

Eric D. Galbraith

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Canadian citizen
Born in Halifax, NS, Dec. 10 1974

Academic Appointments

Research Professor, Institut de Ciència i Tecnologia Ambiental, Universitat Autònoma de Barcelona.
September 2015 - July 2019, September 2025 -

Adjunct Professor, Earth and Planetary Sciences, McGill University.
September 2015 - August 2018, September 2025 -

Professor, Earth and Planetary Sciences, McGill University.
August 2019 - August 2025

Investigador, Institut de Ciència i Tecnologia Ambiental, Universitat Autònoma de Barcelona.
August 2019 -

Associate Professor, Department of Mathematics, Universitat Autònoma de Barcelona.
September 2015 - July 2019

Assistant Professor, Earth and Planetary Sciences, McGill University.
July 2009 - August 2015

Associate Research Scholar, Atmospheric and Oceanic Sciences, Princeton University.
September 2007 - June 2009

Research Associate, Atmospheric and Oceanic Sciences, Princeton University.
March 2006 - August 2007

Education

Ph.D. 2006. Earth and Ocean Sciences, University of British Columbia, Canada.
Thesis: *Interactions between climate and the marine nitrogen cycle on glacial-interglacial timescales*. Advisor: Tom Pedersen.

B.Sc. 1997 (Honours, 1st class). Earth and Planetary Sciences, McGill University, Canada
Thesis: *Evidence for two magmas in the Sloko-Skukum volcanics, Yukon*.
Advisor: Don Francis.

Selected Non-academic Employment

Contractor (part-time), David Suzuki Foundation, Vancouver, Canada.
Researched and wrote content for inaugural climate change webpages.
June 2000 - July 2001.

Expedition staff, Marine Expeditions Inc., Toronto, Canada.

Lectured on Earth science and drove zodiacs on cruises to the Canadian Arctic, Greenland and Antarctica.

June 1999 - August 2000.

Writer (freelance), The Coast, Halifax, Canada.

Wrote for weekly newspaper on environmental, political and human-interest topics.

February 1999 - September 1999.

Geologist, Cominco Peru (S.R.L.), Lima, Peru.

Reconnaissance mapping in a remote area of northern Peru.

June 1997 - February 1998.

Recognitions

Canada Research Chair (Tier 1) in Human-Earth System Dynamics (2021-2025)

Faculty member, F1000, Global Change Ecology section

Scholar, Canadian Institute for Advanced Research (CIFAR) Earth System Evolution Program (2010-2014)

Research and Publications

Summary: 117 refereed publications, including 4 *Nature*, 1 *Science*, 6 *Nature Geoscience*, 4 *Nature Communications*, 4 *Nature Climate Change*, 2 *Nature Ecology and Evolution*, 3 *Science Advances*, and 8 *Proceedings of the National Academy of Sciences*. 14800 citations, H-index: 64, i10-index: 104 ([Google scholar](#)).

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Refereed Journal Articles (Current and former trainees underlined)

1. Reyes-García, V., Attoh, E. M., Barrington-Leigh, C., Benyei, P.,...**Galbraith, E.D.**, ... & LICCI Consortium. (2025). Experienced climate change impacts help explain subjective well-being—Evidence from 14 nature-dependent communities. *People and Nature*.
2. Hunter-Batal, M., Fajzel, W., Manaugh, K., Otto, A. R., & **Galbraith, E. D.** (2025). Energy use per hour is key determinant of future transport energy consumption. *Environmental Research Letters*, 20(11), 114045.
3. Willard-Stepan, M., Gomez, N., Cardille, J. A., **Galbraith, E. D.**, & Bennett, E. M. (2025). Assessing the exposure of buildings to long-term sea level rise across the Global South. *npj Urban Sustainability*, 5(1), 72.
4. Zinan Lin, Dan Zhu, Jiayi Zhou, Yuhan Gao, Zhen Wang, **Eric Galbraith**, Jiaoyang Ruan, Jiafu Zhang (2025), Decreasing sensitivity of human populations to temperature variability during 50–10 ka in China, *Quaternary Science Reviews*, Volume 363, 109459.
5. Pallacks, S., Ziveri, P., Jannke, H. A., Lin, C. H., Subhas, A. V., **Galbraith, E.**, ... & Norris, R. D. (2025). Ocean deoxygenation linked to ancient mesopelagic fish decline. *Communications Earth & Environment*, 6(1), 596.
6. **Galbraith, E. D.**, Faisal, A. A., Matitia, T., Fajzel, W., Hatton, I., Haberl, H., Krausmann, F. & Wiedenhofer, D. (2025). Delineating the technosphere: definition, categorization, and characteristics. *Earth System Dynamics*, 16(4), 979-999.

7. Guiet, J., Bianchi, D., Scherrer, K. J. N., Heneghan, R. F., & Galbraith, E. D. (2025). Small commercial fish biomass limits the catch potential in the High Seas. *Earth's Future*, 13(4), e2024EF004571.
8. Faisal, A. A., Kaye, M., Ahmed, M., & Galbraith, E. D. (2025). The SESAME Human-Earth Atlas. *Scientific data*, 12(1), 775.
9. Eddy, T. D., Heneghan, R. F., Bryndum-Buchholz, A., Fulton, E. A., Harrison, C. S., Tittensor, D. P., ... & Blanchard, J. L. (2025). Global and regional marine ecosystem models reveal key uncertainties in climate change projections. *Earth's Future*, 13(3), e2024EF005537.
10. Martin, A.P., Dominguez, A.B., Baker, C.A., Baumas, C.M., Bisson, K.M., Cavan, E., Freilich, M., **Galbraith, E.**, Galí, M., Henson, S. and Kvale, K.F., 2024. When to add a new process to a model—and when not: A marine biogeochemical perspective. *Ecological Modelling*, 498, p.110870.
11. Guiet, J., Bianchi, D., Scherrer, K. J. N., Heneghan, R. F., and Galbraith, E. D.: BOATSv2: new ecological and economic features improve simulations of high seas catch and effort, *Geosci. Model Dev.*, 17, 8421–8454, <https://doi.org/10.5194/gmd-17-8421-2024>, 2024.
12. Heneghan, R. F., Holloway-Brown, J., Gasol, J. M., Herndl, G. J., Morán, X. A. G., & **Galbraith, E. D.** (2024). The global distribution and climate resilience of marine heterotrophic prokaryotes. *Nature Communications*, 15(1), 6943.
13. **Galbraith, E. D.**, Barrington-Leigh, C., Miñarro, S., Álvarez-Fernández, S., Attoh, E. M., Benyei, P., ... & Reyes-García, V. (2024). High life satisfaction reported among small-scale societies with low incomes. *Proceedings of the National Academy of Sciences*, 121(7), e2311703121.
14. Zelnik, Y. R., Galiana, N., Barbier, M., Loreau, M., **Galbraith, E.**, & Arnoldi, J. F. (2024). How collectively integrated are ecological communities? *Ecology Letters*, 27(1), e14358.
15. Scherrer, K. J., Rousseau, Y., Teh, L. C., Sumaila, U. R., & **Galbraith, E. D.** (2024). Diminishing returns on labour in the global marine food system. *Nature Sustainability*, 1-8.
16. Ridenour Natasha A., Buchart Liam, Carmack Eddy, Deschepper Inge, **Galbraith Eric**, Green Geoff, Marson Juliana M., Pennelly Clark, Weiss-Gibbons Tahya, Myers Paul G. (2023). Drift bottle data hint at large-scale ocean circulation changes. *Frontiers in Marine Science* (10).
17. Hatton, I.A., **Galbraith, E.D.**, Merleau, N.S., Miettinen, T.P., Smith, B.M. and Shander, J.A. (2023). The human cell count and size distribution. *Proceedings of the National Academy of Sciences*, 120(39), p.e2303077120.
18. Fajzel, W., **Galbraith, E.D.**, Barrington-Leigh, C., Charmes, J., Frie, E., Hatton, I., Le Mézo, P., Milo, R., Minor, K., Wan, X. and Xia, V. (2023). The global human day. *Proceedings of the National Academy of Sciences*, 120(25), p.e2219564120.
19. Galiana, N., Lurgi, M., Montoya, J.M., Araújo, M.B. and **Galbraith, E.D.** (2023). Climate or diet? The importance of biotic interactions in determining species range size. *Global Ecology and Biogeography*.
20. **Galbraith, E.**, Fajzel, W., Xu, S., Xia, V., Frie, E., Barrington-Leigh, C., & Reyes-García, V. (2022). Interdisciplinary applications of human time use with generalized lexicons. *PloS one*, 17(7), e0270583.

