

Zoe V. Finkel

Address

Department of Oceanography
Dalhousie University
Halifax, Nova Scotia
Canada
zfinkel@dal.ca
www.mmab.ca

Academic appointments

- 2018- Professor & Tier I Canada Research Chair in Marine Microbial Macroecology, Department of Oceanography, Dalhousie University
- 2018-27 Associate appointment, Mount Allison University (MtA), Geography & Environment
- 2016-19 Associate appointments to MtA Biology, Chemistry & Biochemistry departments
- 2014-16 External Graduate Faculty Member of the Ecology and Environmental Sciences Program, University of Maine
- 2011-18 Tier II Canada Research Chair in Marine Environmental Ecology
- 2009-11 Adjunct professor, College of Earth, Ocean and Environment, School of Marine Science and Policy, University of Delaware, Oceanography program
- 2005-18 Assistant, Associate, Full professor, Environmental Science Program, Mount Allison University (MtA)

Education

- 2005 Ph.D. Oceanography, Rutgers University
- 1998 M.Sc. Biology, Dalhousie University
- 1995 B. Sc. Environmental Science, University of Manitoba

Research Interests

My research is focused on improving our current understanding of how climate change will alter the ocean's capacity to absorb anthropogenic carbon dioxide through changes in phytoplankton production, elemental composition, and community structure and how this will impact food web structure. We are currently: 1) developing a new framework to understand how phytoplankton interact with environmental conditions to alter the elemental composition of particulate matter in the ocean and 2) using lab studies to identify transcriptomic markers of environmental stress and growth rate. My approach is interdisciplinary and collaborative and includes experimental work on phytoplankton cultures, statistical analyses of field data, physiological and ecological modeling.

Publications

Summary: 93 published papers total, 30 of these papers have >100 citations. Google Scholar statistics as of March 2024: 9813 citations, h-index 45, i10-index 72.

Published (Trainees in bold)

1. **Y.Y. Hu**, A.J. Irwin, Z.V. Finkel. An improved method to quantify bulk carbohydrate in marine planktonic samples. *Limnology and Oceanography: Methods*, In press. 10.1002/lom3.1061
2. S Dutkiewicz, CL Follett, MJ Follows, F Henderikx-Freitas, F Ribalet, MR Gradoville, SN Coesel, H Farnelid, ZV Finkel, AJ Irwin, O Jahn, DM Karl, JP Mattern, AE White, JP Zehr, EV Armbrust. Multiple biotic interactions establish phytoplankton community structure across environmental gradients. *Limnology and Oceanography*, In press. 10.1002/lno.12555
3. **O. Carnicer**, **Y.Y. Hu**, **V. Ebenezer**, A.J. Irwin, Z.V. Finkel. 2023. Genomic architecture constrains macromolecular allocation in dinoflagellates. *Protist*. 174(6), 125992.
4. **Z. Li**, **Y. Zhang**, W. Li, A.J. Irwin, Z.V. Finkel. 2023. Common environmental stress responses in a model marine diatom. *New Phytologist*. 240(1), 272-284. doi: 10.1111/nph.19147
5. **R.M. Sheward**, **J.D. Liefer**, A.J. Irwin, Z.V. Finkel. 2023. Elemental stoichiometry of the key calcifying marine phytoplankton *Emiliania huxleyi* under ocean climate change: a meta-analysis. *Global Change Biology*, doi: 10.1111/gcb.16807.
6. **N. McGinty**, A.J. Irwin, Z.V. Finkel, S Dutkiewicz. 2023. Using ecological partitions to assess zooplankton biogeography and seasonality. *Frontiers* 10: 989770. 10.3389/fmars.2023.989770
7. **C.M. Mutshinda**, A Mishra, ZV Finkel, AJ Irwin. 2023. Density regulation amplifies environmentally induced population fluctuations. *Peer J* 11: e14701. 10.7717/peerj.14701
8. **Z-K. Li**, **Y. Zhang**, W. Li, A.J. Irwin, Z.V. Finkel. 2022. Conservation and architecture of housekeeping genes in the model marine diatom *Thalassiosira pseudonana*. *New Phytologist* 234: 1363-1376. 10.1111/nph.18039
9. **M. M. Amirian**, **A.J. Irwin**, Z.V. Finkel. 2022. Extending the Monod model of microbial growth with memory. arXiv 10.48550/arXiv.2207.02028, *Frontiers Mar. Sci.* 9, 10.3389/fmars.2022.963734
10. **Y.Y. Hu**, A.J. Irwin, Z.V. Finkel. 2022. Improving quantification of particulate phosphorus. *Limnology and Oceanography: Methods*. 20: 729-740. 10.1002/lom3.10517
11. **V. Ebenezer**, **Y. Hu**, **O. Carnicer**, A.J. Irwin, M.J. Follows, Z.V. Finkel. 2022. Elemental and macromolecular composition of the marine Chlorocophyceae, a major

- group of oceanic photosynthetic picoeukaryotes. *Limnology & Oceanography*. 67: 540-551.
12. **C.M. Mutshinda**, A. Mishra, Z.V. Finkel, C.E. Widdicombe, A.J. Irwin. 2022. Bayesian two-part modeling of phytoplankton biomass and occurrence. *Hydrobiologia*. 849: 1287-1300.
 13. **J.T. Siddons**, A.J. Irwin, ZV Finkel. 2022. Graphical analysis of a marine plankton community reveals spatial, temporal, and niche structure of sub-communities. *Frontiers in Marine Science* 9: 943540. 10.3389/fmars.2022.943540
 14. **O. Carnicer**, A.J. Irwin, Z.V. Finkel. 2022. Traits influence dinoflagellate C:N:P. *Eur. J. Phycology*. Published online. 10.1080/09670262.2021.1914860
 15. J.R. Casey, R.M. Boiteau, K.M. Engqvist, Z.V. Finkel, G. Li, **J. Liefer**, C.L. Muller, N. Munoz, M.J. Follows. 2022. Basin-scale biogeography of marine phytoplankton reflects cellular-scale optimization of metabolism and physiology. *Science Advances*. 8: eabl4930. 10.1126/sciadv.abl4930
 16. **D. Nanjappa**, **Y. Liang**, **L. Bretherton**, **C.M. Brown**, A. Quigg, A.J. Irwin, Z.V. Finkel. 2021. Contrasting transcriptomic responses of a microbial eukaryotic community to oil and dispersant. *Env. Pollution*. 288. 117774. 10.1016/j.envpol.2021.117774.
 17. **Y. Liang**, **L. Bretherton**, **C. Brown**, U. Passow, A.S. Quigg, A.J. Irwin, Z.V. Finkel. 2021. Transcriptome-wide responses of aggregates of the diatom *Odontella aurita* to oil. *MEPS*. 671:61-79. 10.3354/meps13749
 18. **Y. Zhang**, **Z-K. Li**, K.G. Schulz, **Y. Hu**, A.J. Irwin, Z.V. Finkel. 2021. Growth-dependent changes in elemental stoichiometry and macromolecular allocation in the coccolithophore *Emiliania huxleyi* under different environmental conditions. *Limnology & Oceanography*. 66: 2999-3009. 10.1002/lno.11854
 19. **N. McGinty**, A.D. Barton, N..R Record, Z.V. Finkel, D.G. Johns, C.A. Stock, A.J. Irwin. 2021. Anthropogenic climate change impacts on copepod trait biogeography. *Global Change Biology*. 27: 1431-1442.
 20. **N. McGinty**, A. Barton, D.G. Johns, Z.V. Finkel, A.J. Irwin. 2021. Niche conservation in copepods between ocean basins. *Ecography*. 44: 653-1664. 10.1111/ecog.05690
 21. **Z-K. Li**, **Y. Zhang**, **Y. Hu**, **R. Sheward**, A.J. Irwin, Z.V. Finkel. 2021. Dynamic photophysiological stress response of a model diatom to ten environmental stresses. *J Phycol*. 57:484-495. 10.1111/jpy.13072

