Publication List

(Research Group Members Shown in Italics)

Submitted Articles

- 98. *C. Ward*, R. Deardon & A. Schmidt "Estimating the relative importance of multiple data sources informing behavioral change in the presence of data uncertainty during the COVID-19 pandemic" submitted to *Biometrics*. https://arxiv.org/abs/2503.00982
- 97. **Y. Zhang**, **R. Deardon** & L. Deeth "Composite method for fast computation of individual level spatial epidemic models" submitted to *Spatial Statistics*.
- 96. **J. Peitsch**, G. Pokharel & **R. Deardon** "Directionally-dependent spatial epidemic models" submitted to *Spatial Statistics*.
- 95. V. Callier, **R. Deardon** & C. Viboud "Spatio-temporal spread of COVID-19 over three waves in the continental United States" submitted to *Proceedings of the Royal Society B*.
- 94. **R. Li**, **R. Deardon**, N. Li, J. Conly & J. Leal "Compartmental modelling of the transmission dynamics of methicillin-resistant *Staphylococcus aureus* (MRSA) within hospitals in Edmonton, Canada" submitted to the *Canadian Journal of Statistics*.
- 93. *M. Mahsin*, W. Almutiry & R. Deardon "Spatial modeling of infectious disease transmission using continuous time geographically-dependent individual-level models" submitted to *Statistics in Medicine* (revision requested).
- 92. **Kamso** et al. "A semi-automated approach facilitated the assessment of the certainty of evidence for direct comparisons in network meta-analyses" submitted to the *Journal of Clinical Epidemiology*. http://ssrn.com/abstract=5205661 (revision requested).
- 91. **Kamso** et al. "A semi-automated approach facilitated the assessment of the certainty of evidence for indirect and mixed comparisons in network meta-analyses" submitted to the *Journal of Clinical Epidemiology*. http://ssrn.com/abstract=5205660 (revision requested).
- 90. H. Qureshi, T. Hughes, E. Franco, K. Fiest, J. Gratrix, P. Smyczek, R. Read, A. Afzal, **R. Deardon**, A. Kassam & M. Fidler-Benaoudia "Risk of cancer among individuals with a history of bacterial sexually transmitted infections: a population-based study in Alberta, Canada" submitted to *International Journal of Cancer* (revision requested).

Accepted/In Press

- 89. **T. Akter** & **R. Deardon** "Variable screening methods in conditional logistic individual level models of disease spread" to appear in *Spatial & Spatiotemporal Epidemiology*.
- 88. M. Lewis, P. Brown, C. Colijn, L. Cowen, C. Cotton, T. Day, **R. Deardon**, D. Earn, D. Haskell, J. Hefferman, P. Leighton, K. Murty, S. Otto, E. Rafferty, C. Hughes Tuohy, J. Wu & H. Zhu "Charting a future for emerging infectious disease modelling in Canada" to appear in *Lasting Disruption: Economic and Social Impacts of COVID-19 in Canada*, McGill-Queen's University Press. http://hdl.handle.net/1828/15042.

