

# Denis Haine

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## Education

- 2012–2017 **Ph.D. in Veterinary Sciences (epidemiology)**, *Faculté de médecine vétérinaire*, Université de Montréal, St-Hyacinthe, QC.  
Director: Jocelyn Dubuc and Julie Arsenault. *La réforme des vaches laitières au Québec*. (Culling of dairy cows in Québec.)
- 2001–2002 **M.Sc. in Veterinary Epidemiology**, *The London School of Hygiene and Tropical Medicine and The Royal Veterinary College*, University of London, Londres, United Kingdom.  
Director: Dirk Pfeiffer and Koen Mintiens. *Risk-mapping of Bovine Hypodermosis*.
- 1991–1998 **Doctor in Veterinary Medicine**, *Faculté de médecine vétérinaire*, Université de Liège, Liège, Belgium.

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## Research Experience

- 2017–now **Post-doctoral researcher**, *Canadian Bovine Mastitis and Milk Quality Research Network*, Faculté de médecine vétérinaire, Université de Montréal.
- Assessment of misclassification bias in longitudinal udder health studies.
  - Computing the global cost of bovine mastitis in Canada.
  - Determination of prevalence, incidence, and elimination rates of intramammary infections over the dry period.
- 2010–2011 **Research Associate and Scientific Assistant**, *Canadian Bovine Mastitis Research Network*, Faculté de médecine vétérinaire, Université de Montréal.
- Determined sensitivity and specificity of a diagnostic test in the absence of a gold standard through the use of Bayesian analysis.
  - Evaluated the sensitivity of a new gas chromatography test.
  - In charge of bacterial strain culture collection (>16500 isolates) and its database (supervising technical staff, managing material, coordinating shipment of isolates to collaborators).
  - Plan its budget and watch to its observance.
  - Coordinated a NSERC research Network scientific activities under the supervision of its director.
  - Organized submission process of activity reports by Network researchers and assure follow-ups for deadlines and conditions to be met for NSERC.
  - Support of knowledge transfer from a NSERC research centre to dairy producers.
- 1998–2000 **Researcher**, *Federal Ministry of agriculture*, Faculté de médecine vétérinaire, Université de Liège.
- Research topic: Therapeutic Strategies in Bovine Respiratory Diseases.

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## Professional Experience

- 2010–now **Consultant in epidemiology and biostatistics.**
- Data analysis of pre-clinical and clinical studies in human and veterinary medicine, including phase II, III and IV studies.
  - Developed statistical analysis plans of veterinary clinical trials submitted to USDA Center for Veterinary Biologics and EMA.
- 2007–2010 **Director of biostatistics, JSS Medical Research, Westmount, QC.**
- Developed statistical analysis plans for human clinical trials submitted to FDA and Health Canada.
  - Implemented the use of SAS according to regulatory requirements in a clinical research organization.
  - Provided statistical consulting services to McGill University Health Centre.
  - Reviewed case report forms and databases set-up to improve data quality.
  - Built a team of statisticians and medical writers in a clinical research organization.
  - Produced scientific and statistical reports to governmental agencies (Health Canada, FDA)
  - Experience in human medicine through clinical research (Alzheimer's disease, HIV, cardio-vascular diseases, arthritis, asthma, glaucoma, diabetes, hepatitis, osteoporosis, ...)
- 2003–2006 **Epidemiologist, Épidémio-Qualité Inc., St-Hyacinthe, QC.**
- Provided necessary information for the development of a mathematical model of airborne transmission of avian influenza, foot-and-mouth disease, Newcastle disease and Aujeszky's disease for Environment Canada.
  - Performed qualitative risk analyses for disease transmission and zoonoses for the Canadian Food Inspection Agency and animal producers' associations (bovine spongiform encephalopathy, avian influenza virus H5N1, salmonellosis).
  - Evaluated indicators of risk associated to agriculture-borne pathogens for Agriculture Canada.
  - Designed, supervised and managed pilot studies and surveys.
- 2002–2003 **Clinical Assistant, Large Animal Internal Medicine, Faculté de médecine vétérinaire, Université de Liège, Liège, Belgium.**
- 1998–2000
- Investigated farm disease outbreaks, for zoonotic and health problems.
  - Day-to-day management of a University veterinary clinic and its staff.
- 2000–2001 **Intern, Large Animal Internal Medicine, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, SK.**
- 1998 **Veterinarian, Clinique vétérinaire de Vermondans–Pont-de-Roide, Pont-de-Roide, France.**

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## Honors

- 2013 Bourse facultaire d'excellence de 2<sup>e</sup> année de doctorat.