22. **C.M. Mutshinda**, Z.V. Finkel, C.E. Widdicombe, AJ Irwin. 2020. A trait-based clustering for phytoplankton biomass modeling and prediction. *Diversity*. 12: 295. 10.3390/d12080295
23. **Z-K. Li**, G. Dai, Y. Zhang, K. Xu, **L. Bretherton**, Z.V. Finkel, A.J. Irwin, P. Juneau, B-S. Qiu. 2020. Photosynthetic adaptation to light availability shapes the ecological success of bloom-forming cyanobacterium *Pseudanabaena* to iron limitation. *J Phycol.* 56:1457-1467. 10.1111/jpy.13040
24. A.W. Omta, D. Talmy, K. Inomura, A.J. Irwin, Z.V. Finkel, D. Sher, **J.D. Liefer**, M.J. Follows. 2020. Quantifying nutrient throughput and DOM production by algae in continuous culture. *J theor Biol*, 494:110214. 10.1016/j.jtbi.2020.110214
25. **I. Benner**, A.J. Irwin and Z.V. Finkel. 2020. Capacity of the common Arctic picoeukaryote *Micromonas* to adapt to a warming ocean. *Limnology and Oceanography Letters* 5(2):221-227.
26. **L. Bretherton**, M. Kamalanathan, J. Hillhouse, Z.V. Finkel, A.J. Irwin, A. Quigg. 2020. Trait-dependent variability of the response of marine phytoplankton to oil and dispersant exposure. *Marine Pollution Bulletin*, 153:110906 10.1016/j.marpolbul.2020.110906.
27. Z.V. Finkel, **Y. Liang**, **D. Nanjappa**, **L. Bretherton**, **C.M. Brown**, A. Quigg, A.J. Irwin. 2020. A ribosome sequence-based oil sensitivity index for phytoplankton groups. *Marine Pollution Bulletin*, 151, 10798. 10.1016/j.marpolbul.2019.110798.
28. **C. Mutshinda**, C. Widdicombe, Z.V. Finkel, A.J. Irwin. 2019. Bayesian inference to partition determinants of community dynamics from observational time series. *Community Ecology*, 20(3): 238-251. 10.1556/168.2019.20.3.4
29. **C. Fiset**, A.J. Irwin, Z.V. Finkel. 2019. The macromolecular composition of noncalcified marine macroalgae. *J Phycology*. 55: 1361-1369. 10.1111/jpy.12913.
30. **Y. Liang**, **J. Koester**, **J. Liefer**, A.J. Irwin, ZV Finkel. 2019. Molecular mechanisms of temperature acclimation and adaptation in marine diatoms. *ISME J.* 13: 2415-2425. 10.1038/s41396-019-0441-9.
31. **J.D. Liefer**, **A. Garg**, **M.H. Fyfe**, A.J. Irwin, **I. Benner**, **C.M. Brown**, M.J. Follows, A.W. Omta, Z.V. Finkel. 2019. The macromolecular basis of phytoplankton C:N:P under nitrogen starvation. *Front. Microbiol.* 10: 763. 10.3389/fmicb.2019.00763
32. **L. Bretherton**, M. Kamalanathan, J. Hillhouse, J. Genzer, H. Bacosa, Z.V. Finkel, A.S. Quigg. 2019. Growth dynamics and domoic acid production of *Pseudo-nitzschia* sp. in response to oil and dispersant exposure. *Harmful Algae*. 86: 55-63. 10.1016/j.hal.2019.05.008

33. **L. Bretherton**, M. Kamalanathan, J. Genzera, J. Hillhouse, S. Setta, **Y. Liang**, **C.M. Brown**, C. Xu, J. Sweet, U. Passow, Z.V. Finkel, A.J. Irwin, P.H. Santschi, A. Quigg. 2019. Response of natural phytoplankton communities exposed to crude oil and chemical dispersants during a mesocosm experiment. *Aquatic Toxicology*. 206: 43-53. 10.1016/j.aquatox.2018.11.004
34. P.A. Ajani, **N. McGinty**, Z.V. Finkel, A.J. Irwin. 2018. Phytoplankton realised niches track changing oceanic conditions at a long-term coastal station off Sydney Australia. *Frontiers in Marine Science*, 5: 285. 10.3389/fmars.2018.00285
35. **N. McGinty**, A.D. Barton, N.R. Record, Z.V. Finkel, A.J. Irwin. 2018. Traits structure copepod niches in the North Atlantic and Southern Ocean. *Marine Ecology Progress Series*. 601:109-126.
36. **L. Bretherton**, A. Williams, J. Genzer, J. Hillhouse, M. Kamalanathan, Z.V. Finkel, A.S. Quigg. 2018. Physiological response of 10 phytoplankton species exposed to Macondo oil and the dispersant Corexit. *J. Phycol.* 54: 317-328. 10.1111/jpy.12625
37. **J. Liefer**, **A. Garg**, D. Campbell, A.J. Irwin, Z.V. Finkel. 2018. Nitrogen starvation induces distinct photosynthetic responses and recovery dynamics in diatoms and prasinophytes. *PLOS One*. e0195705. 10.1371/journal.pone.0195705
38. **C.M. Mutshinda**, Z.V. Finkel, C.E. Widdicombe, A.J. Irwin. 2017. Phytoplankton traits from long-term oceanographic time-series. *Marine Ecology Progress Series*. 576:11-25.
39. P. Tréguer, C. Bowler, B. Moriceau, S. Dutkiewicz, M. Gehlen, O. Aumont, L. Bittner, R. Dugdale, Z. Finkel, D. Iudicone, O. Jahn, L. Guidi, M. Lasbleiz, K. Leblanc, M. Levy, P. Pondaven. 2017. Influence of diatom diversity on the ocean biological carbon pump. *Nature Geoscience*. 11: 27-37.
40. A.W. Omta, D. Talmy, D. Sher, Z.V. Finkel, A.J. Irwin, M.J. Follows. 2017. Extracting phytoplankton physiological traits from batch and chemostat culture data. *Limnology & Oceanography Methods*. 15: 453-466. doi/10.1002/lom3.10172
41. Schofield, O., G. Saba, K. Coleman, A.F. Carvalho, N. Couto, H. Ducklow, Z.V. Finkel, A. Irwin, A. Kahl, T. Miles, S. Stammerjohn, M. Montes-Hugo, N. Waite. 2017. Decadal variability in coastal phytoplankton community composition along a changing West Antarctic Peninsula. *Deep Sea Research Part I*. 124: 42-54.
42. **C. Fiset**, **J. Liefer**, A.J. Irwin, Z.V. Finkel. 2017. Methodological biases in estimates of macroalgal macromolecular composition. *Limnology & Oceanography Methods*. 15: 618-630. Available online. <http://onlinelibrary.wiley.com/doi/10.1002/lom3.10186/epdf>

