# Korryn Bodner

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## CURRENT EMPLOYMENT

*2021 - Present*     **Senior Research Associate**
*MAP Centre for Urban Health Solutions, St.Michael's Hospital, Unity Health Toronto*
PI: Sharmistha Mishra

## EDUCATION

*2016 - 2021*     **PhD, Ecology and Evolutionary Biology**
*University of Toronto*
Advisors: Péter K. Molnár & Marie-Josée Fortin
Dissertation Title: Parasitism, Predation & Prediction: Modelling Variations in Ecological Interactions from Mechanisms to Networks

*Summer 2018*     **Visiting Postgraduate Researcher at the School of Mathematics and Statistics**
*University of Glasgow*
Hosting PI: Christina Cobbold

*2011 - 2012*     **Master of Arts, Political Science**
*University of Toronto*
Specializations: Statistical Computing, Research Design & Econometrics

*2005 - 2010*     **Bachelor of Arts**
*University of British Columbia*
Specialization: Political Science

## OTHER EDUCATION

*2014 - 2016*     *University of Toronto*
General Coursework: Computer Science, Geography & Ecology

## PUBLICATIONS

**Bodner, K.**, M.A. Irvine, J.C. Kwong, S. Mishra. (2023). *Observed negative vaccine effectiveness could be the canary in the coal mine for biases in observational Covid-19 studies*. International Journal of Infectious Diseases 131:111-114.

Brimacombe, B., **K. Bodner**, M. Michalska-Smith, T. Poisot, M-J Fortin. (2023). *Shortcomings of reusing species interaction networks created by different sets of researchers*. PLoS biology 21(4): e3002068.

**Bodner, K.**, J. Knight, M.A. Hamilton, S. Mishra. (2023). *Testing if higher contact among vaccinated can be a mechanism for observed negative vaccine effectiveness*. American Journal of Epidemiology: kwad055.

Wu, S., Y. Li, S. Mishra, **K. Bodner**, S. Baral, J.C. Kwong, X. Wei. (2023) *Effect of the incremental protection of previous infection against Omicron infection among individuals with a hybrid of infection- and vaccine-induced immunity: a population-based cohort study in Canada.* International Journal of Infectious Diseases 127: 69-76.

Brimacombe, C., **K. Bodner**, M. Michalska-Smith, D. Gravel, M.-J. Fortin. (2022).*No strong evidence that modularity, specialization or nestedness are linked to seasonal climatic variability in bipartite networks*. Global Ecology and Biogeography 31(12): 2510-2523

**Bodner, K.**, C. Brimacombe, M.J. Fortin, P.K. Molnár. (2022). *Why body size matters: how larger fish ontogeny shapes ecological network structure.* Oikos 2022(3): e8569.

Brimacombe, C., **K. Bodner**, M.J. Fortin. (2022). *How network size strongly determines trophic specialisation: A technical comment on Luna et al. (2022).* Ecology Letters 25(8): 1914-1916

**Bodner, K.**[†], C. Rauen Firkowski[†], J. Bennett, C. Brookson, M. Dietze, S. Green, J. Hughes, J. Kerr, M. Kunegel-Lion, S. Leroux, E. McIntire, P.K. Molnár, C. Simpkins, E. Tekwa, A. Watts, M.-J. Fortin. (2021). *Bridging the divide between ecological forecasts and environmental decision-making.* Ecosphere 12(12): e03869.

**Bodner, K.**, C. Brimacombe, E.S. Chenery, A. Greiner, A.M. McLeod, S.R. Penk, J.S. Vargas Soto. (2021). *Ten Simple Rules for tackling your first mathematical models: A guide for graduate students by graduate students.* PLoS Computational Biology 17(1): e1008539.

Penk, S.R., **K. Bodner**, J.S. Vargas Soto, E.S. Chenery, A. Nascou, and P.K. Molnár. (2021). *Mechanistic models can reveal infection pathways from prevalence data: the mysterious case of polar bears Ursus maritimus and Trichinella nativa.* Oikos 130 (2) 197-210.

Krkošek M., M. Jarvis-Cross, K. Wadhawan, I. Berry, J.R. Soucy, **K. Bodner**, A. Greiner, L. Krichel, S. Penk, D. Shea, J.S. Vargas Soto, E. Tekwa, N. Mideo, P.K. Molnár. (2021). *Establishment, contagiousness, and initial spread of SARS-CoV-2 in Canada.* FACETS 6(1): 180-194.

Brimacombe, C., **K. Bodner**, and M.-J. Fortin. (2021). *Inferred seasonal interaction rewiring of a freshwater stream fish network.* Ecography 44(2): 219-230.

**Bodner, K.**, M.-J. Fortin, and P.K. Molnár. (2020). *Making predictive modelling ART: accurate, reliable, and transparent.* Ecosphere 11(6): e03160.