21. Lotze, H.K., Mellon, S., Coyne, J., Betts, M., Burchell, M., Fennel, K., Dusseault, M.A., Fuller, S.D., **Galbraith, E.**, Suarez, L.G. and de Gelleke, L., 2022. Long-term ocean and resource dynamics in a hotspot of climate change. *Facets*.
22. Le Mézo, P., Guiet, J., Scherrer, K., Bianchi, D., & **Galbraith, E.** (2022). Global nutrient cycling by commercially targeted marine fish. *Biogeosciences*, 19(10), 2537-2555.
23. Miñarro, S., Selim, S. and **Galbraith, E.D.** (2022). Does catching more fish increase the subjective well-being of fishers? Insights from Bangladesh. *Ambio*, pp.1-14.
24. Martiny, A.C., Hagstrom, G.I., DeVries, T., Letscher, R.T., Britten, G.L., Garcia, C.A., **Galbraith, E.**, Karl, D., Levin, S.A., Lomas, M.W. and Moreno, A.R. (2022). Marine phytoplankton resilience may moderate oligotrophic ecosystem responses and biogeochemical feedbacks to climate change. *Limnology and Oceanography*.
25. Salvatelli, R., Schneider, R.R., **Galbraith, E.**, Field, D., Blanz, T., Bauersachs, T., Crosta, X., Martinez, P., Echevin, V., Scholz, F. and Bertrand, A. (2022). Smaller fish species in a warm and oxygen-poor Humboldt Current system. *Science*, 375(6576), pp.101-104.
26. Hatton, I. A., Heneghan, R. F., Bar-On, Y. M., & **Galbraith, E. D.** (2021). The global ocean size spectrum from bacteria to whales. *Science Advances*, 7(46), eabh3732.
27. Tittensor, D. P., Novaglio, C., Harrison, C. S., Heneghan, R. F., Barrier, N., Bianchi, D., **Galbraith, E. D.**,... & Blanchard, J. L. (2021). Next-generation ensemble projections reveal higher climate risks for marine ecosystems. *Nature Climate Change*, 11(11), 973-981.
28. Zhu, D., **Galbraith, E. D.**, Reyes-García, V., & Ciais, P. (2021). Global hunter-gatherer population densities constrained by influence of seasonality on diet composition. *Nature Ecology & Evolution*, 5(11), 1536-1545.
29. Heneghan, R. F., **Galbraith, E.**, Blanchard, J. L., Harrison, C., Barrier, N., Bulman, C., ... & Tittensor, D. P. (2021). Disentangling diverse responses to climate change among global marine ecosystem models. *Progress in Oceanography*, 198, 102659.
30. Bianchi, D., Carozza, D. A., **Galbraith, E. D.**, Guiet, J., & DeVries, T. (2021). Estimating global biomass and biogeochemical cycling of marine fish with and without fishing. *Science Advances*, 7(41), eabd7554.
31. Newsom, E. R., Thompson, A. F., Adkins, J. F., & **Galbraith, E. D.** (2021). A hemispheric asymmetry in poleward ocean heat transport across climates: Implications for overturning and polar warming. *Earth and Planetary Science Letters*, 568, 117033.
32. Reyes-García, V., Gallois, S., Pyhälä, A., Díaz-Reviriego, I., Fernández-Llamazares, Á., **Galbraith, E.**, Miñarro, S., Napitupulu, L. (2021). Happy just because. A cross-cultural study on subjective wellbeing in three Indigenous societies. *PLoS one*, 16(5), e0251551.
33. Kwon, E. Y., DeVries, T., **Galbraith, E. D.**, Hwang, J., Kim, G., & Timmermann, A. (2021). Stable Carbon Isotopes Suggest Large Terrestrial Carbon Inputs to the Global Ocean. *Global Biogeochemical Cycles*, 35(4), e2020GB006684.
34. Miñarro, S., Reyes-García, V., Aswani, S., Selim, S., Barrington-Leigh, C. P., & **Galbraith, E. D.** (2021). Happy without money: Minimally monetized societies can exhibit high subjective well-being. *PLoS one*, 16(1), e0244569.

35. Le Mézo, P.K. and **Galbraith, E.D.** (2021), The fecal iron pump: Global impact of animals on the iron stoichiometry of marine sinking particles. *Limnology and Oceanography*, 66: 201-213. <https://doi.org/10.1002/lno.11597>
36. **Galbraith, E. D.** (2021). Earth system economics: a biophysical approach to the human component of the Earth system. *Earth System Dynamics*, 12(2), 671-687.
37. Scherrer, Kim J.N., Cheryl S. Harrison, Ryan F. Heneghan, **Eric Galbraith**, Charles G. Bardeen, Joshua Coupe, Jonas Jägermeyr, Nicole S. Lovenduski, August Luna, Alan Robock, Jessica Stevens, Samantha Stevenson, Owen B. Toon, Lili Xia (2020), Marine wild-capture fisheries after nuclear war. *Proceedings of the National Academy of Sciences* Nov 2020, 117 (47) 29748-29758; DOI: 10.1073/pnas.2008256117
38. Scherrer, Kim, **Eric Galbraith** (2020, Regulation strength and technology creep play key roles in global long-term projections of wild capture fisheries, *ICES Journal of Marine Science*, Volume 77, Issue 7-8, Pages 2518–2528, <https://doi.org/10.1093/icesjms/fsaa109>
39. van den Bergh, Jeroen C. J. M., Arild Angelsen, Andrea Baranzini, W. J. W. Botzen, Stefano Carattini, Stefan Drews, Tessa Dunlop, **Eric Galbraith**, Elisabeth Gsottbauer, Richard B. Howarth, Emilio Padilla, Jordi Roca & Robert C. Schmidt (2020) A dual-track transition to global carbon pricing, *Climate Policy*, doi: 10.1080/14693062.2020.1797618
40. Guiet J., **Galbraith, E.D.**, Bianchi, D., and Cheung, W. (2020), Bioenergetic influence on the historical development and decline of industrial fisheries. *ICES Journal of Marine Science*, doi:10.1093/icesjms/fsaa044
41. **Galbraith, Eric D** and Luke C. Skinner (2020). The Biological Pump During the Last Glacial Maximum. *Annual Review of Marine Science* 12:559-86.
42. Bryndum-Buchholz, Andrea, Faelan Prentice, Derek Tittensor, Julia Blanchard, William Cheung, Villy Christensen, **Eric Galbraith**, Olivier Maury, Heike Lotze (2020). Differing marine animal biomass shifts under 21st century climate change between Canada's three oceans. *FACETS*. <https://doi.org/110.1139/facets-2019-0035>
43. Hatton, Ian, Andy Dobson, David Storch, **Eric Galbraith**, Michel Loreau (2019). Linking scaling laws across eukaryotes. *Proceedings of the National Academy of Sciences*. 116(43), 21616-21622. <https://doi.org/10.1073/pnas.1900492116>
44. **Galbraith, Eric D.**, Priscilla Le Mézo, Gerard Solanes Hernandez, Daniele Bianchi and David Kroodsma (2019). Growth Limitation of Marine Fish by Low Iron Availability in the Open Ocean. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2019.00509>.
45. Castro de la Guardia, L., Garcia-Quintana, Y., Claret, M., Hu, X., **Galbraith, E. D.**, & Myers, P. G. (2019). Assessing the role of high-frequency winds and sea ice loss on Arctic phytoplankton blooms in an ice-ocean-biogeochemical model. *Journal of Geophysical Research: Biogeosciences*, 124. <https://doi.org/10.1029/2018JG004869>
46. Lotze, H. K., Tittensor, D. P., Bryndum-Buchholz, A., Eddy, T. D., Cheung, W. W., **Galbraith, E. D.**, et al. (2019). Global ensemble projections reveal trophic amplification of ocean biomass declines with climate change. *Proceedings of the National Academy of Sciences*, 116(26), 12907-12912.
47. Toggweiler, J., Druffel, E. R., Key, R. M., & **Galbraith, E. D.** (2019). Upwelling in the Ocean Basins North of the ACC: 2. How Cool Subantarctic Water Reaches the Surface in the Tropics. *Journal of Geophysical Research: Oceans*, 124(4), 2609-2625.

