

Jake Lawlor

PhD Candidate

CONTACT

McGill University
Department of Biology
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PROGRAMMING SKILLS

Languages

R - expert

Web

R Shiny
HTML
CSS
Markdown

Version Control

Git

EDUCATION

- 2020- **Ph.D. Biology** McGill University
Effects of species traits, protective status, and environmental forces on species range shifts
ADVISED BY DR. JENNIFER SUNDAY
- 2017-19 **M.S. Biology** Western Washington University
Modeling climate-dependent larval growth rate and duration of Olympia oysters in the Salish Sea
ADVISED BY DR. SHAWN ARELLANO
- 2011-15 **B.Sc. Environmental Science** The University of Texas

GRANTS AND FELLOWSHIPS

- 2025 Real Décoste-Ouranos Excellence Award FRQNT / Ouranos
• \$120,000 fellowship for research on climate change impacts
- 2024 Climate Action Scholarship FRQSC
• One of ten provincially selected to conduct research to guide policy for climate action in Quebec; \$12,000 - [see deliverable](#)
- 2021 Quebec Doctoral Research Scholarship FRQNT
• \$83,667 fellowship for 3.5 years
- Dr. Lawrence Light Graduate Fellowship in Sustainability McGill U
• \$10,000 fellowship + \$4,000 for undergraduate researcher
- 2020 Computational Biodiversity Science and Services (BIOS²) Fellowship NSERC CREATE
• \$10,500 fellowship + \$2,000 mobility funds, renewable 3 years
- International Graduate Tuition Award McGill U
• \$13,500 international tuition award, renewable 4 years
- 2019 Biology Student Conference Travel Grant Western Washington U
College of Science & Engineering Student Travel Award Western Washington U
Ross Travel Grant Western Washington U
- 2018 Visiting Internship Student Award Hong Kong U Sci & Tech
• 2-month internship in the Chan Quantitative Plankton Ecology Lab
- Enhancement of Graduate Research Fund Project Grant Western Washington U
- Steve Sulkin Graduate Research Fellowship Shannon Pt. Marine Center
- 2015 Multicultural Initiative in Marine Science: Undergraduate Participation NSF
• One of eight nationally selected for 6-month NSF marine science research program

HONOURS AND AWARDS

- 2025 Biology Writing Year Award McGill University
- 2023 Excellence Award Quebec Centre for Biodiversity Science
- 2022 Graduate Mobility Award BIOS² Program
- Graduate Research Enhancement and Travel Award McGill Biology
- Student Conference Travel Award Living Data Project
- 2021 Learning and Development Award (LeaDA) x3 Quebec Centre for Biodiversity Science
- 2020 Learning and Development Award (LeaDA) x2 Quebec Centre for Biodiversity Science
- Best Poster Presentation Award Quebec Centre for Biodiv. Sci. Conference
- Outstanding Graduate Student Award Western Washington U. Graduate School
- Outstanding Graduate Research Award Western Washington U Dept. Biology
- 2019 Honorable Mention Graduate Student Presentation PERS Conference 2019
- 2018 "Washingtonian of the Day" Award Awarded by Gov. Jay Inslee
- 2013 Tanzania: Wildlife Conservation Program Scholarship School for International Training
- 2011-13 Undergraduate Merit-Based Scholarship U. Texas Jackson School of Geosciences

