

# SEAN A. S. ANDERSON

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## EMPLOYMENT

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**July 2022-Present** – Postdoctoral Research Associate, Department of Biology, University of North Carolina at Chapel Hill (Daniel R. Matute lab)

## EDUCATION

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**PhD**, Ecology and Evolutionary Biology, University of Toronto, 2016\*-2022.

Title: “Divergent ecological adaptation in the speciation cycle”

Advisor: Jason T. Weir

\*Work described in this CV began following a lab transfer in 2018.

**BSc**, Biology (With Distinction) University of Victoria, 2005-2009.

## ACADEMIC RECOGNITIONS

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2021 – Peter Abrams Prize for Sustained Research Excellence, University of Toronto

2021 – Harold Harvey Prize for Sustained Contribution to Intellectual Life in the Department (Runner Up), University of Toronto

2009 – President’s Scholarship, University of Victoria

2009 – Bev Glover Memorial Scholarship, University of Victoria

## PUBLICATIONS

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**Anderson, S. A. S.**, T. Anspach. *Accepted*. (Digest) The non-redundancy of non-ephemeral reproductive isolation. *Evolution*.

**Anderson, S. A. S.**, J. T. Weir. (2022). The role of divergent ecological adaptation during allopatric speciation in vertebrates. *Science*, 378: 1214-1218.  
<https://doi.org/10.1126/science.abo7719>

**Anderson, S. A. S.**, H. López-Fernández, J. T. Weir. *In Press*. Ecology and the origin of non-ephemeral species. *American Naturalist*. <https://doi.org/10.1086/723763>

Bemmels, J. B., A. C. Bramwell, **S. A. S. Anderson**, V. E. Luzuriaga-Aveiga, E. K. Mikkelsen, J. T. Weir. (2021). Geographic contact drives increased reproductive isolation in two cryptic *Empidonax* flycatchers. *Molecular Ecology*, 30: 4833-4844.  
<https://doi.org/10.1111/mec.16105>

**Anderson, S. A. S.**, J. T. Weir. (2021). Character displacement drives trait divergence in a continental fauna. *Proceedings of the National Academy of Sciences*\*, 118: e2021209118.  
<https://doi.org/10.1073/pnas.2021209118>

\*Article was the PNAS cover story

**Anderson, S. A. S., J. T. Weir.** (2020). A comparative test for divergent adaptation: inferring speciation drivers from functional trait divergence\*. *American Naturalist*, 196: 429-442. <https://doi.org/10.1086/710338>

\* Article made the journal's 'Most Read' list in Fall 2020.

## PUBLISHED SOFTWARE

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**Anderson, S. A. S. and J. T. Weir.** (2022). *diverge*: evolutionary trait divergence between sister species and other paired lineages. R package version 2.0.4. <https://cran.r-project.org/web/packages/diverge/index.html>

## OTHER WRITING & PUBLISHING

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### FEATURES

**Anderson, S. A. S., C. M. Thaysen, R. Turner.** (2020). The arctic by land and sea. *The EEB Quarterly*, Vol 2, Fall/Winter, pp. 72-91.

**Anderson, S. A. S.** (2019). Meet the keynote: interview with Atwood Colloquium keynote lecturer Sharon Strauss. *The EEB Quarterly*, Vol 1, Spring, pp. 48-54.

**Anderson, S. A. S.** (2018). Massively parallel: tutorial for running R scripts on the Niagara supercomputer. *The EEB Quarterly*, Vol 1, Winter, pp. 88-101.

### EDITORIALS

**Anderson, S. A. S.** (2020). Black Lives Matter: EEB Quarterly's statement on solidarity with the BLM movement. *The EEB Quarterly*, Vol 2, Spring/Summer, pp. 1-3.

**Anderson, S. A. S.** (2018-2020). A Letter from the Editors. *The EEB Quarterly*, Vols 1 & 2, (I wrote this recurring editorial in all five issues of volumes 1 and 2).

