Dr. Else K. Mikkelsen

Curriculum Vitae

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Education

2018–Dec. 2025 Ph.D. (Ecology & Evolutionary Biology)
University of Toronto, Canada
Advisor: Dr. Jason Weir

2014–2018 B.Sc. Honours (Biology) Wesbrook Scholar
University of British Columbia, Canada
Advisor: Dr. Darren Irwin

Research Overview

My research uses genomic sequencing to unravel the evolutionary histories of birds. I have focused on young species groups (Stercorariidae, *Lepidothrix*, and *Ceratopipra*) to assess the role of hybridization in the speciation process and study the evolution of reproductive isolation. I work at multiple scales, from population genomics to phylogenomics and biogeography to comparative genomics.

Publications

Mikkelsen, E., Lavareda, D., Vallinoto, M., Aleixo, A., & Weir, J. 2025. Phylogeography of the Red-headed Manakin supports the river-refuge hypothesis. Journal of Biogeography. 52: 92-107. https://doi.org/10.1111/jbi.15022

Mikkelsen, E. K. & Weir, J. 2023. Phylogenomics Reveals that Mitochondrial Introgression with Limited Nuclear Introgression Characterizes Skua Species Proposed to be of Hybrid Origin. Systematic Biology. 72: 78-91. https://doi.org/10.1093/sysbio/syac078

de Zwaan, D., Mackenzie, J., **Mikkelsen, E. K.**, Wood, C., & Wang, S. 2022. Pleiotropic opposing dominance within a color gene block contributes to a nascent species boundary via its influence on hybrid male territorial behavior. PNAS Nexus. 1:pgac074. https://doi.org/10.1093/pnasnexus/pgac074

Mikkelsen, E. K. & Irwin, D. 2021. Ongoing production of low-fitness hybrids limits range overlap between divergent cryptic species. Molecular Ecology. 30:4090-4102. https://doi.org/10.1111/mec.16015

Bemmels, J. B., **Mikkelsen, E. K.**, Haddrath, O., Colbourne, R. M., Robertson, H. A. & Weir, J. 2021. Demographic decline and lineage-specific adaptations characterize New Zealand kiwi. Proceedings of the Royal Society B. 288:20212362. https://doi.org/10.1098/rspb.2021.2362

Wang, S., Ore, M., **Mikkelsen, E. K.**, Lee-Yaw, J., Toews, D., Rohwer, S., & Irwin, D. 2021. Signatures of mitonuclear coevolution in a warbler species complex. Nature Communications. 12:4279. https://doi.org/10.1038/s41467-021-24586-8

Bemmels, J., Bramwell, A., Anderson, S., Luzuriaga-Aveiga, V., **Mikkelsen, E. K.**, & Weir, J. 2021. Geographic contact drives genomic character displacement and increased reproductive isolation

in two cryptic *Empidonax* flycatcher. Molecular Ecology. 30:4833–4844. https://doi.org/10.1111/mec.16105

Mikkelsen, E. K. & Weir, J. 2020. The genome of the Xingu scale-backed antbird (*Willisornis vidua nigrigula*) reveals lineage-specific adaptations. Genomics. 112:4552-4560. doi: https://doi.org/10.1016/j.ygeno.2020.07.047

Cronemberger, Á. A., Aleixo, A., **Mikkelsen, E. K**. and Weir, J. T. 2020. Postzygotic isolation drives genomic speciation between highly cryptic *Hypocnemis* antbirds from Amazonia. Evolution. 74:2512-2525. https://doi.org/10.1111/evo.14103

Research Grants & Fellowships

2022	Queen Elizabeth II Graduate Scholarship	$15,000
2020	CanSeq150 Genome Sequencing Grant	$1800
2019	NSERC CGS-D	$105,000
2018	NSERC CGS-M	$17,500
2018	Hesse Research Award	$2980
2018	NSERC Undergraduate Student Research Award	$6000
2017	NSERC Undergraduate Student Research Award	$6000

