

DYLAN SHEA

Postdoctoral Researcher

NORCE

Climate and Environment Department

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Education

Sept. 2015 — Oct. 2021: PhD, University of Toronto
Advisors: Dr. Martin Krkosek and Dr. Steven Short

Sept. 2009 — Dec. 2013: BSc., *with Distinction*, Simon Fraser University
Project Supervisor: Dr. Carl Lowenberger

Publications

Start D., Kirk D., **Shea D.**, Gilbert B. (2017). Cannibalism by damselflies increases with rising temperatures. *Biology Letters*. 13(5): 20170175.

Kirk D., **Shea D.**, Start D. (2019) Host traits and competitive ability jointly structure disease dynamics and community assembly. *Journal of Animal Ecology*. 88(9): 1379-1391.

Zukowski N., Kirk D., Wadhawan K., **Shea D.**, Start D., Krkosek M. (2020). Predators can influence the host-parasite dynamics of their prey via non-consumptive effects. *Ecology and Evolution*. 10(13): 6714-6722.

Shea D., Bateman A., Li S., Tabata A., Ogsten L., Volpe J P., Frazer N., Connors B., Miller K., Short S., Krkosek M. (2020) Environmental DNA (eDNA) from multiple pathogens is elevated near active Atlantic salmon farms. (Accepted: *Proceedings of the Royal Society: B*).

Krkošek, M., M. Jarvis-Cross, K. Wadhawan, I. Berry, J. P. R. Soucy, K. Bodner, A. Greiner, L. Krichel, S. Penk, **D. Shea**, J. S. Vargas Soto, E. W. Tekwa, N. Mideo, and P. K. Molnár. 2021.

Establishment, contagiousness, and initial spread of SARS-CoV-2 in Canada. *Facets* 6:180–194.
Palermo, C. N., **D. Shea**, and S. M. Short. 2021. Analysis of Different Size Fractions Provides a More Complete Perspective of Viral Diversity in a Freshwater Embayment. *Applied and Environmental Microbiology* 87:1–15.

Shea, D., Frazer, N., Wadhawan, K., Bateman, A. W., Li, S., Miller, K. M., Short, S. M., & Krkošek, M. (2022). Environmental DNA dispersal from Atlantic salmon farms. *Canadian Journal of Fisheries and Aquatic Sciences*, 1–37. <https://doi.org/10.1139/cjfas-2021-0216>.

Scholarships and Awards

2020 Ontario Graduate Scholarship (OGS) (\$15,000)

2019 Frederick P. Ide Graduate Award in Ecology and Evolution (\$2600)

2018 David Suzuki Foundation Project Grant (\$20,000)

2017 Reino S. Freeman Fellowship (\$3350)

- 2016 Freeman Fellowship (**\$1800**)
- 2016 Archibald G. Huntsman Graduate Scholarship (**\$450**)
- 2013 Graduating with Distinction, Simon Fraser University
Awarded for achieving a cumulative average of 3.5 (B+) cumulative GPA
- 2013 President's Honour Roll, Simon Fraser University
Awarded for achieving a 4.0 (A) GPA
- 2012 Dean's Honour Roll, Simon Fraser University
Awarded for achieving a 3.5 (B+) GPA
- 2011 Dean's Honour Roll, Simon Fraser University
Awarded for achieving a 3.5 (B+) GPA
- 2009 Dogwood Scholarship, BC Ministry of Education (**\$1250**)

Contributed Presentations

2022 HAVExpo. Bergen, Norway.
Title: *Assessing seasonal and salmon farm production-specific variation in pathogen profiles in Western Norwegian fjords using environmental DNA surveillance*
Contributed talk

2019 Atwood Colloquium. Toronto, Ontario.
Title: *Spatial patterns and drivers of pathogen spread in a coastal ecosystem.*
Contributed talk

2018 Salish Seas Ecosystem Conference. Seattle, WA.
Title: *Evaluating environmental pathogen abundance in relation to Atlantic salmon farms*
Contributed talk

2018 International Symposium on Aquatic Animal Health. Charlottetown, PEI.
Title: *Assessing Environmental Microparasites in Relation to Atlantic Salmon Farms*
Contributed talk

2017 Canadian Society of Ecology and Evolution Conference. University of Victoria.
Title: *Environmental Pathogen Transmission Between Farmed and Wild Salmon Populations*
Contributed talk

2016 Evolution and Ecology of Infectious Disease Conference, Cornell University.
Title: *Environmental Pathogen Transmission Between Farmed and Wild Salmon Populations*
Contributed poster

Academic Service

i. Professional Service

- 2015-Present Co-organizer of a Collaborative Disease Research Group
- 2016-2020 Member - Canadian Society for Ecology and Evolution
- 2017 Session Organizer at Salish Seas Ecosystem Conference
- 2017 Reviewer at Ecology and Evolution

ii. Departmental Service

- 2017-2019 Member - Graduate Student Mental Health Committee

- 2017 Member - Graduate Student Panel at Undergraduate Information Session
2015-2016 Member – Atwood Selection Committee

iii. *Mentoring*

- 2018-2019 Supervised one undergraduate Research Opportunity Project (ROP) molecular biology study
2017 Supervised two undergraduate Research Opportunity Projects (ROP) field research projects

Volunteer and Teaching Experience

- 2020 University of Toronto: BIO 120 – Adaptation and Biodiversity
2019 University of Toronto, Mississauga: BIO 206 – Introductory Cell and Molecular Biology
2017 University of Toronto, Mississauga: BIO 206 – Introductory Cell and Molecular Biology
2016 University of Toronto, Mississauga: BIO 206 – Introductory Cell and Molecular Biology
2015 University of Toronto: BIO 120 – Adaptation and Biodiversity
2013 Centennial Secondary School: Tutor for ESL and learning-disabled students in English and Mathematics
2012 Kleider Equine Veterinary Clinic: Volunteer: Assisted with equine medical procedures as well as pre- and post-operative care and clinic maintenance
2011 Kingsway Veterinary Clinic: Volunteer: Assisted with canine and feline medical procedures as well as pre- and post-operative care and clinic maintenance

Skills and Certifications

i. *Relevant Skills*

- Marine Navigation and Boat Operation
- Nucleic Acid (DNA/RNA) Extraction
- PCR and quantitative PCR (qPCR)
- Microfluidics high-throughput qPCR
- Agarose Gel Electrophoresis
- Plating Techniques
- Plasmid Cloning
- Sanger Sequencing
- Bioinformatics on Sanger and Next-Gen Sequence Data
- Data Analysis in R

ii. *Certifications*

- Small Vessel Operator Proficiency (SVOP) commercial boat license
- VHF Marine Radio Operator Certificate (ROCM)
- Marine Emergency Duties (MEDA3) Safety Training
- Marine Basic First Aid (MBFA)
- WHMIS Training Certification
- Laboratory Biosafety Certification
- Ethics and Regulations Animal Care Certification
- Class 5 (Full Vehicle License) Driver's License

References

Dr. Martin Krkosek; Associate Professor

University of Toronto, Department of Ecology and Evolutionary Biology, 25 Willcocks Street. Toronto, Ontario, M5S 3B2. **Email:** martin.krkosek [at] utoronto.ca; **Telephone:** (416) 978-3839

Dr. Steven Short; Associate Professor

University of Toronto, Mississauga, Department of Biology, 3359 Mississauga Road.

Mississauga, Ontario, L5L 1C6. **Email:** steven.short [at] utoronto.ca; **Telephone:** (905) 828-3996