SEAN A. S. ANDERSON

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EMPLOYMENT

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

EDUCATION

PhD, Ecology and Evolutionary Biology, University of Toronto, 2016*-2022.
Advisor: Jason T. Weir
*PhD work described here began after a lab transfer in 2018 (original advisor moved abroad)

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

ACADEMIC RECOGNITIONS

2023 – Best Graduate Student Paper, University of Toronto Scarborough
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

† undergraduate/graduate-student mentee

Anderson, S. A. S., T. Anspach†. (2023). (Digest) The non-redundancy of non-ephemeral reproductive isolation. ***Evolution***, https://doi.org/10.1093/evolut/qpac060

Anderson, S. A. S., H. López-Fernández, J. T. Weir. (2023). Ecology and the origin of non-ephemeral species. ***American Naturalist***, https://doi.org/10.1086/723763

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 *Voted best grad student paper by UTSC faculty

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 2020.

PUBLISHED SOFTWARE

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

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

Anderson, S. A. S. (2023). Speciation and the genesis of regional biodiversity. University of Toronto (invited).

Anderson, S. A. S. (2023). The ecology of intrinsic reproductive isolation. Gordon Speciation Conference (GRC), Lucca, Italy (invited).

Anderson, S. A. S. (2023). Poster: Does adaptive ecological divergence drive allopatric speciation in vertebrates? Gordon Speciation Conference (GRC), Lucca, Italy.

Anderson, S. A. S. (2023). The ecology of intrinsic reproductive isolation. Gordon Speciation Seminar (GRS)*, Lucca, Italy

**Talks at GRC are generally reserved for faculty members. This talk originally appeared at the GRS. It was voted by GRS attendees to be one of the four non-faculty talks invited to the GRC.*

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.

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, BC.

Anderson S. A. S. and J. T. Weir. (2021). Revisiting the role of divergent selection in the evolution of species richness. University of Toronto at Scarborough, Biology Department Seminar (invited seminar) *I was the first non-faculty invited to speak at 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 BC.

ACADEMIC COMMUNITY INVOLVEMENT

2020-2022 – **Newsletter Editor**, *The EEB Quarterly*, University of Toronto.
2019-2020 – **Graduate Student Representative**, Canadian Union for Public Employees.
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 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*.

2018-2020 – **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

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

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)

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 transect, Coastal BC to 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
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

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

2023 – Workshop in Genomics, Český Krumlov, Czech Republic
2018 – Evolutionary Quantitative Genetics Workshop, Friday Harbor Labs

PROFESSIONAL SERVICE

Peer review for: *Proc B*, *Ecology Letters*, *Journal* of *Evolutionary Biology*, *American Naturalist*, *Evolution*.

Grant evaluations for: Agence Nationale de la Recherché (France's federal funding body)