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## Publications

Impact: Google Scholar; september 2017: citations = 478, h-index = 10, i10-index = 11.

### PEER-REVIEWED

P. S. Aisen, S. Gauthier, S. H. Ferris, D. Saumier, D. Haine, D. Garceau, A. Duong, J. Suhy, J. Oh, W. C. Lau, and J. Sampalis. Tramiprosate in mild-to-moderate Alzheimer's Disease — a randomized, double-blind, placebo-controlled, multi-centre study (the Alphase study). *Archives of Medical Sciences*, 7(1):102–111, 2011.

H. A. Delgado, R. I. Cue, D. Haine, A. Sewalem, R. Lacroix, D. Lefebvre, J. Dubuc, É. Bouchard, and K. M. Wade. Profitability measures as decision-making tools for Québec dairy herds. *Canadian Journal of Animal Science*, pages 1–44, 2017.

V. Fauteux, É. Bouchard, D. Haine, D. T. Scholl, and J-P Roy. Prediction of bulk tank somatic cell count violations based on monthly individual cow somatic cell count data. *Journal of Dairy Science*, 98(4):2312–2321, 2015.

J. M. FitzGerald, S. Foucart, S. Coyle, J. Sampalis, D. Haine, E. Psaradellis, and R. A. McIvor. Montelukast as add-on therapy to inhaled corticosteroids in the management of asthma (the SAS trial). *Canadian Respiratory Journal*, 16 Suppl A:5A–14A, 2009.

S. Gauthier, P. S. Aisen, S. H. Ferris, D. Saumier, A. Duong, D. Haine, D. Garceau, J. Suhy, J. Oh, W. Lau, and J. Sampalis. Effect of tramiprosate in patients with mild-to-moderate Alzheimer's Disease: exploratory analyses of the MRI sub-group of the Alphase study. *Journal of Nutritional Health and Aging*, 13:550–557, 2009.

D. Haine, F. Boelaert, D. Pfeiffer, B. Losson, and K. Mintiens. Herd-level seroprevalence and risk-mapping of bovine hypodermosis in Belgian cattle herds. *Preventive Veterinary Medicine*, 65:93–104, 2004.

D. Haine, R. Cue, A. Sewalem, K. Wade, R. Lacroix, D. Lefebvre, J. Arsenault, É. Bouchard, and J. Dubuc. Contextual herd factors associated with cow culling risk in Québec dairy herds: A multilevel analysis. *Preventive Veterinary Medicine*, 144:7–12, 2017.

D. Haine, R. Cue, A. Sewalem, K. Wade, R. Lacroix, D. Lefebvre, J. Arsenault, É. Bouchard, and J. Dubuc. Culling from the herd's perspectives—Exploring herd-level management factors and culling rates in Québec dairy herds. *Preventive Veterinary Medicine*, in press.

D. Haine, R. Cue, A. Sewalem, K. Wade, R. Lacroix, D. Lefebvre, J. Arsenault, É. Bouchard, and J. Dubuc. Marginal structural Cox model to determine the causal effect of clinical mastitis on Québec dairy cow culling risk. *Preventive Veterinary Medicine*, in press.

C. Hutnik, D. Neima, F. Ibrahim, R. Scott, J. Vaillancourt, D. Haine, J. S. Sampalis, N. Bastien, and S. Foucart. Tolerability and effectiveness of preservative-free dorzolamide-timolol (Preservative-Free COSOPT) in patients with open-angle glaucoma or ocular hypertension. *Clinical Ophthalmology*, 4:1–10, 2010.