43. **A.D. Barton**, A.J. Irwin, Z.V. Finkel, C. Stock. 2016. Anthropogenic climate change drives shift and shuffle in marine phytoplankton communities. *Proceedings of the National Academy of Sciences*. 113(11) 2964-2969.
44. A. Quigg, U. Passow, W-C. Chin, C. Xu, S. Doyle, **L. Bretherton**, M. Kamalanathan, A.K. Williams, J.B. Sylvan, Z.V. Finkel, A.H. Knapp, K.A. Schewehr, S. Zhang, L. Sun, T.L. Wade, W. Obeid, P.G. Hatcher, P.H. Santschi. 2016. The role of microbial exopolymers in determining the fate of oil and chemical dispersants in the ocean. *Limnology & Oceanography Letters*. 1: 3-26. Available online. 10.1002/lol2.10030
45. Z.V. Finkel, M.J. Follows, **J.D. Liefer**, **C.M. Brown**, **I. Benner**, A.J. Irwin. 2016. Phylogenetic diversity in the macromolecular composition of microalgae. *PLoS ONE*. 11(5) e0155977.
46. Z.V. Finkel, M.J. Follows, A.J. Irwin. 2016. Size-scaling of macromolecules and chemical energy content in the eukaryotic microalgae. *JPR*. 38(5): 1151-1162.
47. **Mutshinda, C.M.**, Z.V. Finkel, C. Widdicombe, A.J. Irwin. 2016. Ecological equivalence of species within phytoplankton functional groups. *Functional Ecology*. 30: 1714-1722. doi: 10.1111/1365-2435.12641.
48. A.J. Irwin, Z. V. Finkel, F. Müller-Karger, L. Troccoli. 2015. Phytoplankton adapt to changing ocean environments. *Proceedings of the National Academy of Sciences*. 112(18): 5762-5766.
49. A.J. Irwin, Z. V. Finkel, F. Müller-Karger, L. Troccoli. 2015. Reply to Brun et al.: Fingerprint of evolution revealed by shifts in realized phytoplankton niches in natural populations. *Proceedings of the National Academy of Sciences*. 112(38): E5225, doi: 10.1073/pnas.1514396112.
50. **E.A. Kerrigan**, A.J. Irwin, Z.V. Finkel. 2015. Community- and population-level changes in diatom size structure in a subarctic lake over the last two centuries. *PeerJ* 3: e1074. 10.7717/peerj.1074
51. S. Finnegan, S.C. Anderson, P.G. Harnik, C. Simpson, D.P. Tittensor, J.E. Byrnes, Z.V. Finkel, D.R. Lindberg, L. Hsiang Liow, R. R. Lockwood, H.K. Lotze, C.M. McClain, J.L. McGuire, A. O’Dea, J.M. Pandolfi. 2015. Paleontological baselines for evaluating extinction risk in the modern ocean. *Science*. 348: 567-570.
52. E.A. Orzechowski, R. R. Lockwood, J.E. Byrnes, S.C. Anderson, S. Finnegan, P.G. Harnik, Z.V. Finkel, D.R. Lindberg, L. Hsiang Liow, H.K. Lotze, C.M. McClain, J.L. McGuire, A. O’Dea, J.M. Pandolfi, C. Simpson, D.P. Tittensor. 2015. Marine extinction risk shaped by trait-environment interactions over 500 million years. *Global Change Biology*. 21(10): 3595-3607.

53. **Y. Wu**, D.A. Campbell, A.J. Irwin, D.J. Suggett, Z.V. Finkel. 2014. Ocean acidification enhances the growth rate of larger diatoms. *Limnology & Oceanography*. **59**: 1027-1034.
54. **Y. Wu, J. Jeans**, D.J. Suggett, Z.V. Finkel, D.A. Campbell. 2014. Large centric diatoms allocate more cellular nitrogen to photosynthesis to counter slower RUBISCO turnover rates. *Frontiers in Marine Science: Global Change and the Future Oceans*. doi: 10.3389/fmars.2014.00068
55. **A.D. Barton**, A.J. Pershing, E. Litchman, Z.V. Finkel, T. Kiørboe, N.R. Record, K.F. Edwards, B.A. Ward. 2013. The biogeography of plankton traits. *Ecology Letters*. **16**(4): 522-534.
56. **C.M. Mutshinda**, Z.V. Finkel, A.J. Irwin. 2013. Which environmental factors control phytoplankton populations? A Bayesian variable selection approach. *Ecological Modelling*. **269**: 1-8. Supplement. 10.1016/j.ecolmodel.2013.07.025
57. **A.D. Barton**, Z.V. Finkel, B.A. Ward, D.G. Johns, M.J. Follows. 2013. The roles of cell size and trophic strategy in North Atlantic diatom and dinoflagellate communities. *Limnology & Oceanography*. **58**: 254-266.
58. **C.M. Mutshinda**, L. Troccoli-Ghinaglia, Z.V. Finkel, F. Muller-Karger, A.J. Irwin. 2013. Environmental regulation of phytoplankton community structure in the Cariaco Basin. *Marine Biology Research*. **9**(3): 247-261.
59. **S.C. Sharpe, J.A. Koester, M. Loebl**, A.M. Cockshutt, D.A. Campbell, A.J. Irwin, Z.V. Finkel. 2012. Metabolic size scaling within and across cryptic species of *Ditylum brightwellii* (Bacillariophyceae). *PLoS One* **7**(12): e52916. 10.1371/journal.pone.0052916.
60. P.G. Harnik, H. K. Lotze, S.C. Anderson, Z.V. Finkel, S. Finnegan, D.R. Lindberg, L.H. Liow, R. Lockwood, C.M. McClain, J.L. McGuire, A. O’Dea, J.M. Pandolfi, C. Simpson, and D.P. Tittensor. 2012. Extinctions in ancient and modern seas. *Trends in Ecology and Evolution*. **27**: 608-617.
61. **H. van Tol**, A.J. Irwin, Z.V. Finkel. 2012. Macroevolutionary trends in silicoflagellate skeletal morphology: the costs and benefits of silicification. *Paleobiology*. **38**(3): 391-402.
62. **M. Grey**, Z.V. Finkel, P.K. Pufahl, L.M. Reid. 2012. Evolutionary mode of the ostracod, *Velatomorpha altilus*, at the Joggins Fossil Cliffs UNESCO World Heritage Site. *Lethaia*. **45**(4): 615-623.

63. A.J. Irwin, **A.M. Nelles**, Z.V. Finkel. 2012. Phytoplankton niches estimated from field data. *Limnology & Oceanography*. **57**(3): 787-797.
64. **M. Grey** and Z.V. Finkel. 2011. The Joggins Fossil Cliffs UNESCO world heritage site: a review of recent research. *Atlantic Geology*. **47**: 185-200.
65. **Z-P. Mei**, Z.V. Finkel, A.J. Irwin. 2011. Phytoplankton growth allometry and size-dependent C:N stoichiometry revealed by a variable quota model. *Marine Ecology Progress Series*, **434**: 29-43, 10.3354/meps09149
66. **B-Z. Chen**, A.J. Irwin, Z.V. Finkel. 2011. Biogeographic distribution of diversity and size-structure of organic-walled dinoflagellate cysts. *Marine Ecology Progress Series*. **425**:35-45. 10.3354/meps08985
67. Quigg, A.S., A.J. Irwin, Z.V. Finkel. 2011. Testing the evolutionary inheritance of elemental stoichiometry in phytoplankton. *Proceedings of the Royal Society B*. **278**:526-534. 10.1098/rspb.2010.1356
68. Z.V. Finkel and **B. Kotrc**. 2010. Silica use through time: macroevolutionary change in the morphology of the diatom frustule. *Geomicrobiology Journal*. **16**:1-13. 10.1080/01490451003702941
69. **Loebl, M.**, Cockshutt, A.M., Campbell, D.A., Z.V. Finkel. 2010. Physiological basis for high resistance to photoinhibition under nitrogen depletion in *Emiliania huxleyi*. *Limnology & Oceanography*. **55**: 2150-60. 10.4319/lo.2010.55.5.2150
70. Z.V. Finkel, **K.A. Matheson**, **K. Regan**, A.J. Irwin. 2010. Genotypic and phenotypic variation in diatom silicification under paleoceanographic conditions. *Geobiology*. **8**(5): 433-445, 10.1111/j.1472-4669.2010.00250.x
71. K.J. Flynn, J.A. Raven, T.A.V. Rees, Z.V. Finkel, A.S. Quigg, J. Beardall. 2010. Is the growth rate hypothesis applicable to microalgae? *Journal of Phycology*. **46**(1): 1-12. 10.1111/j.1529-8817.2009.00756.x
72. Z.V. Finkel, J. Beardall, K.J. Flynn, A.S. Quigg, T.A.V. Rees, J.A. Raven. 2010. Phytoplankton in a changing world: cell size and elemental stoichiometry. *Journal of Plankton Research*. **32**(1):119-137. 10.1093/plankt/fbp098
73. **T. Key**, **A. McCarthy**, D.A. Campbell, **C. Six**, S. Roy, Z.V. Finkel. 2010. Cell size tradeoffs govern light exploitation strategies in marine phytoplankton. *Environmental Microbiology*. **12**(1):95-104. 10.1111/j.1462-2920.2009.02046.x