48. Toggweiler, J., Druffel, E. R., Key, R. M., & **Galbraith, E. D.** (2019). Upwelling in the Ocean Basins North of the ACC: 1. On the Upwelling Exposed by the Surface Distribution of $\Delta^{14}\text{C}$. *Journal of Geophysical Research: Oceans*, 124(4), 2591-2608.
49. Guiet, J., **Galbraith, E.**, Kroodsma, D., & Worm, B. (2019). Seasonal variability in global industrial fishing effort. *Plos One*, 14(5), e0216819. doi.org/10.1371/journal.pone.0216819
50. Heneghan, Ryan, Ian A. Hatton and **Eric D. Galbraith** (2019), Climate change impacts on marine ecosystems through the lens of the size spectrum, *Emerging Topics in Life Sciences* 3(2), 233-243, doi.org/10.1042/ETLS20190042.
51. Barrington-Leigh, C., and **E. Galbraith** (2019), Feasible future global scenarios for human life evaluations, *Nature communications*, 10(1), 161, doi: 10.1038/s41467-018-08002-2.
52. **Galbraith, Eric** and Casimir de Lavergne (2019). Response of a comprehensive climate model to a broad range of external forcings: relevance for deep ocean ventilation and the development of late Cenozoic ice ages. *Climate Dynamics*, doi:/10.1007/s00382-018-4157-8
53. Bryndum-Bucholz, Andrea; Tittensor, Derek P; Blanchard, Julia L; Cheung, William WL; Coll, Marta; **Galbraith, Eric D**; Jennings, Simon; Maury, Olivier; Lotze, Heike K (2019), 21st century climate change impacts on marine animal biomass and ecosystem structure across ocean basins, *Global Change Biology*.
54. Carozza, D.A., D. Bianchi and **E.D. Galbraith** (2018). Metabolic impacts of climate change on marine ecosystems: implications for fish communities and fisheries, *Global Ecology and Biogeography*.
55. McGee, D., E. Moreno-Chamarro, J. Marshall, and **E. D. Galbraith** (2018), Western U.S. lake expansions during Heinrich stadials linked to Pacific Hadley circulation, *Science Advances*, 4(11), eaav0118, doi: 10.1126/sciadv.aav0118.
56. Cartapanis, Olivier; **Galbraith, Eric D.**; Bianchi, Daniele; Jaccard, Samuel (2018). Carbon burial in deep-sea sediment and implications for oceanic inventories of carbon and alkalinity over the last glacial cycle. *Climate of the Past*, 14 (11), pp. 1819-1850.
57. Yamamoto, A., Palter J.B., Dufour C.O, Griffies S.M., Bianchi D., Claret M., Dunne J.P., Frenger I. and **Galbraith E.D.** (2018) Roles of the ocean mesoscale in the horizontal supply of mass, heat, carbon and nutrients to the Northern Hemisphere subtropical gyres, *Journal of Geophysical Research: Oceans*, 123. doi: 10.1029/2018JC013969
58. Hoogakker, B. A. A., Z. Lu, N. Umling, L. Jones, X. Zhou, R. E. M. Rickaby, R. Thunell, O. Cartapanis, and **E. Galbraith** (2018), Glacial expansion of oxygen-depleted seawater in the eastern tropical Pacific, *Nature*, 562(7727), 410-413, doi: 10.1038/s41586-018-0589-x.
59. Claret M, **Galbraith ED**, Palter JB, Bianchi D, Fennel K, Gilbert D, Dunne JP (2018). Rapid coastal deoxygenation due to ocean circulation shift in the northwest Atlantic. *Nature Climate Change*, doi:10.1038/s41558-018-0263-1
60. Kavanagh, L. and **E.D. Galbraith** (2018). Links between fish abundance and ocean biogeochemistry as recorded in marine sediments. *PLoS ONE* 13(8): e0199420, doi: 10.1371/journal.pone.0199420.
61. Eggleston, Sarah & **Eric D. Galbraith** (2018). The devil's in the disequilibrium: multi-component analysis of dissolved carbon and oxygen changes under a broad range of forcings in a general circulation model. *Biogeosciences*, 15, 3761-3777, doi:10.5194/bg-15-3761-2018.

62. Frenger, I., Bianchi, D., Sührenberg, C., Oschlies, A., Dunne, J., Deutsch, C., **Galbraith, E.** and Schütte, F. (2018). Biogeochemical role of subsurface coherent eddies in the ocean: Tracer cannonballs, hypoxic storms, and microbial stewpots? *Global Biogeochemical Cycles*, 32, 226–249. doi.org/10.1002/2017GB005743
63. Derek P Tittensor, Tyler D Eddy, Heike K Lotze, **Eric D Galbraith**...et al. (2018). A protocol for the intercomparison of marine fishery and ecosystem models: Fish-MIP v1.0. *Geoscientific Model Development* (11) 1421-2442, doi.org/10.5194/gmd-11-1421-2018
64. McGee, David, Eduardo Moreno-Chamarro, Brian Green, **Eric Galbraith**, John Marshall, Louisa Bradtmiller (2018). Hemispherically asymmetric trade wind changes as signatures of past ITCZ shifts. *Quaternary Science Reviews* (180) 214-222, doi.org/10.1016/j.quascirev.2017.11.020
65. Frieler Katja, Stefan Lange, Franziska Piontek...**Eric Galbraith** et al. (2017) Assessing the impacts of 1.5 °C global warming – simulation protocol of the Inter-Sectoral Impact Model Intercomparison Project (ISIMIP2b) *Geosci Model Dev* 10:4321-4345 doi:10.5194/gmd-10-4321-2017
66. Blanchard, Julia L., Reg A. Watson, Elizabeth A. Fulton... David A. Carozza, **Eric D. Galbraith** et al. (2017). Linked sustainability challenges and trade-offs among fisheries, aquaculture and agriculture. *Nature Ecology and Evolution*, doi: 10.1038/s41559-017-0258-8.
67. Andreas Schmittner, Helen C Bostock, Olivier Cartapanis, **Eric D Galbraith**...et al. (2017). Calibration of the Carbon Isotope Composition ($\delta^{13}\text{C}$) of Benthic Foraminifera. *Paleoceanography*, 32, 512-530, doi: 10.1002/2016PA003072.
68. **Galbraith, E.D.** and S. Eggleston (2017). A lower limit to CO_2 over the last 800,000 years. *Nature Geoscience*. doi: 10.1038/ngeo2888
69. **Galbraith, E.D.**, D.A. Carozza, D. Bianchi (2017). A coupled human-Earth model perspective on long-term trends in the global marine fishery. *Nature Communications*. doi: 10.1038/ncomms14884
70. Elsworth, G., **E.D. Galbraith**, G. Halverson, S. Yang (2017). Enhanced weathering and CO_2 drawdown caused by latest Eocene strengthening of the Atlantic meridional overturning circulation. *Nature Geoscience*. doi: 10.1038/NGEO2888
71. Carozza DA, Bianchi D, **Galbraith ED** (2017). Formulation, General Features and Global Calibration of a Bioenergetically-Constrained Fishery Model. *PLoS ONE* 12(1): e0169763. doi:10.1371/journal.pone.0169763
72. Mullon, C., P. Guillotreau, **E. Galbraith**, J. Fortilus, C. Chaboud, L. Bopp, O. Aumont, D. Kaplan (2017). Building scenarios for the futures of the global supply chain for tuna. *Deep Sea Research*.
73. **Galbraith, E.D.**, T. Merlis and J.B. Palter (2016). Destabilization of glacial climate by the radiative impact of Atlantic Meridional Overturning Circulation disruptions. *Geophysical Research Letters*. doi: 10.1002/2016GL069846
74. Brown, Nicholas and **E.D. Galbraith** (2016). Hosed vs. unhosed: global response to interruptions of the Atlantic Meridional Overturning, with and without freshwater forcing. *Climate of the Past*. doi: 10.5194/cp-12-1663-2016
75. Carozza, David A., D. Bianchi and **E.D. Galbraith** (2016). The ecological module of BOATS-1.0: a bioenergetically-constrained model of marine upper trophic levels suitable for

- studies of fisheries and ocean biogeochemistry. *Geoscientific Model Development* (9) 1545–1565, doi:10.5194/gmd-9-1545-2016.
76. Cartapanis, O., D. Bianchi, S.L. Jaccard and **E.D. Galbraith** (2016). Global pulses of organic carbon burial in deep-sea sediments during glacial maxima. *Nature Communications*, doi: 10.1038/ncomms10796.
77. Jaccard, S.L., **E.D. Galbraith**, A. Martinez-Garcia, R.F. Anderson (2016). Covariation of deep Southern Ocean oxygenation and atmospheric CO₂ through the last ice age. *Nature*. doi:10.1038/nature16514.
78. Tagliabue, A., O. Aumont, R. DeAth, J.P. Dunne, S. Dutkiewicz, **E. Galbraith**, K. Misumi, J.K. Moore, A. Ridgwell, E. Sherman, C. Stock, M. Vichi, C. Völker, A. Yool (2016), How well do global ocean biogeochemistry models simulate dissolved iron distributions?, *Global Biogeochemical Cycles*, 29, doi:10.1002/2015GB005289
79. **Galbraith, E.D.**, J.P. Dunne, A. Gnanadesikan, R.D. Slater, J.L. Sarmiento, C.O. Dufour, G.F. deSouza, D. Bianchi, M. Claret, K.B. Rodgers, S. Sedigh Marvasti (2015). Complex functionality with minimal computation: Promise and pitfalls of reduced-tracer ocean biogeochemistry models. *Journal of Advances in Modeling Earth Systems*, doi: 10.1002/2015MS000463.
80. Dufour, C. O., S. M. Griffies, G. F. de Souza, I. Frenger, A. K. Morrison, J. B. Palter, J. L. Sarmiento, **E. D. Galbraith**, J. P. Dunne, W. G. Anderson and R. D. Slater (2015). Role of mesoscale eddies in cross-frontal transport of heat and biogeochemical tracers in the Southern Ocean. *Journal of Physical Oceanography*, 45, 3057–3081. doi: <http://dx.doi.org/10.1175/JPO-D-14-0240.1>
81. **Galbraith, E.D.** and Adam Martiny (2015). A simple nutrient-dependence mechanism for predicting the stoichiometry of marine ecosystems. *Proceedings of the National Academy of Sciences*. doi: 10.1073/pnas.1423917112
82. **Galbraith, E.D.**, D. Bianchi, M. Hain, E.Y. Kwon and J.L. Sarmiento (2015). The impact of atmospheric pCO₂ on carbon isotope ratios of the atmosphere and ocean. *Global Biogeochemical Cycles*. doi: 10.1002/2014GB004929
83. **Galbraith, E.D.** and S.L. Jaccard (2015). Coupling of the ocean biological pump with physical climate on deglaciation. *Quaternary Science Reviews*. doi: 10.1016/j.quascirev.2014.11.012
84. Bernardello, R., I. Marinov, J. B. Palter, **E. D. Galbraith**, and J. L. Sarmiento (2014), Impact of Weddell Sea deep convection on natural and anthropogenic carbon in a climate model, *Geophys. Res. Lett.*, 41, 7262–7269, doi:10.1002/2014GL061313.
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86. Delavergne, C., J. Palter, **E.D. Galbraith**, R. Bernadello and I. Marinov, 2014. Cessation of Southern Ocean deep convection under climate warming. *Nature Climate Change*, doi:10.1038/NCLIMATE2132.
87. Jaccard, S.L., **Galbraith, E.D.**, Frölicher, T.L. and Gruber, N, 2014. Ocean (de)oxygenation across the last deglaciation - Insights for the future. *Oceanography*, 27 (1), 26-35.
88. Palter, Jaime B., Stephen M. Griffies, **Eric D. Galbraith**, Anand Gnanadesikan, Bonita L. Samuels, Andreas Klocker, 2014. The deep ocean buoyancy budget and its temporal variability, *Journal of Climate*, 27 (2), 551-573.