M-È Paradis, D. Haine, S. P. Oliver, B. Gillespie, S. Messier, J. Comeau, and D. T. Scholl. Bayesian estimation of the diagnostic accuracy of a multiplex real-time PCR assay and bacteriological culture for 4 common bovine intramammary pathogens. *Journal of Dairy Science*, 95(11):6436–6448, 2012.

K. K. Reyher, D. Haine, I. R. Dohoo, and C. W. Revie. Examining the effect of intramammary infections with minor mastitis pathogens on the acquisition of new intramammary infections with major mastitis pathogens — a systematic review and meta-analysis. *Journal of Dairy Science*, 95(11):6483–6502, 2012.

D. Saumier, P. S. Aisen, S. Gauthier, B. Vellas, S. H. Ferris, A. Duong, J. Suhy, J. Oh, W. Lau, D. Garceau, D. Haine, and J. Sampalis. Lessons learned in the use of volumetric MRI in therapeutic trials in Alzheimer's Disease: the ALZHEMED (tramiprosate) experience. *Journal of Nutritional Health and Aging*, 13:370–372, 2009.

D. Saumier, A. Duong, D. Haine, D. Garceau, and J. Sampalis. Domain-specific cognitive effects of tramiprosate in patients with mild to moderate Alzheimer's Disease: ADAS-cog subscale results from the Alphase study. *Journal of Nutritional Health and Aging*, 13:808–812, 2009.

Y. D. N. Tremblay, D. Lamarche, P. Chever, D. Haine, S. Messier, and M. Jacques. Characterization of the ability of coagulase-negative *staphylococci* isolated from the milk of Canadian farms to form biofilms. *Journal of Dairy Science*, 96(1):234–246, 2012.

K. A. Veh, R. C. Klein, C. Ster, P. Keefe, P. Lacasse, D. Scholl, J-P Roy, D. Haine, S. Dufour, B. G. Talbot, A. O. B. Ribon, and F. Malouin. Genotypic and phenotypic characterization of *Staphylococcus aureus* causing persistent and nonpersistent subclinical bovine intramammary infections during lactation or the dry period. *Journal of Dairy Science*, 98(1):155–168, 2015.

C. Wu, J. Labrie, Y. D. N. Tremblay, D. Haine, M. Mourez, and M. Jacques. Zinc as an agent for the prevention of biofilm formation by pathogenic bacteria. *Journal of Applied Microbiology*, 115(1):30–40, 2013.

#### Non peer-reviewed

A. Ahmadi, M. Aiello-Lammens, J. Ainsley, J. Allen, A. Alsheikh-Hussain, P. Banaszkiwicz, D. Barneche, T. Bekolay, M. Black, J. Blischak, A. Boughton, K. Broman, A. Cabunoc, S. Chamberlain, D. Chen, R. Emonet, A. Fournier, J. García-Algarra, N. Ghaffari, H. Gibling, D. Haine, M. Hansen, F. Held, D. Henderson, J. Hiebert, J. Hollister, W. T. King, B. Marwick, F. Michonneau, B. Mills, H. Nakhoul, A. O'Leary, J. Pipitone, T. Poisot, S. Ritchie, N. Robinson, P. Schmiedeskamp, R. Silva, G. Simpson, S. Stevens, M. Sumner, S. Supp, A. Teucher, D. Turek, S. Turner, G. Wilson, K. Woo, T. Wright, and N. Zimmerman. Software Carpentry: Programming with R. <http://dx.doi.org/10.5281/zenodo.27353>, May 2015. Blischak, J. and Haine, D., editors.

D. Haine and A. Ravel. Identification et traçabilité en production porcine. Porc Québec, 2005.

#### In review

M. Aghamohammadi, D. Haine, D. F. Kelton, H. Barkema, H. Hogeveen, G. Keefe, and S. Dufour. Mastitis-associated costs on Canadian dairy farms. Submitted to *Journal of Dairy Science*.