74. Z. V. Finkel, A.J. Irwin, **C. Jacob-Vaillancourt**, E. Reavie, J.P. Smol. 2009. Environmental control of aquatic microbial community size structure varies across aquatic ecosystems. *Proceedings of the Royal Society B*. **276**: 1627-1634. (Cover image)
75. **Z-P. Mei**, Z.V. Finkel, A.J. Irwin. 2009. Growth rate allometry in response to light and nutrient limitation in phytoplankton. *Journal of Theoretical Biology*. **259**: 582-588.
76. J. Beardall, D. Allen, J. Bragg, Z.V. Finkel, K.J. Flynn, A.S. Quigg, T.A.V. Rees, A. Richardson and J.A. Raven. 2009. Allometry and stoichiometry of unicellular, colonial and multicellular phytoplankton. Tansley Review. *New Phytologist* **181**(2), 295–309. 10.1111/j.1469-8137.2008.02660.x
77. A.J. Irwin and Z.V. Finkel. 2008. Mining a sea of data: deducing environmental controls of remote-sensed chlorophyll. *PLoS ONE*. **3**(1): E3836
10.1371/JOURNAL.PONE.0003836
78. **C Six**, Z.V. Finkel, F. Rodriguez, D. Marie, F. Partensky, D.A. Campbell. 2008. Contrasting photoacclimation costs in ecotypes of the eukaryotic picoplankter *Ostreococcus*. *Limnology & Oceanography*. **53**(1): 255-265
79. **C. Six**, Z.V. Finkel, A.J. Irwin, D.A. Campbell. 2007. Light variability illuminates niche-partitioning among oceanic picocyanobacteria. *PLoS ONE* **2**(12): e1341.
doi:10.1371/journal.pone.0001341
80. Z.V. Finkel, **J. Sebbo**, M. Katz, A.J. Irwin, O. Schofield, S. Feist-Burkhardt, J. Young, P. Falkowski. 2007. A universal driver of macroevolutionary change in the size of phytoplankton over the Cenozoic. *Proceedings of the National Academy of Sciences USA*. **104**(51): 20416-20420.
81. Berman-Frank, A.S. Quigg, Z. V. Finkel, A.J. Irwin, L. Haramaty. 2007. Nitrogen-fixation strategies and Fe requirements in cyanobacteria. *Limnology & Oceanography*. **52**(5): 2260-2269.
82. Z.V. Finkel, A. Quigg, **R. Chiampi**, O. Schofield & P. Falkowski. 2007. Phylogenetic diversity in Cd:P regulation in marine phytoplankton. *Limnology & Oceanography*. **52**(3): 1131-1138.
83. Z.V. Finkel, A. Quigg, J. A. Raven, J. R. Reinfelder, O. E. Schofield, and P. G. Falkowski. 2006. Irradiance and the elemental stoichiometry of marine phytoplankton. *Limnology & Oceanography*. **51**: 2690-2701.
84. A.J. Irwin, Z. V. Finkel, O. Schofield & P. Falkowski. 2006. Scaling-up from nutrient physiology to the size-structure of phytoplankton communities. *Journal of Plankton Research*. **28**(5): 459-471.

85. J.A. Raven, Z. V. Finkel, A.J.Irwin. 2005. Picophytoplankton: bottom-up and top-down controls on ecology and evolution. *Vie et Mileu*. **55** (3/4): 209-215.
86. Z.V. Finkel, M. Katz, J. Wright, O. Schofield & P. Falkowski. 2005. Climatically driven macroevolutionary patterns in the size of marine diatoms over the Cenozoic. *Proceedings of the National Academy of Sciences USA*. **102**(25): 8927-8932.
87. P. Frost, M. Evans-White, Z. V. Finkel, T. Jensen, V. Matzek. 2005. Are you what you eat? Physiological constraints on organismal stoichiometry in an elementally imbalanced world. *Oikos*. **109**:18-28.
88. M.E. Katz, Z.V. Finkel, D. Gryzebek, A.H. Knoll, P.G. Falkowski. 2004. Eucaryotic phytoplankton: evolutionary trajectories and global biogeochemical cycles. *Annual Review of Ecology, Evolution and Systematics*. **35**:523-556.
89. Z.V. Finkel, A. J. Irwin and O. Schofield. 2004. Resource limitation alters the $\frac{3}{4}$ size scaling of metabolic rates in phytoplankton. *Marine Ecology Progress Series*, Special theme section: *Emergent properties of complex marine systems: a macroecological perspective*. **273**:269-279.
90. O. Schofield, R. Arnone, P. Bissett, C. Davis, Z. Finkel, M. Oliver, M. Moline. 2004. Watercolors in the coastal zone: what can we see? *Oceanography*. **17**(2):30-37.
91. A.S. Quigg, Z. V. Finkel, A. J. Irwin, Y. Rosenthal, T-Y Ho, J. R. Reinfelder, O. Schofield, F. M. M. Morel and P. G. Falkowski. 2003. The evolutionary inheritance of elemental stoichiometry in marine phytoplankton. *Nature*, **425**: 291-294.
92. T-Y Ho, A.S. Quigg, Z. V. Finkel, A. J. Milligan, K. Wyman, P. G. Falkowski, and F. M. M. Morel. 2003. The elemental composition of some marine phytoplankton. *Journal of Phycology*, **39**(6):1145-1159.
93. Z. V. Finkel and A.J. Irwin. 2001. Light absorption and the filter amplification correction: species-specific and size-specific effects. *Journal of Experimental Marine Biology and Ecology*, **259**:51-61.
94. Z. V. Finkel. 2001. Light absorption and the size scaling of light-limited growth and photosynthesis in marine diatoms. *Limnology & Oceanography*, **46**(1): 86-94.
95. Z. V. Finkel and A.J. Irwin. 2000. Modelling size-dependent photosynthesis: light absorption and the allometric rule. *Journal of theoretical Biology*, **204**: 361-369.

Edited journal issues, Chapters, Conference proceedings & Non-Refereed Publications

- Quigg, A., Xu, C., Chin, W.-C., Kamalanathan, M., Sylvan, J.B., Finkel, Z.V., Irwin, A.J., Ziervogel, K., Wade, T.L., Knap, A.H., Hatcher, P.G., and Santschi, P.H. 2021. Crude oil and particulate fluxes including marine oil snow sedimentation and flocculant accumulation: the Deepwater Horizon oil spill study. Proceedings of the International Oil Spill Conference, May 2021 (1): 689531. <https://doi.org/10.7901/2169-3358-2021.1.689531>
- Z.V. Finkel & A.J. Irwin. 2020. Phytoplankton. In: Encyclopaedia of Astrobiology. Springer. Book: 10.1007/978-3-642-27833-4, Chapter: 10.1007/978-3-642-27833-4_5416-1.
- A.J. Irwin and Z. V. Finkel. 2018. Phytoplankton functional types: A trait perspective. In: The Microbial Ecology of the Ocean. 3rd edition. Editors: J. Gasol and D. Kirchman. Wiley. Chapter 11: Pages 435-465.
- Z.V. Finkel. 2016. Silicification in the microalgae. In: Microalgal physiology. Developments in Applied Phycology Series. Editors: John Raven, John Beardall, Michael Borowitzka. Invited chapter. Pages 289-300. doi 10.1007/978-3-319-24945-2.
- Z.V. Finkel. 2014. Marine net primary production. 7 pages. In: Handbook of Global Environmental Pollution Vol. 1. Global Environmental Change. Editor: Bill Freedman. Springer. 966 pages. doi 10.1007/978-94-007-5784-4_42.
- B. Beisner and Z.V. Finkel. Editors. 2014. Plankton functional traits. Journal of Plankton Research Virtual Issue: http://www.oxfordjournals.org/our_journals/plankt/resource/functional_traits.html
- Z. V. Finkel. 2007. Does size matter? The evolution of modern marine food webs. In: *The evolution of aquatic photoautotrophs*. Eds.: P.G. Falkowski & A.H. Knoll. Academic Press.
- Z. V. Finkel, A.J. Irwin, P. Falkowski & O. Schofield. 2002. Cell size and optimal pigment concentrations under sub-saturating growth irradiance. *Ocean optics*, **XVI**: 7p.
- A.J. Irwin and Z.V. Finkel. 1999. Review of Selection in Natural Populations, *Quarterly Review of Biology*, **74**(1):73-74.