Awards

2024	Peter Abrams Prize for sustained research excellence	$1500
2024	Canadian Society of Ecology & Evolution Excellence in Doctoral Research Award	$600
2024	UTSC Graduate Student Research Award	$1000
2023	Best Presentation Award, University of Toronto Graduate Student Seminar Series	$100
2021	Best Poster Award, Society of Canadian Ornithologists	$300
2021	Top Presentation Award, Ontario Ecology, Ethology, and Evolution Conference	$100
2018	Wesbrook Scholar	$1000
2018	HSBC Emerging Leader Scholarship	$5000
2017	Margaret E. Barr Scholarship in Biology and Botany	$5050
2017	Trek Excellence Scholarship	$1500
2017	Mary Ellen Narod Memorial Scholarship in Biology	$2000
2016	David Maw scholarship	$600
2016	Trek Excellence Scholarship	$1500
2016	Andrew H. Hutchinson Scholarship in Biology and Botany	$1400
2016	J. Fred Muir Memorial Scholarship in Science	$400
2015	Jean Davidson Arnold Memorial Prize for top standing in second-year botany	$50
2015	Fern Cochrane James Prize for top standing in first-year English	$250

Invited Talks

2024 **Mikkelsen, E.K.** & Weir, J. From the Arctic to the Amazon: the role of introgression in the evolutionary history of two clades of birds. Canadian Society for Ecology and Evolution (CSEE) Conference. Vancouver, Canada.

2023 **Mikkelsen, E.K.** & Weir, J. The role of hybridization in the evolutionary history of an Amazonian songbird. Canadian Society for Ecology and Evolution (CSEE) Conference. Winnipeg, Canada.

Presentations

2025 **Mikkelsen, E.K.** & Weir, J. The genomic landscape of speciation in an Amazonian songbird. European Society for Evolutionary Biology (ESEB) Conference. Barcelona, Spain.

2025 **Mikkelsen, E.K.** & Weir, J. Speciation and phylogeography of *Ceratopipra* manakins across the Amazon basin. Canadian Society of Ecology & Evolution (CSEE) Conference. Sherbrooke, Canada.

2025 **Mikkelsen, E.K.** & Weir, J. Speciation genomics of manakins in the Amazon rainforest. Evolution Conference. Virtual.

2025 **Mikkelsen, E.K.** & Weir, J. The impact of reference genome bias on population genomic analyses. Royal Ontario Museum Population Genomics Symposium. Toronto, Canada.

2025 **Mikkelsen, E.K.** & Weir, J. Speciation genomics of manakins in the Amazon rainforest. UTSC Biological Sciences Graduate Student Seminar Series, Toronto, Canada.

2023 **Mikkelsen, E.K.** & Weir, J. Speciation genomics of *Lepidothrix* manakins in the Amazon rainforest. Great Lakes Annual Meeting of Evolutionary Genomics, Ithaca, New York.

2023 **Mikkelsen, E.K.** & Weir, J. The role of hybridization in the evolutionary history of an Amazonian songbird. University of Toronto Graduate Student Seminar Series, Toronto, Canada. (**Best Presentation Award**)

2023 **Mikkelsen, E. K.** & Weir, J**.** Phylogenomics of the Golden-crowned manakin, an Amazonian songbird proposed to be of hybrid origin. Society of Systematic Biologists Conference. Mexico City, Mexico.

2022 **Mikkelsen, E. K.** & Weir, J**.** Whole genome sequencing reveals the evolutionary history of an enigmatic seabird family. Atwood Colloquium. Toronto, Canada.

2021 **Mikkelsen, E. K.** & Weir, J**.** Hybridization and speciation of an Amazonian manakin. American Ornithological Society & Society of Canadian Ornithologists Conference. (**Best Poster Award**)

2021 **Mikkelsen, E. K.** & Irwin, D. Low hybrid fitness limits sympatry between cryptic songbird species. Canadian Society of Ecology & Evolution (CSEE) Conference. Virtual.