H. Delgado, R. Cue, D. Haine, A. Sewalem, R. Lacroix, D. Lefebvre, J. Dubuc, É. Bouchard, and K. Wade. Prototype of a profitability analysis tool with multidimensional benchmark for dairy herds. Submitted to *International Journal of Agricultural Management*.

D. Haine, R. Cue, A. Sewalem, K. Wade, R. Lacroix, D. Lefebvre, J. Rushton, J. Arsenault, É. Bouchard, and J. Dubuc. Culling from the actors' perspectives—Decision-making criteria for

culling in Québec dairy herds enrolled in a veterinary preventive medicine program. Submitted to Preventive Veterinary Medicine.

D. Haine, I. Dohoo, D. Scholl, and S. Dufour. Diagnosing intramammary infection: Controlling misclassification bias in longitudinal udder health studies. Submitted to Preventive Veterinary Medicine.

S. Skoulidakis, S. Dufour, D. Haine, J-Y Perreault, and J-P Roy. Early lactation extended pirlimycin therapy against naturally acquired *Staphylococcus aureus* intramammary infections in heifers: A randomized controlled trial. Submitted to Journal of Dairy Science.

### Conferences

M. Brihoum, D. Haine, J. Coghe, D. Desmecht, and F. Rollin. Ergot-associated dyspnea and interstitial pneumonia in a dairy herd. Poster, XXI World Buiatrics Congress, 2000. Punta del Este, Uruguay.

B. Conway, J. DeWet, A. Tsang, K. Logue, C. Kovacs, N. Ackad, E. Rampakakis, N. Longo, D. Haine, and J. S. Sampalis. Real-life safety and efficacy of lopinavir/ritonavir in drug-naïve and anti-retroviral treatment-experienced HIV patients: 96-week follow-up. In *XVIII International AIDS Conference*, Vienna, Austria, 2010. AIDS.

B. Conway, J. DeWet, A. Tsang, K. Logue, C. Kovacs, N. Ackad, J. Vaillancourt, N. Longo, D. Haine, and J. Sampalis. Real-life effectiveness and safety of lopinavir/ritonavir in HIV-infected adults who experienced prior different antiretroviral treatments. *Journal of the International AIDS Society*, 11(Suppl 1):P81, 2008. Poster, Ninth International Congress on Drug Therapy in HIV Infection, Glasgow, UK, 9-13 November 2008.

R. I. Cue, K. M. Wade, H. Delgado, R. Lacroix, D. Lefebvre, A. Sewalem, É. Bouchard, J. Dubuc, and D. Haine. An initial study of the economic values of dairy cattle traits in canadian holsteins estimated using random regression models. In *Proceedings. 10th World Congress on Genetics Applied to Livestock Production*, 2014.

H. A. Delgado, R. Cue, A. Sewalem, R. Lacroix, D. Lefebvre, É. Bouchard, J. Dubuc, D. Haine, and K. Wade. The impact of selected milking, feeding, and housing management systems on the profitability of québec dairy herds. In *Proceedings. ADSA-ASAS-CSAS Joint Annual Meeting*, 2014.

D. Garceau, D. Saumier, D. Haine, and J. Sampalis. Homotaurine (VIVIMIND): mechanisms of action, proof-of-concept and relevance to healthy aging. Poster, International Association of Nutrition and Aging, 2009. Paris, France.

D. Haine. Episensr: an R package for deterministic and probabilistic bias analysis of epidemiologic data. Poster, ISVEE14: Veterinary Epidemiology & Economics: Planning our Future, 2015. Merida, Mexico.

D. Haine, F. Boelaert, K. Mintiens, C. Saegerman, J-F Lonneux, J. Bughin, J. Wullepit, J-P Vermeersch, D. Pfeiffer, and B. Losson. Risk-mapping of bovine hypodermosis in Belgian cattle herds. Oral communication, COST833 workshop on myiasis of livestock, European Communities, 2002. Bari, Italy.

D. Haine, F. Boelaert, K. Mintiens, C. Saegerman, J-F Lonneux, D. Pfeiffer, and B. Losson. Risk-mapping of bovine hypodermosis in Belgian cattle herds. Oral communication, Joint Meeting

of the Dutch and Flemish Veterinary Epidemiology Associations VEE-VEEC, 2003. Leuven, Belgium.

