervised 18 DVM summer students, 21 Dutch veterinary students doing a 3-month scientific rotation and 6 HYRS students.