2021 **Mikkelsen, E. K.** & Weir, J. Whole genome sequencing reveals the evolutionary history of an enigmatic seabird family. Ontario Ecology, Ethology, and Evolution Conference. (**Top Presentation Award)**

2020 **Mikkelsen, E. K.** & Weir, J. Whole genome sequencing unveils the evolutionary history of an enigmatic seabird family, the Skuas and Jaegers. University of Toronto Graduate Student Seminar Series.

2020 **Mikkelsen, E. K.** & Weir, J. Whole-genome Sequencing Reveals Patterns of Introgression in the Skuas (Stercorariidae). North American Ornithological Congress. Virtual.

2020 **Mikkelsen, E. K.** & Weir, J. Whole-genome sequencing reveals the phylogenomic history of the skuas (Stercorariidae). Great Lakes Annual Meeting of Evolutionary Genomics. Virtual.

2018 **Mikkelsen, E. K.** & Irwin, D. Genomic Divergence of a Cryptic Songbird. International Ornithological Congress. Vancouver, Canada.

2017 **Mikkelsen, E. K.** & Wang, S. Hermit Song at Town's End: Song Dialects in a *Setophaga* Warbler Hybrid Zone. UBC Zoology Graduate Student Association Symposium. Vancouver, Canada. (**Best Poster Award)**

Teaching & Mentorship

Undergraduate thesis supervision: Supervised ten undergraduate honours thesis students in genomics
Teaching assistantships: BIOC15 (Genetics lab), BIOD48 (Ornithology), EEB458H (Evolutionary Quantitative Genetics, course development), BIOA02 (Introduction to Biology) (2019–2025)
Certifications: Foundations of Teaching in Higher Education Certificate (U of T TATP)

Selected Outreach

- Vice president, Keats Island Conservation Society. Roles include coordinating an ongoing biodiversity inventory, invasive species management projects, giving public presentations, and developing community outreach events (2023–present)
- Guest speaker for over 30 elementary school classrooms for topics in biology (2020–present)
- Designed and led bird- and nature-oriented interpretive tours for the International Ornithology Congress (2018), Canada 150 celebration (2017), and the International Ocean Offshore and Arctic Engineering Conference (2025).
- Public presentation "Making Sense of Bird Senses" at Vancouver Bird Week (2020)

Technical skills

- Computational: bash, R, awk, bioinformatics pipelines, data visualization, Certificate in Data Science (SciNet High Performance Computing Consortium)
- Laboratory: DNA extraction, DNA sequencing library preparation
- Field skills: bird capture and banding (scientific bird banding license), biodiversity inventories, behaviour trials, field trip coordination

Selected Field Experience

Biological expeditions
2024 *Pipra* field expedition: one month field expedition to the Amazon of Brazil collecting bird DNA samples, deposited to a Brazilian museum collection
2019 Expedición Aracnológica México: two-month field expedition to collect jumping spiders from the highlands of Mexico, resulting in the discovery of 24 species new to science, and specimens deposited to collections at the University of British Columbia and Universidad Nacional Autónoma de México.
Hummingbird Monitoring Network
2012–present: Hummingbird bander. Roles include leading a banding station, and training new volunteers how to safely handle, measure, and band hummingbirds for scientific research
Stanley Park Ecology Society
2011–2018 Bird Monitoring Program Coordinator. Roles include leading monthly bird surveys, training new volunteers, presenting to the public about birds, preparing outreach materials, and maintaining a mailing list of 600 recipients

Professional Service

- Reviewer for manuscripts in Nature, Proceedings of the Royal Society B, Ornithology, Evolution, Molecular Ecology, Heredity, Journal of Avian Biology, Zoological Journal of the Linnean Society, Zoological Research, & Journal of Biogeography
- Campus representative for Ecology & Evolutionary Biology Graduate Students Association (2023–2024)
- Coordinator for graduate student journal club (2023–2024)