PUBLICATIONS

2025	<p>Power Analysis For Detecting Richness Change Tekwa, E., Lawlor, J., Stanley, R., Jeffery, N., Rubidge, E., Sunday, J. SUBMITTED</p> <p>Global patterns predict local biodiversity shifts in a climate change hotspot Lawlor, J.A., Hesketh, A.V., Beaulieu, J., Knight, N.S., Peller, T., Super, L., Pereira, A., Bledsoe, E.K., Burant, J.B., Dijkstra, J.A., Benes, K., Byrnes, J.E.K. SUBMITTED</p> <p>Species range shifts often speed ahead of their modeled climatic niches Oliveira, B.F., Bertrand, R., Pinsky, M.L., Casajus, N., Wolfe, B.W., Scheffers, B.R., Villalobos, F., Grenouillet, G., Pedl, G., Chen, I-C., Baecher, J.A., Lawlor, J.A., Sunday, J., Murienne, J., Rolland, J., Thompson, L.M., Lancaster, L.T., Rubenstein, M., Moore, N.A., Bandara, R.M.W.J., Diamond, S., Weiskopf, S.R., Lenoir, J., Comte, L. SUBMITTED</p> <p>Genetic diversity impacts climate-induced species range shifts Oliveira, B.F., Bertrand, R., Comte, L., Lenoir, J., Grenouillet, G., Lancaster, L.T., Murienne, J., Diamond, S., Scheffers, B.R., Bandara, R.M.W.J., Lawlor, J.A., Moore, N.A., Wolfe, B.W., Villalobos, F., Weiskopf, S.R., Thompson, L.M., Pinsky, M.L., Rolland, J. SUBMITTED</p> <p>Don't miss the forest for the trees: how abstracting nature can get us closer to our goals Lawlor, J. GLOBAL CHANGE BIOLOGY 31:4: E70146 HTTPS://DOI.ORG/10.1111/GCB.70146 • INVITED COMMENTARY</p>
2024	<p>Interactive effects of predation and climate on the distributions of marine shellfish in the Northwest Atlantic. Zabidi-Seissan, S., Baker, K.D., Stanley, R.R.E., Tunney, T.D., Beauchamp, B., Benoit, H., Brickman, D., Chabot, D., Cook, A., Deslauriers, D., Koen-Alonso, M., Lawlor, J., LeBris, A., Mullowney, D.R.J., Roux, M.J., Skanes, K.R., Wang, Z., Pedersen, E.J. OIKOS 110524 HTTPS://DOI.ORG/10.1111/OIK.10524</p> <p>Mechanisms, detections, and impacts of species redistributions under climate change Lawlor, J., Comte, L., Lenoir, J., Grenouillet, G., Baecher, J.A., Bandara, R.M.W.J., Bertrand, R., Chen, I-C., Diamond, S., Lancaster, L., Moore, N., Murienne, J., Oliveira, B., Pinsky, M., Rolland, J., Rubenstein, M., Scheffers, B., Thompson, L., van Amerom, B., Villalobos, F., Weiskopf, S., Sunday, J. NATURE REVIEWS EARTH AND ENVIRONMENT 5(5) HTTPS://DOI.ORG/10.1038/S43017-024-00527-7</p> <p>Notes from the past show how local variability can stymie urchins and the rise of the reds in the Gulf of Maine Byrnes, J.E.K., Brown, A., Sheridan, K., Peller, T., Lawlor, J., Beaulieu, J., Muñoz, J., Hesketh, A., Pereira, A., Knight, N., Bledsoe, E., Burant, J.B., Super, L., Dijkstra, J.A., Benes, K. ECOSPHERE 15:E4800. HTTPS://DOI.ORG/10.1002/ECS2.4800</p> <p>Bringing traits back into the equation: A roadmap to understand species redistribution Comte, L., Bertrand, R., Diamond, S., Lancaster, L.T., Pinsky, M.L., Scheffers, B.R., Baecher, J.A., Bandara, R.M.W.J., Chen, I-C., Lawlor, J.A., Moore, N.A., Oliveira, B.F., Murienne, J., Rolland, J., Rubenstein, M.A., Sunday, J., Thompson, L.M., Villalobos, F., Weiskopf, S.R., Lenoir, J. GLOBAL CHANGE BIOLOGY 30:E17271 HTTPS://DOI.ORG/10.1111/GCB.17271</p>
2023	<p>Priorities for synthesis research in ecology and environmental science Halpern, B., Boettiger, C., Dietze, M., Gephart, J., Gonzalez, P., Grimm, N., Großmann, P., ... Lawlor, J., ... (127 authors total) ECOSPHERE 14:1 E4342 HTTPS://DOI.ORG/10.1002/ECS2.4342</p>
2022	<p>Ten simple rules for teaching yourself R Lawlor, J., Banville, F., Forero-Muñoz, N.R., Hébert, K., Martínez-Lanfranco, J.A., Rogy, P., and McDonald, A PLOS COMPUTATIONAL BIOLOGY 18(9): E1010372. HTTPS://DOI.ORG/10.1371/JOURNAL.PCBI.1010372</p>
2020	<p>Temperature and salinity, not acidification, predict near-future larval growth and larval habitat suitability of Olympia oysters in the Salish Sea. Lawlor, J. and Arellano, S. SCIENTIFIC REPORTS 10:13787; HTTPS://DOI.ORG/10.1038/S41598-020-69568-W</p> <p>Software Package - PNWColors: Color Palettes Inspired by Nature in the US Pacific Northwest Lawlor, J. PNWCOLORS R PACKAGE VERSION 0.1.0. (>18,000 DOWNLOADS FROM CRAN)</p>