89. Bernardello, R., I. Marinov, J.B. Palter, J.L. Sarmiento, **E.D. Galbraith**, R.D. Slater, 2013. Response of the Ocean Natural Carbon Storage to Projected 21st Century Climate Change. *Journal of Climate*.
90. Duteil, Olaf, W. Koeve, A. Oschlies, D. Bianchi, **E. Galbraith**, I. Kriest, and R. Matear, 2013. A novel estimate of ocean oxygen utilisation points to a reduced rate of respiration in the ocean interior. *Biogeosciences*, 10, 7723-7738.
91. Yang, S., **E. Galbraith** and J. Palter, 2013. Coupled climate impacts of the Drake Passage and the Panama Seaway. *Climate Dynamics*.
92. Daniele Bianchi, **Eric D. Galbraith**, David A. Carozza, K.A.S. Mislan and Charles Stock. Vertically migrating animals intimately linked with ocean oxygen minimum zones, 2013. *Nature Geoscience*, doi:10.1038/NGEO1837.
93. **Galbraith, E.**, M. Kienast, A.L. Albuquerque, M. Altabet, D. Bianchi, S.C. Quintana, R. De Pol Holz, N. Dubois, R. Francois, T.-C. Hsu, T. Ivanochko, S. Jaccard, S.-J. Kao, T. Kiefer, S. Kienast, M. Lehmann, P. Martinez, M. McCarthy, J. Möbius, T. Pedersen, T.M. Quan, E. Ryabenko, A. Schmittner, R. Schneider, A. Schneider-Mor, M. Shigemitsu, D. Sinclair, C. Somes, A. Studer, J.-E. Tesdal, R. Thunell, J.-Y. Yang, 2013. Global nitrogen isotopic constraints on the acceleration of oceanic denitrification during deglacial warming. *Nature Geoscience*, doi:10.1038/NGEO1832.
94. Daniele Bianchi, Charles Stock, **Eric D. Galbraith** and Jorge L. Sarmiento, 2013. Diel vertical migration: ecological controls and impacts on the biological pump in a one-dimensional ocean model. *Global Biogeochemical Cycles* (27), doi:10.1002/gbc.20031.
95. Moore, C.M., M.M. Mills, K.R. Arrigo, I. Berman-Frank, L. Bopp, P.W. Boyd, **E.D. Galbraith**, R.J. Geider, C. Guieu, S.L. Jaccard, T.D. Jickells, J. LaRoche, T. Lenton, N.M. Mahowald, E. Marañón, I. Marinov, J.K. Moore, T. Nakatsuka, A. Oschlies, M.A. Saito, T.F. Thingstad, A. Tsuda, O. Ulloa, D. Wallace, 2013. Oceanic nutrient limitation: processes, patterns and potential for change. *Nature Geoscience*, doi:10.1038/NGEO1765.
96. Jaccard, S.L. and **E.D. Galbraith**, 2013. Direct ventilation of the North Pacific did not reach the deep ocean during the last deglaciation. *Geophysical Research Letters*, Vol. 40, 199-203.
97. Tesdal, J.-E., **E.D. Galbraith** and M. Kienast, 2013. Nitrogen isotopes in bulk marine sediment: linking seafloor observations with subseafloor records. *Biogeosciences* (10), 101-118.
98. Robinson, R., M. Kienast, A.L. Albuquerque, M. Altabet, S.C. Quintana, R. De Pol Holz, N. Dubois, R. Francois, **E. Galbraith**, T.-C. Hsu, T. Ivanochko, S. Jaccard, S.-J. Kao, T. Kiefer, S. Kienast, M. Lehmann, P. Martinez, M. McCarthy, J. Möbius, T. Pedersen, T.M. Quan, E. Ryabenko, A. Schmittner, R. Schneider, A. Schneider-Mor, M. Shigemitsu, D. Sinclair, C. Somes, A. Studer, R. Thunell, J.-Y. Yang, 2012. A review of nitrogen isotopic alteration in marine sediments. *Paleoceanography* (27) PA4203. doi:10.1029/2012PA002321.
99. Duteil, O., W. Koeve, A. Oschlies, O. Aumont, D. Bianchi, L. Bopp, **E. Galbraith**, R. Matear, J.K. Moore, J. Sarmiento and J. Segschneider, 2012. Preformed and regenerated phosphate in ocean general circulation models: can right total concentrations be wrong? *Biogeosciences* (9), 1797-1807.
100. Andrew J. Pinsonneault, H. Damon Matthews, **Eric Galbraith**, Andreas Schmittner, 2012. Calcium carbonate production response to future ocean warming and acidification. *Biogeosciences*, (9) 2351-2364.

101. Kwon, E.Y., M.P. Hain, D.M. Sigman, **E.D. Galbraith**, J.L. Sarmiento, J.R. Toggweiler, 2012. North Atlantic ventilation of southern-sourced deep water in the ice age ocean. *Paleoceanography* (27) PA2208. doi:10.1029/2011PA002211
102. Daniele Bianchi, John P. Dunne, Jorge L. Sarmiento, **Eric D. Galbraith**, 2012. Data-based estimates of suboxia, denitrification and N₂O production in the ocean, and their sensitivities to change. *Global Biogeochemical Cycles* (26) GB2009. doi:10.1029/2011GB004209
103. Jaccard, S.L. and **E.D. Galbraith**. Large climate-driven changes of oceanic oxygen concentrations during the last deglaciation. *Nature Geoscience* (5), February 2012.
104. Rodgers, K.B., S.E.M. Fletcher, D. Bianchi, C. Beaulieu, **E.D. Galbraith**, A. Gnanadesikan, A.G. Hogg, D. Iudicone, B. Linter, T. Naegler, P.J. Reimer, J.L. Sarmiento, R.D. Slater, 2011. Interhemispheric gradient of atmospheric radiocarbon reveals natural variability of Southern Ocean winds. *Climate of the Past*, 7, 1123-1138.
105. **Galbraith, Eric D**, E.-Y. Kwon, A. Gnanadesikan, K.B. Rodgers, S. Griffies, D. Bianchi, J. Sarmiento, J. Dunne, J. Simeon, R.D. Slater, A. Wittenberg, I. Held, 2011. Climate Variability and Radiocarbon in the CM2Mc Earth System Model. *Journal of Climate* (24) 4230-4253.
106. Somes, C. J., A. Schmittner, **E. D. Galbraith**, M. F. Lehmann, M. A. Altabet, J. P. Montoya, R. M. Letelier, A. C. Mix, A. Bourbonnais, and M. Eby (2010). Simulating the global distribution of nitrogen isotopes in the ocean. *Global Biogeochemical Cycles*, 24, GB4019, doi:10.1029/2009GB003767
107. Jaccard, S.L., **Galbraith, E.D.**, Sigman, D.M. and Haug, G.H. (2010). A pervasive link between Antarctic ice cores and subarctic Pacific sediment records over the past 800 kyrs. *Quaternary Science Reviews*, 29, 206-212.
108. **Galbraith, Eric D**, Anand Gnanadesikan, John P Dunne, and Michael R Hiscock (2010). Regional impacts of iron-light colimitation in a global biogeochemical model. *Biogeosciences*, 7, 1043-1064.
109. Jaccard, Sam L, **Eric D Galbraith**, Daniel M Sigman, Gerald H Haug, Roger Francois and Tom F Pedersen (2009). Subarctic Pacific evidence for a glacial deepening of the oceanic respired carbon pool. *Earth and Planetary Science Letters*. doi:10.1016/j.epsl.2008.10.017.
110. Kienast, Markus, Moritz F Lehmann, Axel Timmermann, **Eric D Galbraith**, Timothy Bolliet, Anne Holbourn, Claire Normandeau and Carlos Laj (2008). A mid-Holocene transition in the nitrogen dynamics of the western equatorial Pacific: Evidence of a deepening thermocline? *Geophysical Research Letters*. doi:10.1029/2008GL035464.
111. Schmittner, Andreas and **Eric D Galbraith** (2008). Glacial greenhouse gas fluctuations controlled by ocean circulation changes. *Nature* 456, 373-376.
112. **Galbraith, Eric D**, Markus Kienast, Samuel L Jaccard, Tom F Pedersen, Brigitte G Brunelle, Daniel M Sigman and Thorsten Kiefer (2008). Consistent relationship between global climate and surface nitrate utilization in western Subarctic Pacific throughout last 500 ky. *Paleoceanography*, doi:10.1029/2007PA001518.
113. Schmittner, Andreas, Andreas Oeschlies, H Damon Matthews, and **Eric D Galbraith** (2008). Future changes in climate, ocean circulation, ecosystems and biogeochemical cycling simulated for a business-as-usual CO₂ emission scenario until year 4000 AD. *Global Biogeochemical Cycles*.