Published Articles

- 87. **M. Ward**, **R. Deardon** & L. Deeth (2025) "A framework for incorporating behavioural change into individual-level spatial epidemic models" in the *Canadian Journal of Statistics*, 53(1), e11828. https://doi.org/10.1002/cjs.11828
- 86. **T. Akter** & **R. Deardon** (2025) "Conditional logistic individual-level models of spatial infectious disease dynamics" in *Infectious Disease Modelling*, 10(1), 268-286. https://doi.org/10.1016/j.idm.2024.10.008
- 85. *C. Rahul* & R. Deardon (2025) "Behavioural change piecewise constant spatial epidemic models" in *Infectious Disease Modelling*, 10(1), 302-324
- 84. *C. Rahul* & R. Deardon (2024) "Individual-level models of disease transmission incorporating non-parametric spatial risk" in *Spatial & Spatiotemporal Epidemiology*, 50, 100664. https://doi.org/10.1016/j.sste.2024.100664
- 83. E. Hodzic-Santor & R. Deardon (2024) "Edge effects in spatial infectious disease models" in Spatial & Spatiotemporal Epidemiology, 50, 100673. https://doi.org/10.1016/j.sste.2024.100673
- 82. M. Biesheuvel, *C. Ward*, P. Penterman, E. van Engelen, G. Schaik, **R. Deardon** & H. Barkema (2024) "Within-herd transmission of *Mycoplasma bovis* infection in 20 Dutch dairy herds" in *Journal of Dairy Science*, 107(1), 503-516. https://doi.org/10.3168/jds.2023-23407
- 81. *C. Ward*, R. Deardon & A. Schmidt (2023) "Bayesian modelling of dynamic behavioural change during an epidemic" *Infectious Disease Modelling*, 8(4), 947-963. https://doi.org/10.1016/j.idm.2023.08.002
- 80. **L. Amiri**, M. Torabi & **R. Deardon** (2023) "Spatial modelling of infectious diseases with covariate measurement error" in *Journal of the Royal Statistical Society: Series C*, 73(2), 460-477. https://doi.org/10.1093/jrsssc/qlad104
- 79. *L. Amiri*, M. Torabi & R. Deardon (2023) "Analyzing COVID-19 data in the Canadian Province of Manitoba: A new approach" in *Spatial Statistics*, 55:100729. doi: 10.1016/j.spasta.2023.100729.
- 78. **T.** Akter & R. Deardon (2023) "Comparison of variable screening methods in infectious disease transmission models" in Spatial and Spatiotemporal Epidemiology, 47, 100622.
- 77. M. Kamso, J. Pardo, S. Whittle, R. Buchbinder, G. Wells, V. Glennon, P. Tugwell, R. Deardon, T. Sajobi, G. Tomlinson, J. Elliot, S. Kelly & G. Hazlewood (2023). "Crowdsourcing and automation facilitated the identification and classification of randomized controlled trials in a living review' in Journal of Clinical Epidemiology, 164, 1-8. https://doi.org/10.1016/j.jclinepi.2023.10.007
- 76. *M. Pasha*, R. Deardon & A. Rahim (2023) "A study on inspection schemes in optimal design of control charts for deteriorating processes" in *Quality and Reliability Engineering International*, 39(3), 732-751. https://doi.org/10.1002/qre.3253
- 75. *M. Mahsin*, R. Deardon & P. Brown (2022) "Geographically-dependent individual-level models for infectious diseases transmission" in *Biostatistics*, 23(1), 1-17. https://doi.org/10.1093/biostatistics/kxaa009
- 74. *J. Angevaare*, Z. Feng & R. Deardon (2022) "Pathogen.jl: Infectious disease transmission network modelling with Julia" in *Journal of Statistical Software*, 104(4), 1?30.

73. G. Pokharel & R. Deardon (2022) "Emulation-based inference for spatial infectious disease transmission models incorporating event time uncertainty" in the Scandinavian Journal of Statistics, 49(1), 455-479. http://doi.org/10.1111/sjos.12523

- 72. **M. Ward**, L. Deeth & **R. Deardon** (2022) "Cluster-aggretion-disaggregation methods for spatial individual level models of infectious disease transmission" in *Spatial & Spatiotemporal Epidemiology*, 41: 100497. https://doi.org/10.1016/j.sste.2022.100497
- 71. **S. A. Naqvi**, M. King, T. DeVries, H. Barkema & **R. Deardon** (2022) "Data considerations for developing deep learning models for dairy applications" in *Computers and Electronics in Agriculture*, 196: 106895. https://doi.org/10.1016/j.compag.2022.106895
- 70. S. A. Naqvi, M. King, R. Matson, T. DeVries, R. Deardon & H. Barkema (2022) "Mastitis detection with recurrent neural networks in farms using automated milking systems" in Computers and Electronics in Agriculture, 192: 106618. https://doi.org/10.1016/j.compag.2021.106618
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- 68. J. Di Francesco, G.P.S. Kwong, **R. Deardon**, S. L. Checkley, G. F. Mastromonaco, F. Mavrot, L. Leclerc & S. Kutz (2022) "Intrinsic and extrinsic factors associated with increased qiviut cortisol in wild muskoxen (Ovibos moschatus)" in *Conservation Physiology*, 10(1), coab103. https://doi.org/10.1093/conphys/coab103
- 67. W. Almutiry, V. Warriyar & R. Deardon (2021) "Continuous-time individual-level models of infectious disease: EpiILMCT" in the Journal of Statistical Software, 98(10), 1-44. https://www.jstatsoft.org/article/view/v098i10
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- 65. **J. Angevaare**, Z. Feng & **R. Deardon** (2021) "Inference of latent event times and transmission network in individual level infectious disease models" in *Spatial & Spatiotemporal Epidemiology*, 37, 100410. https://doi.org/10.1016/j.sste.2021.100410
- 64. **W. Almutiry** & **R. Deardon** (2021) "Contact network uncertainty in individual level models of infectious disease transmission" in *Statistical Communications in Infectious Diseases*, 13(1). DOI: https://doi.org/10.1515/scid-2019-0012
- 63. **Z. Liu**, **R. Deardon**, Y. Fu, **T. Ferdous**, T. Ware & Q. Cheng (2021) "Estimating parameters of two-level individual-level models of the COVID-19 epidemic using ensemble learning classifiers" in *Frontiers in Physics*, 8(11), Article 602722. doi: 10.3389/fphy.2020.602722
- 62. A. Novaes de Amorim, V. Saini & R. Deardon (2021) "A stacked ensemble method for forecasting influenza-like illness visit volumes at emergency departments" in PLOS One, 16(3): e0241725. https://doi.org/10.1371/journal.pone.0241725
- 61. S. Andres-Lasheras, R. Ha, R. Zaheer, C. Lee, C. Booker, C. Dorin, J. Van Donkersgoed, **R. Deardon**, S. Gow, S. Hannon, S. Hendrick, M. Anholt & T. McAllister (2021) "Prevalence and risk factors associated with antimicrobial resistance in bacteria related to bovine respiratory disease A broad cross-sectional study of beef cattle at entry into Canadian feedlots" in *Frontiers in Veterinary Science*, 8, 710. doi: 10.3389/fvets.2021.692646
- 60. B. Singh, *M. Lowerison*, R. Lewinson, I. Vallerand, *R. Deardon*, J. Gill, B. Singh & H. Barkema (2021) "Public health interventions slowed but did not halt the spread of COVID-19 in India" in *Transboundary and Emerging Diseases*, 68(4), 2171-2187. https://doi.org/10.1111/tbed.13868