EMPLOYMENT AND INTERNSHIPS

- 2023 **Shiny Application Developer - Interactive Data Portal - [see app](#)**
Project Optimize (McGill x Fisheries and Oceans Canada) | Montreal, QC
- 2022 **Marine Conservation Network Design Web App Developer - [see more](#)**
Fisheries and Oceans Canada | Maritimes
- 2021
↓
Vaccine-Preventable Diseases Data Science & Data Journalism Intern
Precision Analytics | Montreal, QC
- Interactive Web App Developer for Exploring Species Distribution Model Outputs - [see app](#)**
Fisheries and Oceans Canada - Aquatic Climate Change Adaptation Services Program | Maritimes
- 2020 **Freelance Data Analyst / Data Visualization Specialist - [upwork freelance profile](#)**
Clients include CA Carbon Pricing Consultancy, ACLU of Washington, and CratedWithLove food delivery..
- 2019
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Larval Biology Research Associate
Shannon Point Marine Center | Anacortes, WA
- R/V Tiglax 14-Day Research Cruise Consultant**
Northern Gulf of Alaska Long Term Ecological Research Study Area | Seward, AK
- 2018 **Chan Quantitative Plankton Ecology Lab Visiting Internship Student**
Hong Kong University of Science and Technology | Hong Kong SAR, China
- 2017 **Shellfish Research Hatchery Technician**
University of North Carolina Wilmington CREST Research Park | Wilmington, NC
- 2016 **Arellano Larval Lab Research Technologist**
Shannon Point Marine Center | Anacortes, WA
- 2015
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Matz Coral Genomics and Adaptation Lab Undergraduate Research Assistant
The University of Texas | Austin, TX
- National Science Foundation Undergraduate Research Fellow**
Shannon Point Marine Center | Anacortes, WA
- 2014
↓
Phelps Social Neuroscience Lab Undergraduate Research Assistant
The University of Texas | Austin, TX
- Vertebrate Paleontology Lab Curation and Collections Assistant**
The University of Texas Pickle Research Campus | Austin, TX

CONFERENCE PRESENTATIONS

- 2025
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Living Data Conference, Oral Presentation | Bogota, Colombia
A user-friendly power analysis tool for confidently detecting biodiversity change
- Canadian Society for Ecology and Evolution Conference, Oral Presentation | Sherbrooke, QC**
Species Range Shifts and Marine Conservation in Canada
- McGill Biology Department Day, Oral Presentation | Montreal, QC**
Climate Action in Canada's Oceans
• INVITED KEYNOTE PRESENTATION
- 2024 **McGill Biology Department Day, Oral Presentation | Montreal, QC**
Assessing Canada's Marine Protected Areas in the Context of Climate-Driven Species Range Shifts
- 2023 **Species on the Move Conference, Oral Presentation | Bonita Springs, FL**
Assessing Global Marine Protected Areas In The Context Of Anticipated Species Range Shifts
- 2022
↓
Ecological Society of America/Canadian Society for Ecology & Evolution, Talk | Montreal, QC
Shifts in the thermal affinity of a Gulf of Maine intertidal community over 35 years
- Ecological Forecasting Initiative, Poster | Virtual**
A Framework for Forecasting Sea Urchin Recruitment on the North American West Coast
• CO-PRESENTATION WITH UNDERGRADUATE MENTEE, VICTOR CRUZ
- 2021 **Québec Centre for Biodiversity Science, Poster | Virtual**
What do we need to accurately detect range shifts?