Accepted, in review or in revision

- **C. M. Mutshinda**, Z.V. Finkel, A.J. Irwin. Large shifts in diatom and dinoflagellate biomass in the North Atlantic over six decades. In review.
- **J.D. Liefer** et al. Macromolecules determine surface particulate C:N:P across an ocean gradient. In revision.

Selected Commentaries, Blog posts, & Press on research

2022

- Spring 2022 research cruise to the Labrador Sea (part of the OFI NWA BCP large research project). Online story. <https://nwa-bcp.ocean.dal.ca/CelticExplorer2022.html>

2019

- Gulf of Mexico Research Initiative. Online story. Oct. 29, 2019. *Study identifies phytoplankton species as resistant or sensitive to oil*. Reports on Bretherton et al. 2018 J. Phycol. <https://gulfresearchinitiative.org/study-identifies-phytoplankton-species-as-resistant-or-sensitive-to-oil-spills/>
- Gulf of Mexico Research Initiative. Online story. June 25, 2019. *Study finds dispersed oil, but not oil alone, negatively affects phytoplankton*. Reports on Bretherton et al. 2019 Aquatic Toxicology. <https://gulfresearchinitiative.org/study-finds-dispersed-oil-but-not-oil-alone-negatively-affects-phytoplankton/>
- Nature Research Microbiology Blog post. June 11, 2019. *Behind the paper: How do diatoms acclimate and adapt to changing temperatures?* Author: Yue Liang. Reports on Liang et al. 2019 ISME paper.

2017

- Mount Allison University News. Online story. June 14, 2017. *Math and Computer Science Student collaborates on oil spill research project*. https://mta.ca/Community/News/2017/July/Math_and_computer_science_student_collaborates_on_oil_spill_research_project/. Reports on: undergraduate student Michael Bradet-Legris' summer research on the ADDOMEx project.
- Mount Allison University News. Online story. March 9, 2017. *Science student presents research at international conference in Hawaii*. https://mta.ca/Community/News/2017/March/Science_students_present_research_at_international_conference_in_Hawaii/. Reports on: undergraduate student Catherine Fiset's research on the macromolecular composition of seaweeds and conference presentation in Hawaii.

Earlier than 2017

- BBC news online. Feb. 23, 2016. Mark Kinver, Environment reporter: *Climate stirring change beneath the waves*. <http://www.bbc.com/news/science-environment-35631223>. Reports on: Barton et al. PNAS (2016)
- Berkeley news release. April 30, 2015. Robert Sanders. *Fossils help identify marine life at high risk of extinction*. Also reported by: Nature Research Highlights (<http://www.nature.com/nature/journal/v521/n7550/full/521009d.html>), MtA webpage, Sackville Tribune Post, ScienceDaily, ARC Center of Excellence Coral Reef Studies webpage. Reports on Finnegan et al. Science (2015).
- The Carbon Brief Blog. April 20, 2015. Robert McSweeney. *Tiny marine plants could amplify Arctic warming by 20% new study finds*. Reports on findings in Irwin et al. PNAS (2015).
- MtA communications office (Raine Phythian). Feb. 2015. *Mount Allison researcher part of a \$7.25 M grant to study effects of Gulf of Mexico oil spill*. MtA webpage, GeogNews News Digest of the Canadian Association of Geographers No. 347, Moncton Free Press (Feb. 27), Sackville Tribune Post.
- Journal of Plankton Research Facebook page – Highlights JPR article: *Phytoplankton in a changing world* by Z.V. Finkel et al. - cited >100 times. <https://www.facebook.com/JournalPlanktonResearch>
- University of Queensland, Australia - News Online. August 2012. Sea life facing major shock. Reports on: *Extinctions in ancient and modern seas* by Harnik et al. 2012 in *Trends in Ecology and Evolution*.

- MtA communications office. October 2011. *Mount Allison researcher in climate change receives national recognition*. Coverage of CRC award. MtA webpage.
- Riding, R. Feb. 1, 2008. *Drifters through time*. *Science*. 319: 571-572. A review of the edited book: *The evolution of aquatic photoautotrophs*. 2007. Editors: P.G. Falkowski and A.H. Knoll. Academic Press.
- Laura Dillman. June 2008. *Building better climate models using biotechnology*. Coverage of CFI award and lab open house with colleagues Drs. Doug Campbell, Amanda Cockshutt and Andrew Irwin. In: Fredericton Times and Transcript and BioAtlantech.
- Laura Dillman. Dec. 13. 2007. *Size matters for the microscopic phytoplankton* and Dec. 19. 2007. *Lighten up!* Mount Allison University webpage: <http://www.mta.ca/news>; Dec. 24. 2007. New Study by MtA researchers illuminates how marine micro-organisms interact with changing light, climate. Sackville Tribune Post. Reports on Finkel et al. PNAS (2007) and Six et al. PLoS ONE (2007).
- Melanie Jollymore. Summer 2006. *Global warming and the carbon sink*. Progress Research and Discovery Magazine. Globe and Mail insert.
- Laura Dillman. Apr 24, 2006. *Mount A professor receives prestigious award from the Ecological Society of America*. Mount Allison University webpage, Sackville Tribune Post, Moncton Times and Transcript (April 25, 2006).
- Laura Dillman. Sept. 2005. *65 million years in the making – a closer look at climate change*. Mount Allison University, Canadian University Net, Sackville Tribune-Post (Sept. 21, 2005). Reports on Finkel et al. PNAS (2005).
- John A. Raven and Janet E. Kübler. 2002. *New light on the scaling of metabolic rate with the size of algae*. *J. Phycol.* **38**: 11-16. Highlights work in Finkel et al. 2000 and 2001.

Grants

Summary: I am currently involved in several diverse multi-institutional grants totalling >\$14 million. Funds currently coming in to support my lab average approximately \$550,000/year.