114. **Galbraith, Eric D**, Samuel L Jaccard, Tom F Pedersen, Daniel M Sigman, Gerald H Haug, Mea Cook, John Southon and Roger Francois (2007). Carbon dioxide release from the North Pacific abyss during the last deglaciation. *Nature*, 449, 890-893.
115. Schmittner, Andreas, **Eric Galbraith**, Steven Hostetler, Tom Pedersen and Rong Zhang (2007). Large fluctuations of dissolved oxygen in the Indian and Pacific Oceans during Dansgaard-Oeschger oscillations caused by variations in North Atlantic deep water subduction. *Paleoceanography* 22, doi 10.1029/2006PA001384.
116. Meissner, Katrin, **Eric D Galbraith** and Christoph Völker (2005) Denitrification under glacial and interglacial conditions: a physical approach. *Paleoceanography* Vol. 20, doi. 10.1029/2004PA001083.
117. **Galbraith, Eric D**, Markus Kienast, Tom F Pedersen, and Stephen E Calvert (2004). Glacial-interglacial modulation of the marine nitrogen cycle by oxygen-supply to intermediate waters. *Paleoceanography* Vol. 19, doi. 10.1029/2003PA001000.

Book Chapters

Galbraith, Eric D, Sigman, Daniel, Pedersen, Tom and Robinson, Rebecca S. Past changes in the marine nitrogen cycle. In *Nitrogen in the Marine Environment*, 2nd edition; Capone, D., Bronk, D., Mulholland, M. and Carpenter, E. (eds.), Elsevier 2008, pp 1497-1535. doi 10.1016/B978-0-12-372522-6.00034-7. (Invited chapter)

Non-refereed Contributions

Galbraith, E.D. Societies with Little Money Are among the Happiest on Earth. *Scientific American*, June 28, 2024.

Scherrer, Kim and **Galbraith, E D**, 2020. The risk of underestimating long-term fisheries creep. *Ecology and Society*, 25 (1):18. doi.org/10.5751/ES-11389-250118

Hatton, Ian and **Galbraith, E D**, 2020. Commentary on “Key ecological parameters of immobile versus locomotive life” by V.G. Gorshkov and A.M. Makarieva. *Russian Journal of Ecosystem Ecology*, Vol 5 (2). doi: 10.21685/2500-0578-2020-2-5

Galbraith, Eric D and van den Bergh, Jeroen. Carbon tax to aid economic recovery. *Nature* (correspondence). Vol 521, 21 May 2020.

Jaccard, Samuel L and **Galbraith, Eric D**, 2018. Push from the Pacific. *Nature Geoscience* (News and Views). April, 2018.

Galbraith, Eric D, James Watson and Myron Peck. Predicting Fish From Physics: Strengths, Weaknesses and Ways Forward. *IMBER News* (27), 2014.

Kwon, Eun-Young and **Galbraith, Eric D**. When the Dust Settles. *Nature Geoscience* (News and Views). June, 2013.

Rafter, Patrick A., Jaccard, Samuel L., **Galbraith, Eric D**, Kienast, Markus and Kiefer, Thorsten, 2012. The nitrogen cycle in the ocean: 2nd NICOPP meeting. *PAGES news* (20) 48.

Galbraith, Eric D, Kienast, Markus and Kiefer, Thorsten, 2010. The nitrogen cycle in the ocean, past and present. *PAGES news* (18) 92-93.

Galbraith, Eric D and Jaccard, Samuel L, 2008. An increase in the ventilation of the abyssal North Pacific Ocean at the end of the last ice age. *PAGES news* (16) 13-14.

Selected Conference Presentations

Scale, distribution and dynamics of the technosphere. Gordon Research Conference on Unifying Ecology Across Scales. University of Southern New Hampshire, July 2024 (Invited talk).

Estimating possible nonlinearities in the Human-Earth system with Earth system economics. EGU Annual meeting, Vienna, April 2024 (Oral).

Less is More: the large gains to be made by fishing much less. Growth vs. Climate Conference, Barcelona, March 2024 (Oral).

Global biodiversity from species abundance and size spectra. Gordon Research Conference on Predictive Ecology. Stonehill College, MA, June 2023. (Poster).

Learning from fishermen: using global observations of fishing activity to better understand marine animals and their links to biogeochemistry. Sixth Xiamen Symposium on Marine Environmental Sciences, Xiamen, January 2023 (Keynote).

The global human day. International Association for Time Use Research Annual Meeting, Montreal, August 2022 (Oral).

Linking global material end-uses with human activities for an integrated Earth System perspective. Gordon Research Conference on Industrial Ecology. Sunday River, Maine, June 2022. (Poster)

Flow of energy through the global marine ecosystem. Canadian Society of Zoologists Annual Meeting, May 2021 (Keynote).

From whirls to wellbeing: A bird's eye view of change from integrative global human-ocean models. IM-BER Future Oceans 2 Conference, Brest, June 2019 (Keynote).

Modeling the flow of energy within the global marine ecosystem. Jornada d'Avenços en Ecologia, Catalan Society of Biology and the Centre of Advanced Studies of Blanes, October 2018 (Keynote).

Large changes in ocean oxygenation during the last ice age: observations, mechanisms and ecosystem responses to change. Ocean Deoxygenation: Drivers and consequences International Conference, Kiel, September 2018 (Keynote).

Getting the big picture in focus: assessing climate and human factors with global coupled human-ocean models. Effect of Climate Change on the World Oceans, Washington DC, June 2018 (Keynote).

How CO₂, ice sheets and astronomical forcings conspire to alter the strength of the AMOC, volume of NADW, and ocean carbon storage: Expectations from a coarse resolution model. Ocean Sciences meeting, Portland USA, February 2018. (Oral, invited)

Finding the sweet spot for abrupt climate change: Influences of atmospheric CO₂, orbital forcing and terrestrial ice sheets on AMOC stability. Eric Galbraith, Casimir deLavergne. PAGES Open Science Meeting, Zaragoza, Spain, May 2017. (Oral)

From Physics to Fishermen: Linking Climate to Biogeochemistry to Ecosystem to Humans. Eric Galbraith. Future Earth Days, Paris, December 2016. (Invited plenary)

The impacts of pCO₂, orbital forcing and terrestrial ice sheets on global climate and deep water formation in a suite of coupled model simulations. Eric Galbraith. International Conference on Paleoclimatology, Utrecht, Netherlands, September 2016. (Poster)

Running hotter, faster, shallower: Acceleration of the marine nitrogen cycle from the Last Glacial Maximum, and implications for the future. Eric Galbraith. AGU Fall meeting, San Francisco, December 2015. (Oral, invited)

The Bioeconomic marine Trophic Size-spectrum model (BOATS). Eric Galbraith, David Carozza and Daniele Bianchi. CLIoTOP working group, San Sebastien, September 2015. (Oral)

Did a transient AMOC strengthening trigger Antarctic glaciation at the Eocene-Oligocene transition? Eric Galbraith, Genevieve Elsworth and Galen Halverson. AGU Joint Assembly, Montreal, May 2015. (Oral)

Does nitrogen limitation prevent runaway glaciations? Eric Galbraith. Leopoldina Symposium, Halle, Germany, March 2015. (Oral)

Climate impact on ocean oxygenation and nitrogen cycling. Eric Galbraith. ASLO Aquatic Sciences meeting, Granada, Spain, February 2015 (Keynote).

