Publication List

(Research Group Members Shown in Italics)

Submitted Articles

102. ***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

101. ***Y. Zhang***, **R. Deardon** & L. Deeth "Behavioural change model choice in spatial epidemic models" submitted to *Bayesian Analysis*.

100. ***Y. Mao***, **R. Deardon** & L. Deeth "Memory mechanisms for behavioural change in Bayesian individual level spatial epidemic models" submitted to *Infectious Disease Modelling*

99. ***Y. Zhang***, **R. Deardon** & L. Deeth "Composite method for fast computation of individual level spatial epidemic models" submitted to *Spatial Statistics*.

98. ***J. Peitsch***, G. Pokharel & **R. Deardon** "Directionally-dependent spatial epidemic models" submitted to *Spatial Statistics*.

97. 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* (revision requested).

96. ***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).

95. ***R. Li***, **R. Deardon**, N. Li, J. Conly & J. Leal "Bayesian compartmental modelling of the transmission dynamics of methicillin-resistant *Staphylococcus aureus* (MRSA) within hospitals in Edmonton, Canada" submitted to the *Canadian Journal of Statistics*.

94. ***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).

93. ***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).

92. L. G. Salazar, H. McKenzie, **R. Deardon**, K. Pepin, R. Brook, J. Bahamon, C. Neva & M. Pruvot "Interaction risk between wild pigs and livestock: implications for infectious disease transmission in Alberta, Canada" submitted to *Preventive Veterinary Medicine*.

91. R. Tyson, B. Baumgaertner, J. Heffernan, B. Nasri, A. Aghaeeyan, J. Arino, C. Bauch, B. Beckage, J. Bélair, D. Cardenas, M. Caron-Diotte, M. Cojocaru, D. Coombs, **R. Deardon**, M. Delehanty, E. Foxall, L. French Bourgeois, T. Garstka, P. (C.) Greenwood, L. Gross, E. Lacourse, F. Laliberté, H. Martin, L. McConnell-Soong, I. Moyles, M. Pelletier-Dumas, L. Pujo-Menjouet, M. M. Rahman, G. Ranson, C. Saad-Roy, D. Sarathchandra, E. Schwartz, C. Tovissode, M. (B.) Varughese, ***M. Ward***, D. Woodman, R. de la Sablonnière, G. Adu-Boahen, F. Agusto, B. Ashby, M. Baky Haskuee, A. Bizyaeva, L. Childs, H. K. Das, R. Dogra, K. Garain, J. Glasser, A. Greer, B. Jafari, K. Lacasse, S. Lenhart, J. Li, S. Machado-Marques, M. Martignoni, H. J. B. Njagarah, C. O'Connor, M. Ordorica Arango, M. Papagelis, P. Ramazi, K. Reynolds, G. Rost, S. Sadhu, C. Sims, S. Smith?, R. Spiteri, J. Stockdale, J.

Velasco-Hernandez, J. Watmough, W. A. Woldegerima, S. Yanushkevich, E. Yedomonhan & H. Zhu "Why Behaviour Matters, How it Manifests, and What it Means for Disease-Behaviour Modelling of Infectious Diseases."

Accepted/In Press

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" to appear in *International Journal of Cancer*.

89. 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

88. ***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

87. ***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

86. ***C. Rahul*** & **R. Deardon** (2025) "Behavioural change piecewise constant spatial epidemic models" in *Infectious Disease Modelling*, 10(1), 302-324. https://doi.org/10.1016/j.idm.2024.10.006

85. ***T. Akter*** & **R. Deardon** "Variable screening methods in conditional logistic individual level models of disease spread" in *Spatial & Spatiotemporal Epidemiology*, 54, 100742. https://doi.org/10.1016/j.sste.2025.100742

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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

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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

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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

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69. ***B. Jafari*** & **R. Deardon** (2022) "Bias and Bias-Correction for Individual-Level Models of Infectious Disease" in *Spatial & Spatiotemporal Epidemiology*, 43, 100524.

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

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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

66. ***L. Amiri***, M. Torabi, **R. Deardon** & M. Pickles (2021). "Spatial modeling of individual-level infectious disease transmission: tuberculosis data in Manitoba, Canada" in *Statistics in Medicine*, 40(7), 1678-1704. https://doi.org/10.1002/sim.8863

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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

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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

59. C. Doolan, T. Louie, C. Lata, O. Larios, W. Stokes, J. Kim, K. Brown, P. Beck, **R. Deardon** & D. Pillai (2021) "Latent class analysis for the diagnosis of Clostridioides difficile infection" in *Clinical Infectious Diseases*, 73(9):e2673-e2679. https://doi.org/10.1093/cid/ciaa1553

58. B. Singh, M. Ward, ***M. Lowerison***, R. Lewinson, I. Vallerand, **R. Deardon**, J. Gill, B. Singh & H. Barkema (2021) "Meta-analysis and adjusted estimation of COVID-19 case fatality risk in India and its association with the underlying comorbidities" in *One Health*, 13:100283. https://doi.org/10.1016/j.onehlt.2021.100283.

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57. ***W. Almutiry*** & **R. Deardon** (2020) "Incorporating contact network uncertainty in individual level models of infectious disease using approximate Bayesian computation" in *The International Journal of Biostatistics*, 16(1), Article 20170092. DOI: https://doi.org/10.1515/ijb-2017-0092

56. ***V. Warriyar***, ***W. Almutiry*** & **R. Deardon** (2020) "Individual level modelling of infectious disease data: EpiILM" in *The R Journal* 12(1), 199-217.

55. G. Hazelwood, ***G. Pokharel***, **R. Deardon**, D. Marshall, C. Bombardier, G. Tomlinson, C. Ma, C. Seow, R. Panaccione & G. Kaplan (2020) "Patient preferences for maintenance therapy in Crohn's disease: a discrete-choice experiment" in *PLoS One*, 15(1):e0227635.

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

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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

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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

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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.

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40. ***G. Pokharel*** & **R. Deardon** (2018) "Spatially informed back-calculation for spatio-temporal infectious disease models" in *Statistical Communications in Infectious Diseases*, Vol. 10(1), Article 2.

39. M. Lipson, **R. Deardon**, N. Switzer, C. DeGara, C. Ball & S. Grondin (2018) "Practice and attitudes regarding double gloving among staff surgeons and surgical trainees" in the *Canadian Journal of Surgery*, 61(4), 244-250.

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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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35. ***R. Romanescu*** & **R. Deardon** (2016) "Modelling two strains of disease via aggregate-level infectivity curves" in the *Journal of Mathematical Biology*, 72(5), 1195-1224.

34. ***L. Deeth*** & **R. Deardon** (2016) "Spatial data aggregation for spatio-temporal individual-level models of infectious disease transmission" in *Spatial & Spatio-temporal Epidemiology*, 17, 95-104.

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 tranmission" 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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12. **R. Deardon**, S. P. Brooks, B. T. Grenfell, M. J. Keeling, M. J. Tildesley, N. J. Savill, D. J. Shaw & M. E. J. Woolhouse (2010), "Inference for individual-level models of infectious diseases in large populations" in *Statistica Sinica*, 20(1), 239-261. (Funded by: Wellcome Trust, UK).

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