Boonstra, R.**, **K. Bodner****, C. Bosson, B. Delehanty, E.S. Richardson, N.J. Lunn, A.E. Derocher, and P.K. Molnár. (2020). *The stress of Arctic warming on polar bears.* Global Change Biology 26(8): 4197-4214.

[†] first co-author        ** senior co-author

## TECHNICAL REPORTS

Evaluation of COVID-19 vaccine effectiveness in a changing landscape of COVID-19 epidemiology and vaccination: Second addendum to Evaluation of COVID-19 vaccine effectiveness: Interim guidance. (October 2022). World Health Organization.

## MEDIA COVERAGE

Interview for SORTEE Open Science in Practice Postdoctoral Research Associate Award featured in PeerJblog on August 10, 2022.

"Higher contact among vaccinated can be a mechanism for negative vaccine effectiveness" pre-print featured in Reuters on May 12, 2022.

## GRANTS & FUNDING

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|---|---|
| 2023 | University of Toronto Data Sciences Institute - *Short Course on Forecasting for Decision-Making: An epidemiological and ecological perspective.* Co-Hosts: **K. Bodner**, C. Rauen Firkowski, M.-J. Fortin, and S. Mishra. $10,000 |
| 2022 | Fields Institute Award - *Short Course on Forecasting for Decision-Making: An epidemiological and ecological perspective.* PI/Host: **K. Bodner**; Co-Hosts: C. Rauen Firkowski, M.-J. Fortin, and S. Mishra. $15,000 |
| 2022 | Canadian Network for Modelling Infectious Diseases (CANMOD) Call for Training Initiative - *Short Course on Forecasting for Decision-Making: An epidemiological and ecological perspective.* PI/Host: **K. Bodner**; Co-Hosts: C. Rauen Firkowski and M.-J. Fortin; CANMOD co-applicant: S. Mishra,. $29,775 |
| 2020 | Canadian Institute of Ecology and Evolution (CIEE) Working Group - *Forecasting in the Anthropocene: Addressing uncertainty in complex-systems using theory, modelling and applied science.* Hosted by the University of Toronto. PI/Host: **K. Bodner**; Co-Hosts: C. Rauen Firkowski and M.-J. Fortin. $12,970 |

## HONOURS & AWARDS

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| 2022 | SORTEE Open Science in Practice Postdoctoral Research Associate Award | – |
| 2021 | Graduate Program Award in EEB | $1000 |
| 2020 | Doctoral Completion Award | $2800 |
| 2020 | Reino S. Freeman Fellowship | $2200 |
| 2019 | Doctoral Completion Award | $2200 |
| 2019 | Frederick P. Ide Graduate Award in EEB | $1300 |
| 2018 | GSSS Presentation Award winner (Winter term) | – |
| 2018 | Frederick P. Ide Graduate Award in EEB | $1300 |
| 2017 | NIMBioS Uncertainty Quantification Workshop Travel Award (Competitive) | $750 |
| 2017 | SGS Conference Grant | $500 |
| 2016 | BIO120's Outstanding Teaching Assistant Award | – |
| 2016 | Frederick P. Ide Graduate Award in EEB | $1500 |

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| *2012* | Dr. David Chu Scholarship in Asia Pacific Studies | $5200 |
| *2010* | Fred A. Krugel Memorial Prize in Modern German Literature | $100 |
| *2009* | Trek Excellence Scholarship for Continuing Students | $2000 |

## ORGANIZED MEETINGS & SYMPOSIUMS

*August 2022*    **Ecological Society of America (ESA)/ Canadian Institute of Ecology & Evolution (CIEE) Organized Oral Session**
*A comparative perspective on integrating ecological forecasting with decision-making.* Oral session held at the 2022 ESA/CSEE Conference in Montréal, QC. Co-organized with C. Rauen Firkowski and M.-J. Fortin.

*2020 - 2021*    **Canadian Institute of Ecology & Evolution (CIEE) Working Group**
*Forecasting in the Anthropocene: Addressing uncertainty in complex-systems using theory, modelling and applied science.* Coordinated two virtual meetings (November 2020, June 2021). Main organizer; Co-organized with C. Rauen Firkowski and M.-J. Fortin.

*August 2019*    **Canadian Society for Ecology & Evolution (CSEE) Symposium**
*Prediction in the Anthropocene: Uncertainty in complex-systems using theory and applied science to inform policy.* Symposium held at the 2019 CSEE Conference in Fredericton, NB. Co-chaired with C. Rauen Firkowski.

*June 2018*    **Connaught Global Challenge Session**
*Connaught Global Challenge Graduate Student Brainstorming Session.* The session was part of the broader Connaught Global Challenge initiative that encompasses four working groups, a scholars program and a global symposium. Meeting was held in Toronto, ON at the University of Toronto.

## CONFERENCE PRESENTATIONS & ACTIVITIES

*June 2023*    **Bodner, K**. Discussion Leader for *Complexity, Stochasticity, and Limits to Predictive Ability* at the Predictive Ecology, Gordon Conference in Easton, MA, USA.

