Publication List

(Research Group Members Shown in Italics)

Submitted Articles

- 95. *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 *Biostatistics*. https://arxiv.org/abs/2503.00982
- 94. Y. Zhang, R. Deardon & L. Deeth "Composite spatial epidemic models" submitted to Biometrics
- 93. **T.** Akter & R. Deardon "Variable screening methods in conditional logistic individual level models of disease spread" submitted to Spatial & Spatiotemporal Epidemiology (revision requested).
- 92. *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*.
- 91. **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
- 90. **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
- 89. 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

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

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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
- 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
- 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
- 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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- 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.
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- 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.

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- 43. S. Coward, F. Clement, E. Benchimol, C. Bernstein, J. Antonio Avina-Zubieta, A. Bitton, M. Carroll, G. Hazelwood, K. Jacobson, S. Jelinski, R. Deardon, J. Jones, M. Ellen Kuenzig, D. Leddin, K. McBrien, S. Murphy, G. Nguyen, A. Otley, R. Pannaccione, A. Rezaie, G. Rosenfeld, J. Pena-Sanchez, H. Singh, L. Targownik, G. Kaplan (2019) "Past and future burden of inflammatory bowel diseases based on modeling of population-based data" in Gastroenterology, 156(5), 1345-1353.
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- 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.
- 38. D. Toms, **R. Deardon** & M. Ungrin (2017) "Climbing the mountain: Experimental design for efficient optimization of stem cell bioprocessing" in the *Journal of Biological Engineering*, Vol. 11, No. 1
- 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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30. T. J. McKinley, J. Ross, **R. Deardon** & A. Cook (2014) "Simulation-based Bayesian inference for epidemic models" in *Computational Statistics & Data Analysis*, 71, 434-447.

- 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.
- 27. L. Deeth & R. Deardon (2013) "Latent conditional individual level models for infectious disease modelling" in *The International Journal of Biostatistics*, 9(1), 75-93.
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- 25. *N. Bifolchi*, R. Deardon & Z. Feng (2013) "Spatial approximations of network-based individual level infectious disease models" in *Spatial & Spatio-temporal Epidemiology*, 6, 59-70.
- 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.
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- 21. K. Bottoms, Z. Poljak, B. Friendship, J. Alsop, **R. Deardon** & C. Dewey (2013) "An assessment of external biosecurity on southern Ontario swine farms, and its application to surveillance on a geographic level" in the *Canadian Journal of Veterinary Research*, 77(4), 241 253.
- 20. *I.Vrbik*, R. Deardon, Z. Feng, *A. Gardner* & J. Braun (2012) "Using individual-level models to model the spatio-temporal dynamics of combustion" in *Bayesian Analysis*, 7(3), 615 638. (Funded by: NSERC).
- 19. **G.P.S. Kwong & R. Deardon** (2012) "Linearized forms of individual-level models for large-scale spatial infectious disease systems" in *Bulletin of Mathematical Biology*, 74(8), 1912 37. (Funded by: NSERC, OMAFRA).
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- 17. R. Deardon, B. Habibzadeh & H. Y. Chung (2012) "Spatial measurement error in infectious disease models" in Journal of Applied Statistics, 39(5), 1139 1150. (Funded by: NSERC).
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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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- 4. M. J. Tildesley, N. J. Savill, D. J. Shaw, **R. Deardon**, S. P. Brooks, M. E. J. Woolhouse, B. T. Grenfell & M. J. Keeling (2006), "Optimal reactive vaccination strategies for an outbreak of foot-and-mouth disease in Great Britain" in *Nature*, 440, 1080, 83-86. (Funded by: Wellcome Trust, UK).
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1. P.E. Caines, **R. Deardon** & H. P. Wynn (2002) "Conditional Orthogonality and Conditional Stochastic Realization" in *New Directions in Mathematical Systems Theory and Optimization*, Springer.

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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.
- M. Aghajanpoorpasha & R. Deardon (2019) "On Minimum Cost Non-Uniform Sampling Schemes for Optimal Design of Control Charts: Application to \overline{X} and T^2 Control Charts" Fourth North American International Conference on Industrial Engineering and Operations Management (IEOM).
- P.E. Caines, **R. Deardon** & H. P. Wynn (2002) "Conditional independence and general factorisations in times series graphical models" in the 2002 Proceedings of the American Statistical Association, Physical and Engineering Sciences Section [CD-ROM], Alexandria, VA: American Statistical Association.

Published Letters

- M. J. Keeling, M. J. Tildesley, N. J. Savill, M. E. J. Woolhouse, D. J. Shaw, R. Deardon, S. P. Brooks, & B. T. Grenfell (2007), "Veterinary epidemiology: Vaccination strategies for foot-and-mouth disease" (reply to Brief Communication Arising by Kitching et al.) in *Nature*, 445, E12-E13, 8 February 2007.
- M. J. Keeling, M. J. Tildesley, N. J. Savill, M. E. J. Woolhouse, D. J. Shaw, **R. Deardon**, S. P. Brooks, & B. T. Grenfell (2006), response to letter, "FMD control strategies" by Wingfield, Miller & Honhold in *The Veterinary Record*, May 20, 2006. (Funded by: Wellcome Trust, UK).

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