Current

- 2023 NSERC RTI grant “Dissolved organic carbon and nitrogen analysis for coastal and aquatic studies. (Total \$90,863, **no direct funds for the Finkel lab**)
- 2022-2027 NSERC Discovery grant “Identifying transcriptomic indicators of growth rate and environmental stress in marine phytoplankton.” (**Finkel lab: \$51,000/yr**)
- 2022-2027 Simons Collaboration Grant. “Computational Biogeochemical Modelling of Marine Ecosystems (CBIOMES): Trait based modelling.” (**Finkel lab: \$1,062,740 USD**)
- 2022-2027. Canada Foundation for Innovation. Innovation Fund 2020. A BGC-Argo program for the NW North Atlantic Ocean. Leads: K. Fennel (Dal) and U. Passow (MUN), M. Babin, C. Dufour, Z.V. Finkel, R. Hamme, P. Hill, S. Kienast, A. Waite, D. Wallace. (**Total: \$8,855,072, CFI portion \$3,511,591, no direct funds for the Finkel lab**)
- 2020-2024 Ocean Frontier Institute Phase 2 Large Project Grant for “The North Atlantic as a climate ocean: projecting future changes in productivity and the biological carbon pump.” OFI Phase II project. (**Lead PI Finkel: \$4,000,000 with 18 PIs, Finkel lab funds: \$260,000**)

- 2020-2024 Simons Foundation Collaboration on Ocean Processes and Ecology (SCOPE-Gradients). Title: “Taxonomic and environmental controls of macromolecular and elemental stoichiometry of the North Pacific Ocean.” (**Finkel lab: \$698,546 USD**)

Completed

- 2013-2022 NSERC Discovery grant for “Adaptation and acclimation of phytoplankton to a changing climate” (**Finkel lab: \$40,000/yr**)
- 2017-2022 Simons Collaboration Grant. Title: “Computational Biogeochemical Modelling of Marine Ecosystems (CBIOMES): Trait based modelling.” (**Finkel lab: \$1,062,740 USD**).
- 2019-2020 Simons Foundation Grant. SCOPE-GRADIENTS. “Model driven investigations of Ocean Transition Zones – III.” (**Finkel lab: \$303,440 USD**)
- 2018-19 Gulf of Mexico Research Initiative GoMRI funded consortium: “Aggregation and degradation of dispersant and oil by microbial exopolymers (ADDOMEx II).” With lead PI Dr. A. Quigg, Texas A&M Galveston and 7 other investigators from 7 research institutions. (**Z. Finkel: \$139,146 USD**).
- 2018 Canadian Foundation for Innovation John R Evans Leaders Fund (and Ocean Frontier Institute matching funds). “Microbial microbial macroecology lab.” (**\$314,234**).
- 2017-2018 Simons Foundation Grant. SCOPE-Gradients “Model driven investigations of Ocean Transition Zones - II.” (**Z. Finkel: \$60,000 USD**).
- 2017 Canadian Foundation for Innovation John R Evans Leaders Fund. “Mount Allison Isotopic Analyses for Aquatic Biology.” (**\$357,542**) PI: Doug Campbell, M. Litvak, Z. Finkel.
- 2016 Canadian Foundation for Innovation John R Evans Leaders Fund (plus NBIF matching funds). “Mount Allison University Phytoplankton Culture Facility.” (**\$288,952**) PI: Z. Finkel
- 2016 Simons Foundation Grant. “Model driven investigations of Ocean Transition Zones.” (**MtA: \$66,000 USD**). A collaborative grant with PIs: M. Follows, G. Armbrust, D. Karl, A. White, S. Johns, L. Juranek, J. Zehr, D. Lindell.
- 2016 NBIF Research Assistantship Initiative. “Assessing the biotechnical potential of algae.” (**\$15,000**) PI: Z. Finkel.
- 2015 NBIF Emerging Projects Grant. “Fluorometer for Studying Adaptation of Phytoplankton to a Changing Climate.” Lead PI: Z. Finkel, Co-PIs I. Benner and J. Liefer. (**\$25,000**)
- 2015-2017 Gulf of Mexico Research Initiative GoMRI funded consortium: “Aggregation and degradation of dispersant and oil by microbial exopolymers (ADDOMEx).” With lead PI Dr. A. Quigg, Texas A&M Galveston and 7 other investigators from 7 research institutions. (**MTA/Finkel: \$600,000, Total \$7,250,000 USD**)
- 2015 Canadian Foundation for Innovation Grant “Novel Approaches in Phytoplankton Research: Next Generation Scanning Electron Microscope and X-ray Microanalysis System” with lead PI Irena Kazmarska, Doug Campbell and Jim Ehrman (**\$119,118 from CFI/Total \$297,794**)
- 2014 Canadian Foundation for Innovation Leaders Opportunity Fund “Structure/Function Quantitation for Phytoplankton” for a cell counter, pump and probe fluorometer and protein separation and quantitation system with Drs. D. Campbell and A. Cockshutt (**\$81,662 from CFI/Total \$204,213**)

- 2013-2017 Gordon and Betty Moore Foundation Grant subcontract for “Macromolecular models of marine microbes” awarded to PI Dr. Mick Follows, Massachusetts Institute of Technology. (Funding (subcontract) to ZVF/MtA: **\$55,000/year USD**)
- 2010-2011 NSERC Research Tools and Infrastructure grant “Field-Deployable Fluorescence Induction Instrument for analyzing phytoplankton” Co-applicant with PI Doug Campbell, A. Irwin and Y. Huot (**\$34,814**)
- 2010-2011 NSERC Research Tools and Infrastructure grant “Multi-User Gene and Protein Quantitation Tools for Environmental Biosciences” Co-applicant with PI Suzie Currie, D. Campbell, A. Cockshutt, F. Baerlocher and V. Lloyd (**\$133,221**)
- 2009-2010 ACENET Postdoctoral Fellowship Award “Modeling the size structure of plankton communities in the global ocean” Collaborator with PI A. Irwin (**\$40,000**)
- 2009 NSERC Research Tools and Infrastructure grant “A structured illumination/enhanced imaging deconvolution microscope” Co-applicant with V Lloyd and others (**\$148,436**)
- 2008 NSERC Research Tools and Infrastructure grant “Phytoplankton turbidostat system” Co-applicant with Doug Campbell (**\$63,199.68**)
- 2008-2013 NSERC Discovery grant for “Macroevolution of phytoplankton communities in response to climate change” (**\$23,000/year**)
- 2007-2011 Marjorie Young Bell Endowment Fund for support for the Digital Microscopy Facility, Applicants: I. Kaczmarska, J. Ehrman, F. Baerlocher, Z. Finkel, C. Laroque. (total: **\$45,000**)
- 2007-2009 NBIF Research Technician Initiative. Support for technician for Marine Macroecology and Biogeochemistry Lab. (\$63,291 from NBIF, match from CFI and MtA: total: **\$120,000**)
- 2006 Canadian Foundation for Innovation infrastructure grant: “Eco-physiology and morphometrics infrastructure for the marine macroecology and biogeochemistry laboratory” (CFI: \$146,706, NBIF: \$70,000, match from MtA; total **\$367,224**)
- 2006 NSERC Research Tools and Infrastructure grant for “Stage automation for scanning electron microscope” with I. Kaczmarska, J. Ehrman, F. Baerlocher, and C. Laroque (**\$23,770**)
- 2005-2008 NSERC Discovery grant for “Evolution of fossil phytoplankton communities over the last 65 million years of Earth’s history” (**\$22,500/year**)
- 2005 NSERC Research Tools and Infrastructure grant “Phytoplankton macroevolution, morphometrics and biogeochemistry laboratory” (**\$96,800**)
- 2005 Mount Allison University and Marjorie Young Bell Start-up grant (**\$35,000**)
- 2005 New Brunswick Innovation Fund (NBIF) Start-up Grant (**\$40,000**)
- 2005 NBIF Research Assistantship Initiative Grant (**\$10,000**) with co-PI Dr. A. Irwin

Chairs and other awards and recognitions

- 2017-2024 Canada Research Chair Tier I in Marine Microbial Macroecology at Dalhousie University (**\$200,000/year**)
- 2015- Fellow of the Marine Biological Association of the United Kingdom
- 2013-2016 NSERC Discovery Accelerator Supplement. The Discovery Accelerator Supplements Program provides substantial and timely additional resources to accelerate progress and maximize the impact of superior research programs (**\$40,000/year**)

