

# Jake Lawlor

PhD Candidate

## CONTACT

McGill University  
Department of Biology  
Montréal, QC, Canada

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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 (BIOS<sup>2</sup>) 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** BIOS<sup>2</sup> 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
- Power Analysis For Detecting Richness Change**  
*Tekwa, E., [Lawlor, J.](#), Stanley, R., Jeffery, N., Rubidge, E., Sunday, J.*  
 SUBMITTED
- 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
- 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., Pecl, G., Chen, I-C., Baecher, J.A., [Lawlor, J.A.](#), Sunday, J., Muriene, 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
- Genetic diversity impacts climate-induced species range shifts**  
*Oliveira, B.F., Bertrand, R., Comte, L., Lenoir, J., Grenouillet, G., Lancaster, L.T., Muriene, 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
- 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](https://doi.org/10.1111/GCB.70146)  
 • INVITED COMMENTARY
- 2024
- Interactive effects of predation and climate on the distributions of marine shellfish in the Northwest Atlantic.**  
*Zabihi-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 E10524 [HTTPS://DOI.ORG/10.1111/OIK.10524](https://doi.org/10.1111/OIK.10524)
- 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., Muriene, 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-z](https://doi.org/10.1038/s43017-024-00527-z)
- 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](https://doi.org/10.1002/ECS2.4800)
- 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., Muriene, 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](https://doi.org/10.1111/GCB.17271)
- 2023
- 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](https://doi.org/10.1002/ECS2.4342)
- 2022
- 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](https://doi.org/10.1371/JOURNAL.PCBI.1010372)
- 2020
- 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](https://doi.org/10.1038/s41598-020-69568-w)
- 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](#))

## EMPLOYMENT AND INTERSHIPS

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

## TEACHING

### Programming Workshop Instructor

2023-25	<b>Data Science in R, Sole Instructor (33 workshops)</b> *RECOGNIZED IN MCGILL CO-CURRICULAR RECORD <i>Introduction to R Programming (x4)</i> <i>Data Wrangling in R (x5)</i> <i>Exploratory Data Analysis in R (x4)</i> <i>Data Visualization in R: Introductory (x5)</i> <i>Data Visualization in R: Intermediate (x5)</i> <i>Quarto / R Markdown (x1)</i> <i>Creating Shiny Dashboards in R (x5)</i> <i>Working with Text in R (x2)</i> <i>Building Interactive Plots in R (x3)</i>	McGill Computational and Data Systems Initiative
2022	<b>Shiny Apps for Communicating Science <a href="#">slides</a>   <a href="#">repo</a></b> <b>Shiny Apps for Communicating Science</b>	QCBS R Symposium Living Data Project Working Group
2021	<b>Software Carpentry (3-hour section - tidyR)</b> <b>Programming in R: 4-hour workshop</b> <b>Data Visualization in R: 4-hour workshop</b> <b>Creating Shiny Apps in R: 6-hour workshop &amp; <a href="#">development</a></b> <b>Generalized Additive Models in R: 4-hour workshop</b>	BIOS2 Program Quebec Centre for Biodiv. Sci. Quebec Centre for Biodiv. Sci. BIOS2 Program
2020	<b>Software Carpentry: 16-hour workshop</b> <b>Data Carpentry: 16-hour workshop</b> <b>Introduction to R: 4-hour workshop</b> <b>Data Visualization in R: 4-hour workshop &amp; <a href="#">development</a></b>	Quebec Centre for Biodiv. Sci. BIOS2 Program BIOS2 Program Quebec Centre for Biodiv. Sci. Quebec Centre for Biodiv. Sci.

### Guest Lecturer

2025	<b>Organismal Biology Research and Professional Skills</b> <i>"Upgrading your practices to make your science useful"</i>	McGill Biology Grad Studies
2023	<b>Ocean Climate Change Biology</b>	WWU Marine & Coastal Sci.

*"Climate-driven shifts in marine ecosystems"*

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

## Teaching Assistant

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

## CAMPUS AND COMMUNITY SERVICE

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

## 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 <sup>2</sup> )
	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  
*The Puget Sound Coastal Storm Modeling System*  
 Published Aug. 2018 in Encyclopedia of Puget Sound

## OUTDOOR EDUCATION AND OUTREACH

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