### NEWSLETTER BRIEFS & REPORTS

**Anderson, S. A. S.** (2019). Department news. *The EEB Quarterly*, Vol 1, Spring, pp. 22-27.

**Anderson, S. A. S.** (2019). Student appreciation. *The EEB Quarterly*, Vol 1, Spring, pp. 37-38.

**Anderson, S. A. S.** (2020). Department news. *The EEB Quarterly*, Vol 2, Fall/Winter, pp. 24-27.

## RESEARCH PRESENTATIONS

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**Anderson, S. A. S. and J. T. Weir.** 2022. The role of adaptive ecological divergence during allopatric speciation in vertebrates. SICB Regional Conference, Duke University, NC.

**Anderson, S. A. S. and J. T. Weir.** 2022. The ecology of allopatric speciation. Evolution Conference, Cleveland OH.

**Anderson, S. A. S., H. López-Fernández, and J. T. Weir.** 2021. Does ecological

speciation generate continental biodiversity? Canadian Society for Ecology and Evolution Meeting, Vancouver, B.C. (digital).

**Anderson S. A. S.** and J. T. Weir. 2021. Revisiting the role of divergent selection in the evolution of species richness. UTSC Biology Department Seminar (invited) \*I was the first non-PhD-holder to be invited to deliver a talk in this seminar series.

**Anderson, S. A. S.** and J. T. Weir. 2020. Character displacement drives trait divergence in a continental fauna. Atwood Colloquium, University of Toronto.

**Anderson, S. A. S.** and J. T. Weir. 2020. Ecological character displacement across a latitudinal gradient. American Naturalist Standalone Meeting, Asilomar, CA.

**Anderson, S. A. S.** and J. T. Weir. 2019. Modelling divergent adaptation between sister species using the Ornstein-Uhlenbeck process. Evolution Conference, Providence RI.

**Anderson, S. A. S.** 2017. Continental constraints on the diversification of cichlid fishes. University of Toronto Student Seminar Series.

**Anderson, S. A. S.** 2017. Neotropical fishes and global diversity patterns: correcting the island-study bias in diversification studies. Royal Ontario Museum Incubator Series (Invited).

**Anderson, S. A. S.** 2017. Modes of diversification in a hyper-diverse system: the neotropical fishes, Atwood Colloquium (Lightning), University of Toronto.

**Anderson, S. A. S.** and D. Laird. 2010. A test of aposematic colouration in *Calliostoma annulatum*. Pacific Ecology and Evolution Conference, Bamfield BC.

**Anderson, S. A. S.** and D. Laird. 2009. A comparison of the behavioural defenses of *Calliostoma annulatum* and *C. ligatum* against two invertebrate predators. Bamfield Fall Symposium, Bamfield Marine Sciences Centre.

## ACADEMIC COMMUNITY INVOLVEMENT

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2019-2020 – **Graduate Student Representative**, Canadian Union for Public Employees.

2020-Present – **Newsletter Editor**, [The EEB Quarterly](#), University of Toronto.

2018-2020 – **Founder, Editor in Chief**, [The EEB Quarterly](#), a departmental review and full-length digital magazine written by and for graduate students. This magazine has directly inspired similar publications at Canadian institutions including the University of Ottawa's *Biomatters Magazine*, whose editors I advised, and the University of Toronto at Scarborough's *The Valley*.

2018-19, 19-20 – **Scarborough Campus Representative**, EEB Graduate Students Association executive committee.

2017, 2018 – **Graduate Student Mentor**, EEB Mentorship Program.

2017, 2018 – **Volunteer**, Atwood Colloquium Selection Committee, EGSA.

## PUBLIC OUTREACH

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2020 – **Backyard Birding Tutorial** – Koffler Scientific Reserve at Joker's Hill

- 2017 – **March Break at the ROM** – Public interpretation of fishes collection at the Royal Ontario Museum
- 2017 – **Halloween Friday Night Live** – Public interpretation of fishes collection at the Royal Ontario Museum
- 2017 – **ROM Magazine Spring Issue** – Photos published in story “Up the River” by Hernán López-Fernández and Mary Burridge