Stratification Boomerang: A nonlinear dependence of deep Southern Ocean ventilation on $p\text{CO}_2$. Eric Galbraith and Tim Merlis. AGU Fall Meeting, San Francisco, December 2014 (Oral).

Coupled roles of ocean ventilation and the marine ecosystem in the deglacial CO_2 rise. Eric Galbraith. Goldschmidt, Sacramento, CA, June 2014 (Keynote)

Missing the forest for the N:P? A simple model for community stoichiometry. Eric Galbraith. Ocean Sciences, Honolulu, Hawaii, February 2014. (Oral)

Enough with the Westerlies! The potential importance of deep Southern Ocean convection in past and present changes. Eric Galbraith, Casimir DeLavergne, Jaime Palter, Irina Marinov and Rafaele Bernardello. AGU Fall Meeting, San Francisco, December 2013. (Oral)

Deglacial changes in oxygen minimum zones: the role of physics, phytoplankton and...fish? Eric Galbraith and Daniele Bianchi. AGU Fall Meeting, San Francisco, December 2013. (Oral, invited)

The pH effect on reservoir ages and atmospheric $\Delta^{14}\text{C}$. Eric Galbraith, Daniele Bianchi and Jorge Sarmiento. Paleoclimate Model Intercomparison Workshop, Corvallis, December 2013. (Oral)

Two modes of variability in the ocean biological pump during the deglacial $p\text{CO}_2$ rise. Eric Galbraith. PAGES Open Science Meeting, Goa, India, February 2013. (Oral)

Linking biogeochemistry with fish and fisheries economics. Eric Galbraith. QuébecOceans conference, Montreal, November 2012. (Oral)

Upper ocean deoxygenation and denitrification at the end of the last ice age. Eric Galbraith and Sam Jaccard. Goldschmidt Montreal, 2012. (Oral, invited)

Testing the biogeochemical impacts of upper trophic levels with a structurally efficient global model. Galbraith, Eric, Daniele Bianchi, David Carozza. Ocean Sciences, Salt Lake City, 2012. (Oral)

Deglacial changes in the subarctic Pacific ecosystem: links to ocean circulation and deoxygenation. Galbraith, Eric, Taoufik Radi and Samuel Jaccard. American Geophysical Union Fall Meeting, San Francisco, CA, December 2011. (Oral, invited)

Vertical mixing, nutrients and the salty glacial abyss. Galbraith, Eric. International Conference on Paleocceanography, San Diego, CA, September 2010. (Oral, invited)

Replumbing the biological pump in global climate models. Galbraith, Eric. PAGES Open Science Meeting, Corvallis, Oregon, June 2009. (Oral, invited)

The spontaneous development of Fe-limited, Si-rich waters in polar oceans with rapid nutrient supply. Galbraith, Eric and Jorge Sarmiento. Goldschmidt Conference, Davos, CH, June 2009. (Oral)

Abrupt increase of N_2O production in the Indo-Pacific at the onset of the Bolling warm period. Galbraith, Eric, Andreas Schmittner and Samuel Jaccard. Goldschmidt Conference, Vancouver, July 2008. (Oral)

Variations of water column oxygenation over the last glacial-interglacial cycle: causes and impacts. Galbraith, Eric, Andreas Schmittner and Samuel Jaccard. Workshop on Novel Insight Into Redox and Nutrient Cycles in the Ocean, Kiel, Germany, October 2008. (Oral, invited)

Invited Academic Talks

Aalto University, Finland, October 2025
Google Paradigms of Intelligence, May 2025
University of Vermont, USA February 2025
University of Cologne, Germany November 2024
IBS Centre for Climate Physics, Pusan, Korea May 2024
Institut de Ciències del Mar, Barcelona, February 2024
Institute for Social Ecology, Vienna, November 2023
Woods Hole Oceanographic Institute, February 2022
Yale University, April 2021
University of Southern Mississippi, January 2021
Weizmann Institute, July 2019
University of Exeter, March 2019
Dalhousie University, January 2019
LSCE, Gif-sur-Yvette, France, February 2018
CREAF, Barcelona, May 2017
National Oceanography Centre, Southampton, October 2016
Dalhousie University, July 2016
Harvard University, May 2016
Princeton University, March 2016
Instituto de Ciencias del Mar, Barcelona, February 2016
Cambridge University, February 2016
ETH-Zurich, November 2015
University of Bern, November 2015
Geophysical Fluid Dynamics Laboratory, May 2015
Georgia Institute of Technology, April 2015
University of South Carolina, November 2014
University of British Columbia, September 2014
University of Bergen, April 2014
University of Toronto, CGCS Distinguished Lecturer Series, January 2013
University of Quebec at Rimouski, June 2013
Dalhousie University, April 2013
University of Ottawa, November 2012
Princeton University, May 2012
University of South Florida, March 2012
University of California at Santa Cruz, February 2012
Stanford University, December 2011
LSCE, Gif-sur-Yvette, France, September 2011
Canadian Meteorological and Oceanographic Society, Ottawa, April 2011.
University of Washington, March 2011.
Cambridge University, November 2010.
ETH-Zurich, December 2009.
Instituto de Ciencias del Mar, Barcelona, November 2009.
Universitat Autònoma de Barcelona, November 2009.
University of Pennsylvania, October 2009.
Columbia University (Lamont-Doherty Earth Observatory), March, 2009.
Laval University, November 2008.
University of Quebec at Montreal, November 2008.
GEOMAR, Kiel, October 2008.
McGill University, April 2008.
Columbia University (NASA-GISS), October 2007.

Columbia University (Lamont-Doherty Earth Observatory), January 2007.
Dalhousie University, January 2007.
MIT, November 2006.
Rutgers University, October 2006.
University of Victoria, February 2006.
Princeton University, September 2005.
University of Bremen, July 2005.
University of Oregon (Corvallis), May 2005.

Successful Funding

2021-2028: Canada Research Chair (Tier 1).

\$1,400,000 over 7 years.

2020-2025: NSERC Discovery Grant.

\$375,000 over 5 years.

2019-2022: McGill Start-Up (including postdoctoral support).

\$450,000.

2019-2020: Suport a Grups de Recerca (ImpactANT), Generalitat de Catalunya.

€9,000 over 2 years (Galbraith portion of total €45,000).

2017-2020: ISIpedia-marine ecosystems and fisheries (ERA-4CS / APCIN).

€99,200 over 3 years (sole applicant).

2016-2021: European Research Council Consolidator Grant (BIGSEA project).

€1,600,000 over 5 years (sole applicant).

2013-2016: NSERC CCAR (VITALS) (co-applicant with 22 others).

\$70,000 over 3 years (Galbraith portion of total \$5,000,000).

2013-2014: Compute Canada Resource Allocation.

~\$232,000 equivalent in CPU hours (660 cpu-years) over 2 years.

2012-2015: MEOPAR Network Centre of Excellence (co-applicant with 37 others)

\$112,000 over 4 years (Galbraith portion of total \$25,000,000).

2011-2015: NSERC Discovery Grant Supplement for Early Career Researchers.

\$20,000 over 4 years.

2012-2014: FQRNT New Researchers grant.

\$40,000 over 2 years.

2010-2014: Canadian Institute for Advanced Research (CIFAR) Scholar research support.

\$125,000 over 5 years.

2010-2015: NSERC Discovery Grant.

\$100,000 over 5 years.

2010-2013: CFI Leaders Opportunity Fund.

\$259,000.

2010-2012: Compute Canada Resource Allocation.

~\$150,000 equivalent in CPU hours, over 3 years.

2010: NSERC Research tools and Infrastructure (co-applicant with three others, PI Mucci).

\$31,000.

2009-2012: McGill Start-up.

\$103,600.

2007-2009: National Oceanic and Atmospheric Administration (NOAA) / Co-operative Institute for Climate Science (CICS).

\$256,000 USD over 2 years.

2003-2005: NSERC PGS-B in support of Ph.D. project.

2001: NSERC / DFO supplement in support of Ph.D. project.

2000-2002: NSERC PGS-A in support of M.Sc. work (converted to Ph.D.).