*August 2022*    **Bodner, K**, C.Rauen Firkowski, J. Bennett, C. Brookson, M. Dietze, S. Green, J. Hughes, J. Kerr, M. Kunegel-Lion, S. Leroux, E. McIntire, P.K. Molnár, C. Simpkins, E. Tekwa, A. Watts, M.-J. Fortin. *Guidelines for bridging the divide between ecological forecasts and decision-making.* Presented at the Ecological Society of America - Canadian Society for Ecology and Evolutionary Biology Joint Conference in Montréal, QC.

*August 2022*    **Bodner, K**, C. Brimacombe, M.-J. Fortin. *Comparisons of open networks across space require established best practices: This is the way.* Presented at the Ecological Society of America - Canadian Society for Ecology and Evolutionary Biology Joint Conference in Montréal, QC.

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| *August 2019* | **Bodner, K**, S.H. Paull, P.T. Johnson, M.-J. Fortin, C.A. Cobbold, P.K. Molnár. *Parasites and the Goldilocks Principle: How temperature and host stage interact to make conditions "just right" for Ribeiroia ondatrae.* Presented at the Canadian Society for Ecology and Evolution Conference in Fredericton, NB. |
| *May 2017* | **Bodner, K**, M.-J. Fortin, and P.K. Molnár. *Prediction: What is it, Why do we do it and How to do it Better?* Presented at the Canadian Society for Ecology and Evolution Conference in Victoria, BC. |

## INVITED TALKS

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| *Sept. 2023* | *Selection Bias.* Improving Vaccine Effectiveness Studies: A vital step before the next pandemic. World Health Organization R&D Blueprint. |
| *Jul. 2023* | *Improving the Modelling and Management of Emerging Infectious Diseases.* Departmental Seminar. Department of Population Medicine, University of Guelph. |
| *Feb. 2023* | *How biases related to contact and testing behaviours can produce observed negative vaccine effectiveness.* Seminar Series. Department of Biology, Carleton University. |
| *Sept. 2022* | *Higher contact among vaccinated can be a mechanism for negative vaccine effectiveness.* The Canadian Network for Modelling Infectious Diseases September 2022 General Meeting. |
| *Jul. 2022* | *Why transparency is key to practicing Open Science.* Society for Open, Reliable, and Transparent Ecology and Evolutionary Biology (SORTEE) Conference. |
| *Jun. 2022* | *Understanding the gap between evidence/research and policy decisions.* Community Connect Meeting (for Long Term Care). Wellness Hub, Knowledge Translation Program. Co-presenter: M.A. Hamilton. |

## TEACHING EXPERIENCE

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| *June 2023*<br>*Feb. 2022* | **Guest Lecturer**<br>*Institute of Health Policy, Management and Evaluation, University of Toronto*<br>• Lecture titled "Integrating Forecasting with Decision-making for the course Advanced Methods in Economic Evaluation". |
| *Nov. 2021* | **Guest Lecturer**<br>*Department of Biological Sciences, University of Toronto Scarborough*<br>• Lecture titled "Predictive Modelling in Ecology: How to maximize accuracy, reliability and utility for the course Models in Ecology, Epidemiology and Conservation". |
| *2016, 2017,*<br>*2019* | **Teaching Assistant**(Adaptation and Biodiversity; Biostatistics)<br>*University of Toronto* |

*2018, 2019*        **Lead Teaching Assistant** (Biostatistics)
                    *University of Toronto*

*2012, 2015*        **Statistics and Coding Tutor**

**RECENT SERVICE**

**Grant reviewer for**: *Emerging and Pandemic Infections Consortium (EPIC), University of Toronto*

**Journal reviewer for**: *Diversity and Distributions; Global Ecology and Biogeography; International Journal of Epidemiology; Lancet Infectious Diseases; Nature Communications; PeerJ*

*May 2022*     **Poster Judge**
*Institute of Medical Science (IMS), University of Toronto*

*2021 - 2022*     **Observer and Consultant**
*Math for Public Health (MfPH) Initiative at York University*
- Assisted with the development of SARS-CoV-2 outbreak scenarios for a disaster and emergency management exercise led by the Asgary Lab at York University.

*2017 - 2019*     **Lead Coordinator**
*Disease Group at the University of Toronto*

*Winter 2019*     **Working Group Participant**
*Faculty of Arts & Science Working Group at the University of Toronto*
- Title: *Student Experience: Graduate Working Group*

*2019;*     **Mentor**
*2016 - 2017*     *Women in Science and Engineering (WISE)*


**MEMBERSHIPS**

*2022 - 2023*     Society for Open, Reliable, and Transparent Ecology and Evolutionary Biology (SORTEE)

*2017 - 2022*     Canadian Society of Ecology and Evolution (CSEE)