## TEACHING

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### A. UNIVERSITY COURSES

- 2022, 20, 19, 18 – University of Toronto (Scarborough), **Tutorials**, “Macroevolution”
- 2021, 19, 18 – University of Toronto (St. George), **Lab Tutorials**, “Diversity of Birds”
- 2020 – University of Toronto (Scarborough), **Invited Guest Lecturer**, “Ornithology”.  
**Lecture title:** Character displacement and the latitudinal diversity gradient
- 2020 – University of Toronto (St. George), **Course Development**, “Macroevolution”
- 2020 – University of Toronto (St. George), **Lab Tutorials**, “Evolutionary Ecology”
- 2019 – University of Toronto (Scarborough), **Invited Guest Lecturer**, “Ornithology”.  
**Lecture title:** Character displacement in birds
- 2017 – University of Toronto (St. George), **Lab Tutorials**, “Diversity of Fishes”
- 2017 – University of Toronto (St. George), **Lab Tutorials**, “From Genomes to Ecosystems”
- 2016 – University of Toronto (St. George), **Lab Tutorials**, “Adaptation and Biodiversity”
- 2016 – University of Toronto (St. George), **Invited Guest Lecturer**, “Diversity of Fishes”.  
**Lecture title:** “Issues in Marine Fisheries from Canadian and Global Perspectives”.

### B. HIGH SCHOOL COURSES

- 2011-2014 – **Instructor**, Forest Hill Tutoring and Academy: Physics 11, Physics 12, Mathematics 10, Mathematics 12, Chemistry 11

## FIELD EXPEDITIONS (SPONSORING INSTITUTION)

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### AFRICA

- 2022 – *Drosophila* sampling across an interspecific hybrid zone and elevational gradient on Pico de São Tomé, **São Tomé and Príncipe**. (University of North Carolina at Chapel Hill)

### NORTH AMERICA

- 2019 – Fox sparrow sampling transect from Coastal BC to northern Rocky Mountains, **Canada**. (University of Toronto).
- 2009 – Data collection and field courses, **Bamfield, BC, Canada**. (Bamfield Marine Sciences Centre).
- 2007 – Data collection, population ecology of juvenile steelhead trout, John Day River Basin, **Eastern Oregon, USA**. (Utah State University).

### SOUTH AMERICA

Sean A. S. Anderson

2018 – Biodiversity sampling of fishes, **Rewa River, Guyana**. (University of Michigan).

2016 – Biodiversity sampling of fishes, **Saramacca River, Suriname**. (Royal Ontario Museum).

#### AUSTRALIA

2010 – Data collection and monitoring, Shark Bay Ecosystem Research Project, **Shark Bay, WA, Australia**. (Florida International University).

#### PRE-GRAD-SCHOOL EMPLOYMENT

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##### 2014-2016 – **Archipelago Marine Research, Victoria BC**

Position: Data Technician, Dockside and At-Sea catch Validator

Purview: Identified and quantified catch for the British Columbia commercial ground fish fleet. Analyzed and summarized data for use in quota management and enforcement in partnership with Fisheries and Oceans Canada

##### 2011-2014 – **Forest Hill Tutoring and Academy, Toronto ON**

Position: Tutor and Instructor of Ontario Credit Courses in Math, Chemistry, and Physics

##### 2010 (Feb-August) – **Shark Bay Ecosystem Research Project, WA, Australia**

Position: Field Research Assistant

##### 2008, 2014 – **Orca Spirit Adventures, Victoria BC**

Position: Marine Naturalist

Purview: Natural history interpretation of Vancouver Island marine wildlife for eco-tourism company

##### 2007 – **Utah State University**

Position: Field Research Assistant

#### PROFESSIONAL DEVELOPEMENT

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2018 – Evolutionary Quantitative Genetics Workshop, Friday Harbor Labs

#### PROFESSIONAL SERVICES

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Peer reviewer for *Proceedings of the Royal Society B: Biological Sciences*, *Ecology Letters*, *Journal of Evolutionary Biology*, *American Naturalist*, *Evolution*.

#### SOCIETY MEMBERSHIPS

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Canadian Society for Ecology and Evolution, Society for the Study of Evolution, American Society of Naturalists, Toronto Field Naturalists