Trainees

Undergraduate: Jan-Erik Tesdal (2010-2011 NSERC USRA)

Julia Stepanuk (2012-2013)

Aryeh Feinberg (2012-2014)

Nicolas Brown (2013-2014 NSERC USRA)

Alexa Haughan (2013-2014)

Gerard Solanes Hernandez (2018-2019)

Ella Kantor (2020-2021)

Xinbei Wan (2020-2021)

Zoya Qudsi (2020-2021)

Veronica Xia (2020-2023)

Shirley Xu (2020-2023)

Elena Frie (2021-2023)

Maya Willard-Stepan (2022-2023)

Majdi Hunter-Batal (2022-2024)

Justin Lipper (2023-2024)

Ava Fuchs (2023-2025)

Eva Clancy (2024-2025)

Cassiana Silva Young (2025)

Masters: Simon Yang (2011-2012)

Casimir DeLavergne (2012-2013, Mysak Fellowship, co-advised)

Geneviève Elsworth (2012-2014, Geotop & Leroy scholarships, co-advised)

Lucas Kavanagh (2013-2015, Canada Graduate Scholarship)

William Fajzel (2020 - 2022)

Tanya Matitia (2020 - 2022)

Maxwell Kaye (2021 - 2023)

Yan Su (2025 -)

- Doctoral:** David Carozza (2010-2015, Canada Graduate Scholarship, Leroy scholarship)
 Laura Castro de la Guardia (2014-2019, University of Alberta, co-advised)
 Maria Raja Sánchez (2015-2019, co-advised)
 Kim Scherrer (2016-2020)
 Sven Pallacks (2018-2023, co-advised)
 Abdullah-Al Faisal (2022- , Vanier Scholarship)
 William Fajzel (2023 -, SSHRC Scholarship)
 Maxwell Kaye (2023 -, co-advised with Mathematics)
- Post-doctoral:** Taoufik Radi (2010-2012, FQRNT fellowship, co-advised)
 Daniele Bianchi (2011-2014, CIFAR fellowship)
 Olivier Cartapanis (2012-2014)
 Mariona Claret (2014-2016)
 David Carozza (2015-2016)
 Sarah Eggleston (2016-2017, Swiss Mobility Fellowship)
 Jérôme Guet (2016-2018)
 Priscilla LeMezo (2017-2020)
 Sara Miñarro (2017-2021)
 Ian Hatton (2018-2020; 2022-)
 Ryan Heneghan (2018-2020)
 Dan Zhu (2019-2020)
 Nuria Galiana (2020-2021)
 Daniel Horen Greenford (2025-, SSHRC fellowship)

University Teaching

Environmental Geology , EPSC 181. McGill.	2022, 2023, 2025
Earth System Applications , ESYS 500. McGill.	2014, 2020, 2021, 2022, 2024 (co-taught)
Climate and the Carbon Cycle , EPSC 513. McGill.	2014
Earth System Processes , ESYS 200. McGill.	2013, 2014, 2015 (co-taught)
Climates of the Cenozoic , EPSC 551. McGill.	2011, 2013
Understanding Planet Earth , EPSC 201. McGill.	2012
Ocean Biogeochemical Dynamics , EPSC 552. McGill.	2011, 2014
Field School 2 , EPSC 331. McGill.	2011 (co-taught)
Antarctic Field Study , EPSC 552. McGill.	2011
Sedimentary Geology , EPSC 455. McGill.	2010
The Ocean Ecosystem , EOSC 315. UBC.	2005 (co-taught)
The Ocean Environment , EOSC 314. UBC.	2005, 2004 (co-taught)

University Activities

Director, Earth System Science Program (2023-2025)

Examination committees

McGill University

Jianghua Wu, Geography, PhD 2009.
 Louis-Philippe Nadeau, Atmospheric and Oceanic Sciences, PhD 2011.
 Stelly Lefort, Earth and Planetary Sciences, PhD 2012. (Internal examiner)
 Marc-Olivier Brault, Atmospheric and Oceanic Sciences, MSc 2012. (External examiner)
 Georgina Paull, Atmospheric and Oceanic Sciences, MSc 2013. (External examiner)
 Christophe Simmons, Atmospheric and Oceanic Sciences, PhD 2013. (Internal examiner)
 Thi Hao Bui, Earth and Planetary Sciences, PhD 2014 (Internal member).
 Silvie Harder, Geography PhD 2019 (Pro-Dean).
 Ge Li, EPS PhD 2020 (Internal member).
 Nicholas Soulard, AOS PhD 2020 (External member).
 Shaun Sellers, Natural Resource Sciences PhD 2021 (Internal examiner).
 Roman Procyk, Physics, MSc 2021 (External examiner).
 Holly Han, Earth and Planetary Sciences, PhD 2021 (Internal member).
 Benjamin Keenan, Earth and Planetary Sciences, PhD 2022 (Internal examiner).
 Niklas Petersen, Earth and Planetary Sciences, PhD comprehensive 2022 (examiner).
 David Purnell, Earth and Planetary Sciences, PhD 2022 (Internal examiner).
 Julia Morales-Aguirre, Earth and Planetary Sciences, MSc 2022 (Internal examiner).
 Simone LeChevere, Atmosphere and Ocean Sciences, MSc 2023.
 Mathilde Jutras, Earth and Planetary Sciences, PhD 2023.

Princeton University

Brigitte Brunelle, PhD 2009 (Internal member)

Universitat Autònoma de Barcelona

Adam Finch, Institut de Ciència i Tecnologia Ambientals, MSc 2020.
 Nick Martin, Institut de Ciència i Tecnologia Ambientals, MSc 2018.

External examiner

University of Rhode Island

Matthew Horn, Oceanography, PhD 2011.

University of Bergen

Eirik Galaasen, Department of Earth Sciences, PhD 2014.

Cambridge University

Emma Freeman, Department of Earth Sciences, PhD 2016.

Université de Montpellier

Jérôme Guet, Department of Earth Sciences, PhD 2016.

University of Southampton

Andrew Gravelle, National Oceanography Centre, PhD 2016.

ETH Zurich

Simon Yang, Environmental Physics, PhD 2017.

University of Tasmania

Devi Veytia, Centre for Oceans and Cryosphere, PhD 2022.

University of British Columbia

Birgit Rogalla, Department of Earth Ocean and Atmospheric Science, PhD 2023.

Concordia University

Miles Barette Duckworth, MSc 2025.

Advisory committees

McGill University

Jian Zhou, Geography, MSc (2009-2011)
 Michael Patterson, Earth and Planetary Sciences, PhD (2009-2014)

Qiang Chen, Earth and Planetary Sciences, MSc (2009-2012)
 Christopher Simmons, Atmospheric and Oceanic Sciences, PhD (2009-2013)
 Gregor Lucic, Earth and Planetary Sciences, PhD. (2010-2015)
 Lucie Hubert-Théou, Earth and Planetary Sciences, PhD (2010-2013)
 Jesse Colangelo-Lillis, Earth and Planetary Sciences, PhD (2012-2016)
 Peter Crockford, Earth and Planetary Sciences, PhD (2013-2015)
 Julien Jodoin, Biology, MSc (2014-2015)
 Lea Baumser, Earth and Planetary Sciences, MSc (2021-2022)
 Julia Morales-Aguirre, Earth and Planetary Sciences, MSc (2020-2022)
 Nakiya Noorbhai, Geography PhD (2023-)
 Jared Splinter, Earth and Planetary Sciences, PhD (2023-)

Concordia University

Andrew Pinnosault, MSc (2009-2011)
 Étienne Guertin, PhD (2019-)

Dalhousie University

Lina Garcia-Suarez, PhD (2019-)

Academic committees

Universitat Autònoma de Barcelona

Scientific steering committee, ICTA Maria de Maeztu Excellence Program (2015-2019)
 Guarantor, ICTA Maria de Maeztu Excellence Program (2017-2019)

McGill University

Earth and Planetary Science seminar coordinator, 2009-2014
 Faculty of Science Committee on Student Standing. 2011-. (as Chair, 2013-.)
 Atmospheric and Oceanic Sciences, Physical Oceanographer Search. 2010.
 Earth and Planetary Science Undergraduate Curriculum Review Committee. 2012.
 Earth and Planetary Science Scholarship Committee. 2013.
 Earth and Planetary Science Undergraduate Recruitment/Outreach. 2013-2015.
 New Vic Design Advisory Committee. 2020-
 Senate Committee on Physical Development. 2020-
 Earth and Planetary Science Undergraduate Program Advisor. 2021.
 Earth and Planetary Science Graduate Program Director. 2022.
 Lawrence Light Fellowship Committee. 2021-
 Senate Committee on Student Services. 2021-
 Selection Committee for CGS Doctoral Fellowship. 2022.
 CRC-JMP-WDS Selection Committee. 2022-2023.
 Equity and Workplace Climate Committee. 2024 -
 Earth and Planetary Science Awards Committee. 2024 -
 Earth and Planetary Science Chair's Advisory Committee. 2024 -
 Faculty of Science Scholarships and Awards Committee. 2024 -

General lectures

Soup and Science mini-lectures, September 2009,2012,2020; McGill Goes to Antarctica, March 2011;
 STARS Antarctic expedition, May 2012; McGill Food for Thought lecture, October 2014.