2020	Québec Centre for Biodiversity Science, Poster + Speed Talk Virtual <i>How have we detected range shifts? A review and synthesis</i> <ul style="list-style-type: none"> • CO-PRESENTATION WITH UNDERGRADUATE MENTEE, BRIT VAN AMEROM • BEST POSTER PRESENTATION AWARD
	Western Society of Naturalists Conference, Oral Presentation Virtual <i>Using interacting environmental gradients to predict larval success in future oceans</i>
2019	Species on the Move Conference, Poster Presentation Kruger NP, South Africa <i>Scaling up climate-dependent larval growth rates and behaviors to population distributions of oysters in a changing ocean</i>
	Pacific Estuarine Research Society (PERS) Conference, Fast Talk Anacortes, WA <i>Effects of interacting climate stressors on Olympia oyster larval growth rate and duration</i> <ul style="list-style-type: none"> • GRADUATE STUDENT PRESENTATION HONORABLE MENTION
2017	International Larval Biology Symposium, Poster Presentation Honolulu, HI <i>Effects of multiple stressors on Olympia oyster larval swimming</i>
2015	WWU All University Scholars Week, Poster Presentation Bellingham, WA <i>Effects of acidification and warming on Olympia oyster larval swimming and growth</i>
	Pacific Estuarine Research Society (PERS), Poster Presentation Seattle, WA <i>Effects of acidification and warming on Olympia oyster larval swimming and growth</i>
	NOAA Alaska Fisheries Science Center, Oral Presentation Seattle, WA <i>Oysters in a changing ocean: effects of acidification and warming on larval swimming</i>
2014	UT Environmental Science Institute Symposium, Poster Presentation Austin, TX <i>Intertidal donation in stands of Sonneratia alba on the shorelines of Northern Tanzania</i>
	School for International Training Symposium, Oral Presentation Arusha, Tanzania <i>Intertidal donation in Northern Tanzanian mangrove stands</i>

TEACHING

Programming Workshop Instructor

2023-25 **Data Science in R, Sole Instructor (33 workshops)**

*RECOGNIZED IN MCGILL CO-CURRICULAR RECORD
Introduction to R Programming (x4)
Data Wrangling in R (x5)
Exploratory Data Analysis in R (x4)
Data Visualization in R: Introductory (x5)
Data Visualization in R: Intermediate (x5)
Quarto / R Markdown (x1)
Creating Shiny Dashboards in R (x5)
Working with Text in R (x2)
Building Interactive Plots in R (x3)

McGill Computational and Data Systems Initiative

2022 **Shiny Apps for Communicating Science [slides](#) | [repo](#)**

QCBS R Symposium
 Living Data Project Working Group

Shiny Apps for Communicating Science

BIOS2 Program

Software Carpentry (3-hour section - tidyR)

Quebec Centre for Biodiv. Sci.

Programming in R: 4-hour workshop

Quebec Centre for Biodiv. Sci.

Data Visualization in R: 4-hour workshop

BIOS2 Program

Creating Shiny Apps in R: 6-hour workshop & [development](#)

Quebec Centre for Biodiv. Sci.

Generalized Additive Models in R: 4-hour workshop

BIOS2 Program

Software Carpentry: 16-hour workshop

BIOS2 Program

Data Carpentry: 16-hour workshop

Quebec Centre for Biodiv. Sci.

Introduction to R: 4-hour workshop

Quebec Centre for Biodiv. Sci.

Data Visualization in R: 4-hour workshop & [development](#)

Quebec Centre for Biodiv. Sci.

Guest Lecturer

2025 **Organismal Biology Research and Professional Skills**

McGill Biology Grad Studies

"Upgrading your practices to make your science useful"

2023 **Ocean Climate Change Biology**

WWU Marine & Coastal Sci.

		"Climate-driven shifts in marine ecosystems"	
2022	Introduction to Graduate Studies in Biology "Data Visualization as a Professional Skill"		McGill Biology Grad Studies
2021	Introduction to Graduate Studies in Biology "Data Visualization as a Professional Skill"		McGill Biology Grad Studies
	Summer NSF REU R Workshop Series "101 Things You Can Do in RStats"		Shannon Point Marine Center
2020	Biol 407: Marine Ecology Guest lecture in marine biogeography and proposal writing		WWU Marine & Coastal Sci.
	Biol 399: Intro Experimental Design and Statistics Guest lecture in statistical programming		Oregon Inst. of Marine Biol

Teaching Assistant

2023	Scientific Data Management (postdoc level appointment)	Living Data Project
2023	Scientific Collaboration (postdoc level appointment)	Living Data Project
2023	Synthesis Statistics (postdoc level appointment)	Living Data Project
2021	ATOC 184: The Science of Storms	McGill Atmospheric & Ocean Sci.
2020	ATOC 185: Natural Disasters	McGill Atmospheric & Ocean Sci.
	ATOC 184: The Science of Storms	McGill Atmospheric & Ocean Sci.
2018	Biol 465: Algae	WWU Biology
	Biol 405: Marine Ecology	WWU Biology
2017	Biol 101: Introductory Biology six sections	WWU Biology
2015	UGS 302: Austin Area Environmental Issues (undergrad TA)	U. Texas Env. Sci.