D. Haine, F. Boelaert, K. Mintiens, C. Saegerman, D. Pfeiffer, and B. Losson. Risk-mapping of bovine hypodermosis in Belgian cattle herds. Poster, 2003 Annual Conference of the Society for Veterinary Epidemiology and Preventive Medicine (SVEPM), 2003. Warwick, UK.

D. Haine, F. Boelaert, K. Mintiens, C. Saegerman, D. Pfeiffer, and B. Losson. Risk-mapping of bovine hypodermosis in Belgian cattle herds. Poster, GisVet Conference, 2006. Guelph, ON.

D. Haine, J. Carrier, R. Cue, A. Sewalem, K. Wade, J. Arsenault, É. Bouchard, and J. Dubuc. Impact of disease on individual culling risk and herd culling rate in dairy cattle. In *46th Annual Conference*. American Association of Bovine Practitioner, 2013.

D. Haine, R. Cue, A. Sewalem, K. Wade, R. Lacroix, D. Lefebvre, J. Rushton, J. Arsenault, É. Bouchard, and J. Dubuc. Culling perspectives from dairy producers, veterinarians, dhi and feed mill advisors: a Q-methodology study. Poster, 48th Annual Conference, American Association of Bovine Practitioners, 2015. New Orleans, USA.

D. Haine, R. Cue, A. Sewalem, K. Wade, R. Lacroix, D. Lefebvre, J. Rushton, J. Arsenault, É. Bouchard, and J. Dubuc. Culling perspectives from dairy producers, veterinarians, DHI and feed mill advisors: a Q-methodology study. Poster, ISVEE14: Veterinary Epidemiology & Economics: Planning our Future, 2015. Merida, Mexico.

D. Haine, H. Delgado, R. Cue, A. Sewalem, K. Wade, R. Lacroix, D. Lefebvre, J. Rushton, J. Arsenault, É. Bouchard, and J. Dubuc. Exploring herd-level management factors and culling rates in Québec dairy herds. In *Proceedings 48th Annual Conference*. American Association of Bovine Practitioner, 2015.

D. Haine, H. Delgado, R. Cue, A. Sewalem, K. Wade, R. Lacroix, D. Lefebvre, J. Rushton, J. Arsenault, É. Bouchard, and J. Dubuc. Exploring herd-level management factors and culling rates in Québec dairy herds. In *Proceedings ISVEE14*. International Symposium in Veterinary Epidemiology and Economics, 2015.

D. Haine, I. Dohoo, D. Scholl, H. Stryhn, and S. Dufour. Sampling strategies to control misclassification bias in longitudinal udder health studies. In *Proceedings SVEPM 2017*. Society for Veterinary Epidemiology and Preventive Medicine, 2017.

D. Haine, A. Linden, and F. Rollin. Balanoposthitis due to *Corynebacterium renale* in Belgian Blue fattening steers. Poster, XXI World Buiatrics Congress, 2000. Punta del Este, Uruguay.

D. Haine and J. Sampalis. Challenges in clinical trials with disease-modifying treatments for Alzheimer's Disease: lessons learned from the Alphase trial and other anti-amyloid therapeutic trials. Oral communication, GerontoNet Symposium, 2009. Rome, Italy.

D. Hurnik, D. Haine, A. Ravel, I. Robertson, W. Hooper, F. Bédard, and E. Lowe. Results of a national swine identification and traceability pilot study in Canada. In *Proceedings of the 19th IPVS Congress*, volume 1, page 307, Denmark, 2006.

C. Hutnik, D. Neima, F. Ibrahim, R. Scott, D. Haine, J. Sampalis, N. Bastien, and S. Foucart. Tolerability and efficacy of preservative-free dorzolamide-timolol (Preservative-Free COSOPT) in

patients with open-angle glaucoma or ocular hypertension. Poster, World Glaucoma Congress, 2009. Boston, MA.