Scholastic Awards

2005: Outstanding student poster award, AGU Fall Meeting, San Francisco

2004: Outstanding student poster award, International Conference on Paleoceanography 8, Biarritz, France

2002: Thomas and Marguerite MacKay scholarship from the University of British Columbia

2001: Outstanding student poster award, AGU Fall Meeting, San Francisco; Outstanding student poster award, International Conference on Paleoceanography 7, Sapporo, Japan

2000: Grant-in-aid awarded by the American Association of Petroleum Geologists; Egil H. Lorentzen Scholarship from the University of British Columbia

1997: Logan Gold Medal from McGill University

1996: Geological Association of Canada student internship prize; R.P.D. Graham scholarship from McGill University

1995: Reinhardt Scholarship from McGill University; Quebec Association of Geologists and Geophysicists bursary; Canadian Mineralogical Society student prize

External Activities

Working group co-leader

Global model co-ordinator, Fishery and Marine Ecosystem Model Intercomparison Project (FishMIP) (2015-2021)

Nitrogen Cycle in the Ocean, Past and Present (NICOPP) (on hiatus)

Workshop leadership / participation

October 2025. Human Behaviour in Global Change Models. Aspen Global Change Institute, Colorado, USA.

September 2025. Humanscapes workshop. Aalto University, Helsinki, Finland.

November 2024. Human and Earth System Coupled Research (HESCOR) workshop. University of Cologne, Germany.

May 2024. Intertwined biosphere workshop. Swedish Royal Academy of Sciences, Stockholm.

October 2022. COD-REMAP workshop. Dalhousie University, Halifax.

October 2018. FishMIP workshop convenor. Institut de Ciències del Mar, Barcelona. Co-leader of 3-day workshop (with Derek Tittensor).

October 2017. Critical Constraints on the marine ecosystem, IMBER IMBIZO V, Woods Hole USA. Co-leader of week-long workshop (with Laurent Bopp).

May 2017. Global Fishing Watch workshop. Madrid, Spain.

October 2016. Quaternary Interglacial Working Group (QUIGS) meeting. Montreal, Canada.

September 2016. ICES SICCMME workshop on Modelling Effects of Climate Change on Fish and Fisheries, Riga, Latvia.

July 2016. Paleogenie: Earth System Coevolution. Bristol, UK.

June 2016. Intersectoral Integrated Model Intercomparison Project (ISIMIP) workshop, Potsdam, Germany.

December 2013. Paleoclimate Model Intercomparison Project (Phase 3). Corvallis, OR.

July 2011. Nitrogen Cycle in the Ocean, Past and Present (NICOPP). Halifax, NS.

November 2010. IGBP Fast-track initiative on nutrient limitation in the ocean. Southampton, UK.

July 2010. Princeton University/GFDL Climate Process Meeting,

May 2010. Canadian Institute for Advanced Research (CIFAR) Oceans workshop, Montreal, QC.

May 2010. Nitrogen Cycle in the Ocean, Past and Present (NICOPP). Montreal, QC. *Workshop organizer and fundraiser.*

March 2010. Ocean deoxygenation workshop. NASA Ames, California.

October 2009. Agouaron nitrogen workshop. Scottsdale, Arizona.

May 2006. Corewall workshop. International Ocean Drilling Program (IODP) headquarters, Washington DC.

Session Convener

American Geophysical Union Fall Meeting, 2024. Towards Improved Understanding of Coupled Human-Earth System Interactions.

Bridging Earth System Science and Earth System Governance. Earth System Governance annual conference, Nijmegen, Netherlands, 2023.

Known Unknowns and Unknown Unknowns: What are we missing, and how much impact lies in the gaps? Impacts 2017 conference, Potsdam, Germany.

Gordon Conference on Chemical Oceanography, 2017, New London, NH, USA. (Discussion leader.)

Geophysical Union Joint Meeting, 2015, Montreal. Silicate weathering through Earth history.

Integrated Marine Biogeochemistry and Ecosystem Research Conference, Bergen, Norway, 2014. Predicting Fish from Physics: Strengths, weaknesses, and ways forward.

International Conference on Paleoceanography, Sitges, Spain, 2013. Ocean biogeochemistry and ecosystems. (in absentia)

American Geophysical Union Fall Meeting, 2012. Quantifying fluxes in the marine nitrogen cycle, past and present.

Goldschmidt, Montreal, 2012. Past and future changes in ocean circulation.

American Geophysical Union Fall Meeting, 2008. Past changes in the biological pump: Integrating Theory with Observations.

Reviewer

Journals: Science, Science Advances, Nature, Nature Communications, Nature Ecology and Evolution, Nature Geoscience, Nature Sustainability, Proceedings of the National Academy of Sciences, PLOS ONE, WIREs Climate Change, Global Environmental Change, Global Ecology and Biogeography, Science of the Total Environment, Earth System Dynamics, Earth's Future, Proceedings of the Royal Society B, Geoscientific Model Development, JAMES, Ecological Modeling, Fish and Fisheries, Social Indicators Research, Frontiers in Marine Science, Marine Chemistry, Deep-Sea Research, Oceanography, Progress in Oceanography, Current Climate Change Reports, Journal of Climate, Climate Dynamics, Biogeosciences, Global Biogeochemical Cycles, Paleoceanography, G-cubed, Geophysical Research Letters, Earth and Planetary Science Letters, Geology, Marine Geology, Quaternary Science Reviews, American Geophysical Union Monographs, Scientia Marina, Nature Education, Scientific Reports, Acta Psychologica, Social Science and Humanities Open.

Funding Agencies: National Science Foundation (NSF), Natural Science and Engineering Research Council of Canada (NSERC), Canada Research Chairs (CRC), Natural Environment Research Council (NERC), The Royal Society (UK), Netherlands Organisation for Scientific Research (NWO), Swiss National Science Foundation (SNF).

Memberships

Member of the American Geophysical Union (AGU), Association for Limnology and Oceanography (ASLO) and International Association for Time Use Research (IATUR).

Summer school lecturer

Redfield was right, Redfield was wrong: simplifications in a sea of flexible stoichiometry. Margalef Summer Colloquium, Barcelona, July 2017.

Ocean Biogeochemistry: Teaching a numerical ocean to breathe. European Earth System and Climate Modelling School (E2SCMS), Helsinki, June 2016

Global Modelling, and Past records of biogeochemistry. IMBER ClimECO summer school, Shanghai, August 2014.

Biogeochemical Modelling, and Biogeochemistry on Long Timescales. SOLAS summer school, Corsica, September 2011.

Advisory Roles

International Scientific Advisory Board, PalMod German Climate Modeling Initiative (2016-2019).

Science capstone course design advisor, John Abbott College (2023).

Committees

Reseau Québec Maritime scientific evaluation committee, 2018.

Canadian Consortium for Ocean Drilling, 2009-2013. McGill representative.

Compute Canada National Resource Allocation Committee. 2012, 2013.

GEOTOP scholarship selection committee, 2010-2011.

Scientific cruises

Margin of North America (MONA) sediment coring campaign, May-July 2002.

Educational/media outreach

Article “Societies with Little Money Are among the Happiest on Earth” in *Scientific American*, June 28, 2024.

Accompanied high school students on eight 2-week educational cruises to Antarctica (4) and the arctic (4) as an Earth science expert and zodiac driver, with the award-winning non-profit group Students on Ice; between Dec. 2005 and August 2012.

Articles in *The Conversation*: “Collectively, we spend only 45 minutes daily on the activities that produce the most pollution” with William Fajzel (October 2023); “Ending the climate crisis has one simple solution: Stop using fossil fuels” with Damon Matthews (November 2022); “After a nuclear war, the world’s emergency food supply could be seafood — if overfishing stops now” with Kim Scherrer (November 2020); “Coronavirus response proves the world can act on climate change” with Ross Otto (March 2020)

Many interviews and coverage in various media, including (incomplete list):

Widespread coverage of Fajzel et al. (2023) including *Scientific American*, *Le Devoir*, CTV, BBC, ABC (Australia), *La Vanguardia*, *The Daily Mail*, *Radio Television Swiss*.

Three spanish and catalan radio interviews on a lower limit to CO₂ levels (Galbraith and Eggleston, 2017), two on future impacts of fishing technology (Galbraith et al., 2017), and two spanish and catalan radio interviews on iron limitation of fish (Galbraith et al., 2019).

Media coverage of future wellbeing projections (Barrington-Leigh and Galbraith, 2019) included *Les Affaires* (France), *El Periodico* and *Ara* (Spain), *Psychology Today*, *Vox*.

Interviewed for story in *Wired* on a lower limit to CO₂ levels (Galbraith and Eggleston, 2017).

Media coverage of deep Southern Ocean convection (De Lavergne et al., 2014) included: Scientific American, the Smithsonian, the Christian Science Monitor, Radio Canada International, CTV, Grist National Public Radio (NPR) Academic Minute on changes in the nitrogen cycle, past and future, Nov. 2013.

Volunteer 'Climate Expert' for media education with the American Geophysical Union.

Invited plenary speaker at IPY Polar Educators conference, April 2012.

Appeared in the Water Brothers special on melting arctic ice (TV Ontario, 2011).

Software development

Development, maintenance and community support for a global climate model, CM2Mc, a marine biogeochemistry module, BLING, and a global model of fish and fisheries, BOATS.