

# Else K. Mikkelsen

PhD Candidate, University of Toronto

## *Curriculum Vitae*

---

Department of Ecology and Evolutionary Biology, University of Toronto, 1265 Military Trail. Toronto, ON, M1C 1A4 CANADA. Email: [else.mikkelsen@mail.utoronto.ca](mailto:else.mikkelsen@mail.utoronto.ca) Website: [elsemikkelsen.com](http://elsemikkelsen.com)

---

## Education

- 2018-        Ph.D. (Ecology & Evolutionary Biology)  
              University of Toronto, Canada  
              Advisor: Jason Weir
- 2014-2018 B.Sc. Honours (Biology)  
              University of British Columbia, Canada  
              Advisor: Darren Irwin  
              Wesbrook Scholar and Science Scholar designations

## Publications

### Published

- Mikkelsen, E. K.** & Weir, J. 2022. Phylogenomics Reveals that Mitochondrial Introgression with Limited Nuclear Introgression Characterizes Skua Species Proposed to be of Hybrid Origin. *Systematic Biology*. syac078. <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(3):pgac074. doi: <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. doi: <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(1965):20212362. doi: <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. doi: <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. doi: <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(6):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>

Under Review

**Mikkelsen, E.**, Lavareda, D., Vallinoto, M., Aleixo, A., & Weir, J. 2024. Phylogeography of the Red-headed Manakin supports the river-refuge hypothesis. Under review at *Journal of Biogeography*.

## 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

- 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)**

- 2015 **Mikkelsen, E. K.** Invited panelist at Research in Science Exhibition. Vancouver, Canada.  
 2014 **Mikkelsen, E. K.** Island invaders. Canada-wide Science Fair. Windsor, Ontario (Bronze medal)  
 2014 **Mikkelsen, E. K.** Island invaders. Greater Vancouver Regional Science Fair. Vancouver, Canada. (Gold medal)

## Grants and Awards

2024	Peter Abrams Prize for sustained research excellence	\$1500
2024	Canadian Society of Ecology & Evolution Excellence in Doctoral Research Award	\$600
2024	UTSC 60 <sup>th</sup> Anniversary Legacy Fund	\$6000
2023	Best Presentation Award, University of Toronto Graduate Student Seminar Series	\$100
2022	Queen Elizabeth II Graduate Scholarship	\$15,000
2021	Best Poster Award, Society of Canadian Ornithologists	\$300
2021	Top Presentation Award, Ontario Ecology, Ethology, and Evolution Conference	\$100
2020	CanSeq150 Genome Sequencing Grant	\$1800
2019	NSERC CGS-D	\$105,000
2018	NSERC CGS-M	\$17,500
2018	Wesbrook Scholar	\$1000
2018	HSBC Emerging Leader Scholarship	\$5000
2018	Hesse Research Award	\$2980
2018	NSERC Undergraduate Student Research Award	\$6000
2017	NSERC Undergraduate Student Research Award	\$6000
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 female in first-year English	\$250
2014	British Columbia Government Scholarship	\$1000
2014	Dean of Science Scholarship	\$2000
2014	Chancellor's Scholar Award for academic achievement	
2013	Doug Tarry Bird Study Award	
2013	BCIC Young Innovator Scholarship	\$2000
2012	Neighbourhood Small Grants: awarded to install a community wildlife garden	\$600

## Teaching and Outreach

### *Undergraduate Supervision, University of Toronto*

2019-2020 Supervised ten undergraduate honours thesis students. Developed a bioinformatics pipeline for the students to annotate and analyze a new genome sequence, met with students and guided them through troubleshooting, and organized and facilitated a weekly genomics journal club to for the students to develop critical thinking and familiarity with genomics techniques.