- 2011-2021 Canada Research Chair Tier II in Marine Environmental Ecology at Mount Allison University (**\$100,000/year**). *Note I resigned the Tier II chair as of July 2017*
- 2009, 2011 Mount Allison's Paul Paré Excellence Award recognizing outstanding research
- 2005-2010 NSERC University Faculty Award (**\$40,000/year**)
- 2006 Mount Allison's PetroCanada Young Innovator Award
- 2005 Ecological Society of America (ESA) Edward S. Deevey Award
- 2005 NSERC post-doctoral fellowship (declined last 22 months)
- 2005 Rutgers Graduate School Dean's Award for Excellence in Research
- 2004-2005 US Environmental Protection Agency's Science to Achieve Results Fellowship (EPA STAR) (US \$37,000 /year, 3 years, declined years 2&3)

Invited lectures and seminars

- June 22, 2024. NRC Seminar Series. Title: Phytoplankton elemental and macromolecular composition: some thoughts. NRC, Halifax, N.S.
- June 16, 2024. ICG Seminar Series. Title: Phytoplankton elemental and macromolecular composition: some thoughts. Dalhousie University, Halifax, N.S.
- June 2023. Simons Collaboration Computational modelling of marine ecosystems (CBIOMES) Annual Meeting. Title: Macromolecular allocation strategies of phytoplankton: an update. Simons Foundation, NYC.
- May 2023. The Ocean Frontiers Institute (OFI) 2023 Researchers' Conference. Title: The Northwest Atlantic Biological Carbon Pump (NWA BCP) Project: Projecting future changes in productivity and the biological carbon pump. St. John's, NWFD.
- April 2023. Simons Collaboration on Computational Biogeochemical Modelling of Marine Ecosystems Zooplankton Modelling Workshop. Title: Non-metazoan consumers: what are their traits and trade-offs? Endocott Center, Boston MA.
- November 2022. Simons Collaboration on Ocean Processes and Ecology (SCOPE-Gradients) Annual Meeting. Z.V. Finkel and A.J Irwin joint presentation. Title: Taxonomic and environmental controls of macromolecular and elemental stoichiometry of the North Pacific Ocean. Simons Foundation, NYC.
- June 2022. Simons Collaboration Computational modelling of marine ecosystems (CBIOMES) Annual Meeting. Title: Macromolecular allocation strategies of phytoplankton. Simons Foundation, NYC.
- 11 March 2020, Invited departmental seminar, Dalhousie University, Biochemistry Department. Title: Phytoplankton in a changing world.
- 3 March 2020, Invited lecture in Conversations in Ocean Sciences class, Dalhousie University, Oceanography Department.
- 11 Feb 2020, Invited lecture in Biological Oceanography class, Dalhousie University, Oceanography Department.
- 11 July 2019, Invited seminar. University of Bristol, School of Geographical Sciences.
- 22 April 2019, Invited Seminar for the Earth, Atmospheric and Planetary Sciences Department, MIT, Cambridge, MA. Title: Revisiting the Redfield Ratio.
- 16 March 2019, Invited talk for the Future of Oceans Symposium, Royal Society of Canada. Memorial University, St. John's Newfoundland. Title: Phytoplankton in a changing world.

- 24 Oct 2018, Invited seminar for: From the Sun to your Table: Food Web Trophic Efficiency in Aquatic Ecosystems Seminar Series, University of Wisconsin, School of Freshwater Sciences, Milwaukee, WI. Title: Phytoplankton in a changing world.
- 5 Oct 2018, Invited speaker. Bedford Institute of Oceanography. Dartmouth, NS.
- 2 Oct 2018, Invited speaker. Dalhousie University. Department of Oceanography.
- 15-20 July 2018, Invited speaker. Gordon Research Conference: Ocean global change biology. Waterville Valley, NH. Title: Redfield Revisited.
- 20-23 August 2017, Invited keynote speaker. International workshop on trait-based approaches to ocean life. Bergen, Norway. Title: The macromolecular and elemental composition of microalgae.
- 13-19 August 2017, Invited keynote speaker. International Phycological Congress. Szczecin, Poland.
- 27-28 March 2017, Invited speaker. Dalhousie University. Department of Oceanography.
- 7 October 2016, Invited speaker. University of Winnipeg, Department of Biology.
- 11-12 July 2016, Invited speaker. Workshop: Global co-evolution of the ocean environment and its ecology. Bristol, UK. Funded by the European Research Council.
- 9-14 June 2016, Invited speaker. Gordon Research Conference on Marine Microbes. "Environmental shaping of functional traits and community structure." Girona, Spain.
- 12 May 2016, Invited speaker. Lund University, Department of Geology. Sweden. Title: Macroevolutionary trajectories in phytoplankton cell size over the Cenozoic.
- 14-15 April 2016, Invited speaker. The ocean and the evolution of the Earth's biogeochemical cycles. A symposium in celebration of Dr. Paul Falkowski. Rutgers University, New Jersey.
- 27 Nov. 2015, Invited seminar speaker, Biology Department, Mount Allison University, NB.
- 24 Sept. 2015, Invited seminar speaker, Special Joint Seminar for the Biology and Oceanography Departments, Dalhousie University, NS.
- 7-10 July 2015, Invited speaker (lead speaker for Ecology Session), Molecular life of diatoms. Seattle, WA.
- 7-9 January 2015, Invited speaker, Second Xiamen Symposium on Marine Environmental Sciences, The Changing Ocean Environment: from a Multidisciplinary Perspective. Xiamen, China.
- 18 Nov. 2014, Invited speaker, Marine and Environmental Biology Department, University of Southern California. L.A., CA.
- 6 Nov. 2014, Invited speaker, Biodiversity, Earth and Environmental Sciences (BEES) Department & Patrick Center for Environmental Research, Drexel University. Philadelphia, PA.
- 6-11 July 2014, Invited discussion leader, Gordon Research Conference, Ocean global change biology: interactive effects of multiple global change variables. Session: Temporal and spatial scales of biological responses to environmental change. Waterville, New Hampshire.
- 29 May 2014, Invited keynote speaker, Joint meeting of the Canadian Society of Ecology and Evolution, Canadian Society of Zoologists, and Canadian Society of Limnology. Montreal, Canada.
- 14 November 2013, Invited seminar speaker, Earth History and Paleontology Research Seminar Series, Harvard, Cambridge, MA.

- 20 November 2013, Invited speaker, Biology Departmental Seminar, St. Francis Xavier University, Antigonish, NS.
- 13-17 August 2013, Invited keynote speaker: Annual meeting of the North American Diatom Society. Title: *Diatoms in a changing world*, College of the Atlantic, Bar Harbour, ME.
- 4-10 August 2013, Invited session keynote speaker: Annual meeting of the International Phycological Congress. Title: *Phytoplankton and the marine silicon cycle*, Orlando, FL.
- November 2012. Invited speaker. Mount Allison Biology Department Seminar Series.
- Oct. 4, 2012. Invited speaker, Oxford University BUGS Seminar Series.
- Oct. 3, 2012. Invited speaker. University of Essex, Biology
- Mar. 15, 2012. Woods Hole Oceanographic Institution Biology Seminar Series.
- Feb. 25, 2012. Duke University. Earth and Ocean Sciences Seminar Series.
- September 7, 2011. MIT Program in Atmospheres, Oceans and Climate. SACK lunch seminar.
- Aug 5-10 2007, Invited keynote speaker: Annual meeting of the Phycological Society of America. Providence, Rhode Island.
- July 9-14 2006, Invited speaker: Gordon Research Conference, Metabolic Basis of Ecology, Bates College, Lewiston, Maine.
- 2006, Invited speaker: Geological Society of America: Session: Lilliput effect. Title: *Trajectories in cell size in response to climate*. Philadelphia. Session covered by Christian Science Monitor.