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- 56. V. Warriyar, W. Almutiry & R. Deardon (2020) "Individual level modelling of infectious disease data: EpiILM" in *The R Journal* 12(1), 199-217.
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- 54. G. Hazlewood, S. Whittle, M. Kamso, E. Akl, G. Wells, P. Tugwell, M. Thomas, C. Lee, M. Ejaredar, D. Choudhary, D. Neuen, J. New-Tolley, M. Powell, A. Quinlivan, A. Qaddoura, R. Deardon, L. Maxwell, J. Pardo Pardo, S. Kelly, R. Buchbinder (2020) "Disease-modifying anti-rheumatic drugs for rheumatoid arthritis: a systematic review and network meta-analysis" in Cochrane Database of Systematic Reviews, 2020 (3), CD013562
- 53. G.P.S. Kwong, **R. Deardon**, *S. Hunt* & M. Guerin (2020) "Bayesian optimal design of agricultural infectious disease transmission experiments" available online in *Statistical Communications in Infectious Diseases*, 12(1). https://doi.org/10.1515/scid-2018-0005
- 52. *R. Romanescu* & R. Deardon (2020) "Implementation of power law network models of epidemic surveillance data for better evaluation of outbreak detection alarms" in *Statistical Communications in Infectious Diseases*, 12(1). https://doi.org/10.1515/scid-2018-0004.
- 51. D. Nobrega, *S. A. Naqvi*, S. Dufour, **R. Deardon**, J. Kastelic, J. de Buck & H. Barkema (2020) "Critically important antimicrobials are not needed to treat non-severe clinical mastitis in lactating dairy cows: results from a network meta-analysis" in the *Journal of Dairy Science*, 103(11), 10585-10603. https://doi.org/10.3168/jds.2020-18365
- 50. *G. Pokharel*, R. Deardon, S. Johnson, G. Tomlinson, P. Hull, G. Hazelwood (2020) "Effectiveness of initial methotrexate-based treatment approaches in early rheumatoid arthritis: An elicitation of rheumatologists' beliefs" in *Rheumatology*, keaa803. https://doi.org/10.1093/rheumatology/keaa803
- 49. A. Ogilvy, S. Collins, T. Tuokko, M. Hilts, **R. Deardon**, W. Hare & A. Jirasek (2020) "Optimization of solid tank design for fan-beam optical CT based 3D radiation dosimetry" in *Physics in Medicine & Biology*. 65, 245012. https://doi.org/10.1088/1361-6560/abbf98
- 48. *C. Augusta*, R. Deardon & G. Taylor (2019) "Deep learning for supervised classification of spatial epidemics" in *Spatial & Spatiotemporal Epidemiology*, 29, 187-198.
- 47. *M. Ward*, *A. Stanley*, L. Deeth **R. Deardon**, Z. Feng & L. Trotz-Williams (2019) "Methods for detecting seasonal influenza epidemics using a school absenteeism surveillance system" in *BMC Public Health*, 19, Article: 1232.