CAMPUS AND COMMUNITY SERVICE

cont.	Peer Reviewer , see verified reviews on ORCID	
	<i>Ecology Letters</i> (3)	
	<i>Ecography</i> (2)	
	<i>FACETS</i> (1)	
	<i>Global Change Biology</i> (1)	
	<i>USGS Internal Review</i> (1)	
	<i>Journal of Experimental Marine Biology and Ecology</i> (1)	
	<i>Northeast Naturalist</i> (1)	
2022	BIPOC Undergraduate Research Award Selection Committee Member - Grad. Representative	
	<i>McGill Department of Biology</i> Montreal, QC	
2021	Data Analyst	
	<i>McGill Biology Graduate Student Association</i> Montreal, QC	
	BIPOC Undergraduate Research Award Selection Committee Member - Grad. Representative	
	<i>McGill Department of Biology</i> Montreal, QC	
	New Faculty Student Search Committee Member	
	<i>McGill Department of Biology</i> Montreal, QC	
2020	Pro Bono Data Scientist for Quebec Nonprofit Organizations	
	<i>Data for Good Montreal</i> Montreal, QC	
2019	New Faculty Student Search Committee Member - Professor and Marine Lab Director Searches	
	<i>Western Washington University Marine and Coastal Science Program</i> Bellingham, WA	
2018	Graduate Student Advisory Council - Marine Center Representative	
	<i>Shannon Point Marine Center & Western Washington University</i> Bellingham, WA	
2014	Vice President	
	<i>Texas Geological Energy and Environmental Leadership Organization (GEELO)</i> Austin, TX	
2011-14	Volunteer Science Tutor for Standardized Test Preparation	
	<i>Neighborhood Longhorn Program</i> Austin, TX	

CERTIFICATES, WORKSHOPS & SPECIAL COURSES

2024	Data and Software Carpentry Instructor	The Carpentries
2023	Forecasting for Decision-Making: An Epidemiological & Ecological Perspective	Canadian Ecological Forecasting Initiative
	BIOSHIFTS Working Group (2)	Cent. for the Synth. and Analysis of Biodiv.
	Climate and Biodiversity in Marine Ecosystems working group (2)	Conservation International
2022	BIOSHIFTS Working Group	Cent. for the Synth. and Analysis of Biodiv.
	Near-term Ecological Forecasting Short Course	Near-term Ecological Forecasting Initiative
	Climate and Biodiversity in Marine Ecosystems working group	Conservation International
2021	Data Driven Ecological Synthesis Short Course	Comp. Biodiv. Science & Services (BIOS ²)
	Certificate in Synthetic and Collaborative Science	NSERC-CREATE Living Data Project
	Coastal Oceans Working Group	NSERC-CREATE Living Data Project
	Data Science x Design Creators Conference	Data Science x Design
	Future of Synthesis in Science Workshop	NCEAS (Virtual)

SCIENCE COMMUNICATION

2018-19	Instagram Manager, Shannon Point Marine Center — @wwushannonpoint
2018	Science Journalist, University of Washington Puget Sound Institute <i>The Puget Sound Coastal Storm Modeling System</i> Published Aug. 2018 in Encyclopedia of Puget Sound

OUTDOOR EDUCATION AND OUTREACH

Summers 2015-19	Sea Kayak Guide / Naturalist on one-day to five-day Kayak Trips <i>Anacortes Kayak Tours</i> Anacortes, WA
2019	Monthly "Outdoor Friday" Program Leader <i>Fiddlehead Montessori School</i> Anacortes, WA
2019	Outdoor School Substitute Teacher <i>Fidalgo Nature School</i> Anacortes, WA
2017	International Trip Guide for High School Students - Thailand <i>Adventures Cross Country</i> Mill Valley, CA & Bangkok, Thailand
2016	Marine Ecology Outdoor School Instructor for 3-day Programs <i>Academic Adventures</i> Anacortes, WA
2015	Marine Science Elementary Teacher for 2nd Grade Classrooms <i>Anacortes School District</i> Anacortes, WA
Summers 2012-14	Summer Camp Environmental Stewardship Director <i>John Knox Ranch</i> Fischer, TX
2014	After-School Outdoor Education Program Leader <i>Camp Fire USA</i> Austin, TX