M-È Paradis, D. Haine, S. Messier, J. Middleton, J. Perry, A. I. Ramirez, and D. T. Scholl. Identification of coagulase-negative *Staphylococcus* species by gas chromatography. In H. Hogeveen and T. J. G. M. Lam, editors, *Udder health and communication: proceedings of the international conference*. Wageningen Academic Publishers, 2011.

M-È Paradis, D. Haine, S. Messier, J. Middleton, J. Perry, A. I. Ramirez, and D. T. Scholl. Identification of coagulase-negative *Staphylococcus* species by gas chromatography. Poster, CAVEPM 2011, 2011. St-Hyacinthe, QC.

M-È Paradis, D. Haine, S. P. Oliver, B. Gillespie, S. Messier, J. Comeau, and D. T. Scholl. Estimation of the diagnostic accuracy of a multiplex real-time PCR assay and bacteriological culture for four bovine intramammary pathogens. In *Canadian Association of Veterinary Epidemiology*, 2011.

M-È Paradis, D. Haine, S. P. Oliver, B. Gillespie, S. Messier, J. Comeau, and D. T. Scholl. Estimation of the diagnostic accuracy of a multiplex real-time PCR assay and bacteriological culture for four bovine intramammary pathogens. In H. Hogeveen and T. J. G. M. Lam, editors, *Udder health and communication: proceedings of the international conference*. Wageningen Academic Publishers, 2011.

M-È Paradis, D. Haine, S. P. Oliver, B. Gillespie, S. Messier, J. Comeau, and D. T. Scholl. Estimation of the diagnostic accuracy of a multiplex real-time PCR assay and bacteriological culture for four bovine intramammary pathogens. Oral communication, National Mastitis Council, 2011. Arlington, VA.

Y. D. N. Tremblay, D. Lamarche, P. Chever, D. Haine, S. Messier, and M. Jacques. Characterization of the ability of coagulase negative staphylococci isolated from milk to form biofilms. Conference of Research Workers in Animal Diseases (CRWAD), Chicago, December 2-4, 2012.

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## Blogs and Social Media

Blog [denishaine.ca](http://denishaine.ca)  
Twitter [@denishaine](https://twitter.com/denishaine)

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## Professional Activities

Accredited Instructor for Software Carpentry.

Accredited Instructor for Data Carpentry.

Organizer of *clinicR*, workshops on using R at the Faculté de médecine vétérinaire of the Université de Montréal.

2014–2016 Co-maintainer of the lesson on introduction to programming with R, Software Carpentry.

Author, developer and maintainer of R package *episensr*: Basic sensitivity analysis of epidemiological results. It provides a sensitivity analysis of relative risk adjusting for the effect of non-measured confounding factors and for misclassification bias of exposure/outcome, or both.

Author, developer and maintainer of R package `misclass`: Misclassification bias in longitudinal udder health studies. It allows to assess the impact of selection and misclassification bias on incidence and association measures in longitudinal studies.

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## Professional Qualifications

2008 Executive Development Course, McGill Desautels Faculty of Management, McGill University

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## Teaching and Workshops

2017 **Instructor**, *DMV2210 Quantitative methods in veterinary medicine (statistical tests)*, Faculté de médecine vétérinaire, Université de Montréal.

**Software Carpentry workshops**, McGill University (2015), Université de Montréal (2014), *Pycon Conference* (2014).

2014 **Practicals**, *PTM6675 Quantitative methods in epidemiology*, Faculté de médecine vétérinaire, Université de Montréal.

2012 **Montréal R Users Group workshop**, *Reproducible research with R, Sweave, and L<sup>A</sup>T<sub>E</sub>X*.

2002–2003 **Clinical instructor**, *Large animal internal medicine*, Faculté de médecine vétérinaire, Université de Liège.  
1998–2000

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## Computer Skills

Statistical Packages	R, Stata, SAS, SPSS, JAGS, BUGS, Stan	Languages	S/R, C++, Perl, bash shell, python, SQL
Office Automation	L <sup>A</sup> T <sub>E</sub> X, Microsoft™ Office, LibreOffice	Operating Systems	Linux, Windows