### *Teaching Assistant, University of Toronto*

2021,2022,2023 BIOC15 (Genetics): third-year genetics laboratory

2019, 2021 BIOA02 (Introduction to Biology): first-year biology laboratory  
2018, 2019, 2020, 2022, 2023 BIOD48 (Ornithology): led field trips and tutorials, taught bird identification

### ***Keats Island Conservation Society***

2023-present Vice president of the Keats Island Conservation Society.  
2017-present coordinator for an ongoing biodiversity inventory of Keats Island, BC, which currently has 3600 data points and 681 identified species  
2021-present coordinating a project to remove an invasive plant, Tansy Ragwort, from Keats Island  
2021-present developing educational outreach materials  
2021-2022 led a project to develop a map of Keats Island, BC as a community resource: mapped trails with GPS, communicated with stakeholders, and led graphic design

### ***Community Outreach***

2022-2023 provided guest lectures to 30 elementary school classrooms for topics in biology  
2020 public presentation “Making Sense of Bird Senses” at Vancouver Bird Week  
2020 classroom presentation “Adaptations” for elementary school classroom  
2018-2019 poster judge to provide feedback at two undergraduate research conferences  
2018 International Ornithology Congress Tour Guide: designed and led interpretive tours for conference attendants to experience British Columbian bird diversity, and raise proceeds for charity  
2017 biology mentor for two elementary school students in Vancouver, Canada  
2017 Canada BioBlitz 150: led public interpretive walks and surveys to collect data for a species inventory. Identified the first known specimen of *Pectinatella magnifica* in mainland British Columbia  
2014 delivered a biology field trip program “Birds, Beaks, and Beyond” at Iona Island Regional Park  
2013, 2014 ran a booth on urban birds for an annual community festival  
2013 biology classroom presentations on bird identification for elementary school students  
2012, 2014 led weekly interpretive stations and tours for visitors in Stanley Park, BC  
2012-2017 Creatures of the Night volunteer: provided hands-on interpretive activities for children and families about nocturnal wildlife, and recruited visitors to attend guided walks  
2012 volunteered to remove invasive English Ivy from Stanley Park, BC

## **Certifications**

Scientific Permit to Capture and Band Migratory Birds (hummingbird banding license), Government of Canada  
Certificate in Data Science, SciNet High Performance Computing Consortium, Toronto, Canada  
Boat Operator’s License

## **Other Research Experience**

### ***Research Assistant, University of Toronto***

2018-2019 Set up a genotyping-by-sequencing protocol and taught DNA sequencing library preparation to other graduate students.

### ***Bird Behaviour Researcher, University of British Columbia***

May-Aug 2018 Collaborated with a postdoc in the Schluter Lab at UBC to assess the relative contribution of birdsong and plumage differences for species discrimination in bird territorial defense. Designed decoys and carried out two months of field work locating target species and conducting behaviour trials

***Lab Technician, University of British Columbia***

2017-2018 Maintained experimental *Drosophila melanogaster* colonies for population genetics research in the Whitlock Lab at UBC

***Warbler Speciation Research Assistant***

2016-2017 Research assistant to a PhD student in the Irwin lab at UBC. Carried out three months of field work to locate and capture focal birds for blood sampling with mist nets, as well as re-sighting colour-banded birds, assisting in behaviour studies, and extracting DNA from blood and museum samples. I then designed and carried out an acoustic analysis study using RAVEN software

## **Field Experience**

***Biological expeditions***

2019 Expedición Aracnológica México 2019: member of a two-month field expedition to collect jumping spiders from the highlands of Mexico, resulting in the discovery of 24 species new to science.

***Hummingbird Monitoring Network***

2012-present: banded migratory hummingbirds for research on hummingbird migration, population trends, and physiology. Roles include leading the banding station, and training new volunteers how to safely handle, measure, and band hummingbirds.

***Stanley Park Ecology Society***

2011-2018 Bird Monitoring Program Coordinator: organized and led a group of volunteers to conduct monthly transect surveys. Taught bird identification and survey techniques to volunteers, performed data collection and entry, communicated with volunteers, and maintained a newsletter for over 600 recipients.

***Wildlife Rescue Association of BC***

2015 Senior Intern: assisted with diagnosis, treatment, and monitoring of wild mammals and birds in rehabilitation. Tasks included administering medication, medical examinations, laboratory testing, feeding nestling birds, and release assessments.

***Bird Studies Canada***

2011-2018 BC Coastal Waterbird Surveys: performed monthly transect surveys to collect data on waterbird populations along two routes for long-term population monitoring.

***Metro Vancouver Regional Parks***

2015-2019: Widgeon Marsh Surveys: surveyed birds in a closed regional park to gather baseline data.

2015-2016: Purple Martin banding: banded fledgling martins for monitoring of an at-risk population.