46. *C. Augusta*, G. Taylor & **R. Deardon** (2019) "Dynamic contact networks of swine movement in Manitoba, Canada: characterization and implications for infectious disease spread" in *Trans-boundary and Emerging Diseases*, 66(6), 1910 - 1919. DOI: https://doi.org/10.1111/tbed.13220.

- 45. **G. Pokharel**, **R. Deardon**, C. Barnabe, V. Bykerk, S. Bartlett, L. Bessette, G. Boire, C. Hitchon, E. Keystone, J. Pope, O. Schieer, D. Tin, C.Thorne & G. Hazelwood (2019) "Joint estimation of remission and response for methotrexate-based DMARD options in rheumatoid arthritis: A bivariate network meta-analysis" in *ACR Open Rheumatology*, 1(8), 471-479. https://onlinelibrary.wiley.com/doi/epdf/10.1002/acr2.11052.
- 44. *M. Lowerison*, C. Josephson, N. Jette, T. Sajobi, S. Patten, T. Williamson, **R. Deardon**, H. Barkema, & S. Wiebe (2019) "Association of levels of specialized care with risk of premature mortality in patients with epilepsy" in *JAMA Neurology*, 76(11), 1352-1358. DOI: https://doi.org/10.1001/jamaneurol.2019.2268
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- 37. **R. Romanescu** & **R. Deardon** (2017) "Fast inference for network models of infectious disease spread" in the *Scandinavian Journal of Statistics*, 44(3), 666-683 (DOI: 10.1111/sjos.12270).
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- 33. **R. Malik**, **R. Deardon** & **G.P.S. Kwong** (2016) "Parameterizing spatial models of infectious disease spread using sampling-based likelihood approximations" in *PLoS One*, 11(1): e0146253. doi: 10.1371/journal.pone.0146253.

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- 31. **R. Deardon**, *X. Fang* & *G.P.S. Kwong* (2015) "Statistical modelling of spatio-temporal infectious disease transmission" in *Analyzing and Modeling Spatial and Temporal Dynamics of Infectious Diseases*, 211-232, John Wiley & Sons. (Ed: D. Chen, B. Moulin, J. Wu).
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- 29. **R. Malik**, **R. Deardon**, **G.P.S. Kwong** & B. J. Cowling (2014) "Individual-level modeling of the spread of influenza within households" in *Journal of Applied Statistics*, 41(7), 1578-1592.
- 28. G. Pokharel & R. Deardon (2014) "Supervised learning and prediction of spatial epidemics" in Spatial & Spatio-Temporal Epidemiology, 11, 59-77.
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- 24. T. Agvar, R. Deardon & J. Fryxyll (2013) "An empirically parameterized individual based model of animal movement, perception and memory" in *Ecological Modelling*, 251: 158-172.
- 23. K. Bottoms, Z. Poljak, C. Dewey, **R. Deardon**, D. Holtkamp & R. Friendship (2013) "Evaluation of external biosecurity practices on southern Ontario farms" in *Preventive Veterinary Medicine*, 109(1-2):58-68.
- 22. *G.P.S. Kwong*, Z. Poljak, **R. Deardon** & C. Dewey (2013) "Bayesian analysis of risk factors for infection with a genotype of porcine reproductive and respiratory syndrome virus in Ontario swine herds using monitoring data" in *Preventive Veterinary Medicine*, 110(3-4):405-17.
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- 7. M. J. Tildesley, **R. Deardon**, N. J. Savill, P. Bessell, S. P Brooks, M. E. J. Woolhouse, B. T. Grenfell & M. J. Keeling (2008) "Accuracy of models for the 2001 foot-and-mouth disease epidemic" in *Proceedings of the Royal Society B*, 275(1641), 1459-1468. (Funded by: Wellcome Trust, UK).
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- A. Ogilvy, S. Collins, W. Hare, M. Hilts, T. Tuokko, **R. Deardon** & A. Jirasek. "Optimization of solid tank design for fan-beam optical CT based 3D radiation dosimetry." Submitted to the International Conference on 3D and Advanced Dosimetry (IC3DDose), Quebec City, Canada.
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