Working groups & workshops

- April 2023. Simons Collaboration on Computational Biogeochemical Modelling of Marine Ecosystems Zooplankton Modelling Workshop.
- Dec 9-12, 2019, NYC, Simons Foundation Collaboration on Ocean Processes and Ecology Annual meeting (SCOPE), Chaired discussion on future directions of program.
- Oct 25-27, 2019. Halifax, NS. Canadian BioGeoSCAPES planning workshop. Provided summary of the CBIOMES program.
- Jan. 14, 2019. Workshop on Marine Harmful Algal Blooms. Bedford Institute of Oceanography, Dartmouth, NS.
- Nov. 20, 2018. Atlantic Canadian Cyanobacterial Workshop. NRC, Halifax, NS.
- June 2018. Toronto. ON. Canadian Institute for Advanced Research (CIFAR). Workshop: *Light to Life*. PIs: Paul Falkowski and Kurt Konhauser.
- Oct. 9-12, 2018. Ocean Frontiers Conference. St. John's NFLD.
- May 2018. Radcliff Institute for Advanced Study, Harvard University. *Ancient DNA from the Seafloor to Predict the Fate of Plankton in a Future Ocean: Challenges and Opportunities in Paleogenomics*. Invited participant. Organizers: Andrew Knoll, Chris Bowler.
- October 2017. San Francisco. Simons Foundation. A joint meeting of the SCOPE Gradients Cruise participants and CBIOMES principal investigators.
- August 2017. Bergen, Norway. *Statistical models of phytoplankton traits and the challenges of interpreting field data*. FILAMO workshop on Obstacles in communication between field, lab, and modeling work. Invited participant. Organizers: C. Lindemann, O. Fiksen.

- Jan. 2017. NYC, USA. *SCOPE Computational Workshop. Computational modeling of marine microbial communities*. A workshop funded by the Simons Foundation. PI: Mick Follows.
- 2015 Nov. 29-Dec. 4. Leipzig, Germany. *Global Changes in Marine Plankton Diversity and Productivity*. A workshop funded by the Synthesis Centre of Biodiversity Science (sDiv) at the German Center for Integrative Biodiversity Research (iDiv). PIs: A. Lewandowska & B. Worm.
- June 8-10, 2014. Palo Alto, CA. A convening focused on *the potential role that diatoms can play as a model system for probing microbe-microbe interactions and nutrient flow in the world's oceans*, hosted by the Marine Microbiology Initiative at the Gordon and Betty Moore Foundation.
- Sept. 8-11, 2013. Haifa, Israel. Planning workshop: *Macromolecular pools: models and measurements*. A planning meeting of the Follows, Sher and Finkel research groups.
- Dec. 13-14, 2012. Exeter, UK. Workshop *Representation of phytoplankton physiology in marine ecosystem models*. Invited by James Clark, College of Life & Env. Sci., U. of Exeter.
- June 2012 Twin Bridges, Montana. *Meeting of the Palmer Long Term Ecosystem Research Network working group* with Polar Oceans Research
- Jan. 2012 & 2011 Durham, N.C. NSF Funded National Evolutionary Synthesis Center (NESCent) Working group *Determinants of extinction in ancient and modern seas*. Coordinators: Paul Harnik, Seth Finnegan, and Rowan Lockwood.
- June 8-13, 2009 Macquarie University, Sydney, Australia. ARC-NZ Research Network for Vegetation Function Working group 55 *Function and cell size*. Organizer: J. Raven.
- May 8-9, 2008 Woods Hole Oceanographic Institution, MA. Working group: *Size structured models in oceanography*.
- July 14-18, 2008 Macquarie University, Sydney, Australia. ARC-NZ Research Network for Vegetation Function Working group 33, Part II *Allometry and Composition in the Ecology of Aquatic Primary Producers*
- December 18-21, 2007 Macquarie University, Sydney, Australia. ARC-NZ Research Network for Vegetation Function Working group 33: *Allometry and Composition in the Ecology of Aquatic Primary Producers*
- Feb. 17-19, 2006 National Center for Ecological Analysis and Synthesis, Santa Barbara, California Micropaleontology working group of the Paleobiology Database Part II.
- February 18-21, 2005 Natural History Museum of London, London, UK. Micropaleontology working group of the Paleobiology Database.
- August 15-17, 2004 Finse, Norway. Invited participant of a working group on ecological stoichiometry, Funded by the Center for Advanced Study of the Norwegian Academy of Letters.

Teaching and supervision of highly qualified personnel (HQP)

Summary: I am currently the primary supervisor for 2 B.Sc honours students, 1 M.Sc. student, 1 Ph.D. student, 1 post-doctoral fellow, 3 laboratory technicians, and 1 lab manager. I am co-supervisor for 1 M.Sc. student, 1 post-doctoral fellow and 1 research associate.

Course taught at Dalhousie: OCEA4140/5140 Biological Oceanography (Winter 2024), OCEA5241 Special Topics: Influential papers in Biological Oceanography (Fall 2020, Winter 2023), OCEA3004 The last billion years (Fall 2019).

Courses taught at Mount Allison University: GENS 3451 Earth System Science; GENS 3461 Oceanography; GENS 4421 Seminar in Environmental Science (Climate Change), GENS 3991 Marine Pollution.

Oceanography B.Sc. thesis - marker

2024: Lara Mitchell (Supervisor: C. Buchwald)

2023: Sam Cutcliffe (Supervisor: C. Brown)

2021: Deklan Mengering (Supervisor: H. MacIntyre)

Biology B.Sc. thesis - marker

2023: Jensen Keltie (Supervisor: J. LaRoche)

B.Sc. theses supervised:

- Maija McGraw. 2024. Department of Oceanography. Title: The elemental stoichiometry of mesozooplankton taxa in the Labrador Sea.
- Chris Lord. 2024. Department of Biology. Title: Assessing the impact of inorganic nutrient inputs on phytoplankton community stoichiometry in the North Pacific Subtropical Gyre.
- Sally Faulkner. 2017. Variation in elemental and macromolecular composition in the diatom *Thalassiosira* under N and P starvation. Department of Geography and Environment.
- Matthew Fyfe. 2017. Size scaling of storage carbohydrates in diatoms. Department of Geography and Environment.
- Akarsh Pai. 2017. Influence of N and P starvation on the photosynthetic apparatus of *Phaeocystis*. Biochemistry Department.
- Catherine Fiset. 2017. Influence of N and P starvation on elemental and macromolecular composition of *Phaeocystis*. Biology Department.
- Aneri Gerg. 2016. *Micromonas* in a changing world. Department of Geography and Environment.
- Kathleen Sheridan. 2014. The effects of temperature and irradiance on the growth and biochemical composition of the marine diatom *Thalassiosira pseudonana*. Department of Chemistry and Biochemistry.
- Tyson Burris. 2014. Light- and temperature-dependent changes in the photophysiology of the diatom *Thalassiosira pseudonana*. Department of Biology.
- Johnathan D.H. Carter. 2014. Marine microfossils across the K-Pg boundary: an extraction of diatoms tests and a data-analysis of temporal distribution for dinoflagellates. Department of Geography and Environment.
- Zoe Frothingham. 2013. Microscopic analysis of phytoplankton community composition off the coast of the West Antarctic Peninsula January 2012. Department of Geography and Environment.
- Laura Boyd. 2013. Effect of temperature on the physiology of *Phaeodactylum tricornerutum* Bohlin. Department of Geography and Environment.

- Elizabeth Anne Kerrigan. 2011. The impact of temperature on diatom size structure in a sub-arctic lake over the last 6000 years. Department of Geography and Environment.
- Helena van Tol. 2011. Macroevolutionary trends in silicoflagellates skeletal morphology: the costs and benefits of silicification. Department of Geography and Environment.
- Susan Christina Sharpe. 2010. Testing the $\frac{3}{4}$ rule of metabolic scaling within and across populations of *Ditylum brightwellii* (Bacillariophyta). Department of Chemistry and Biochemistry.
- Kyle A. Matheson. 2008. Differences in silicon frustules between an open ocean and coastal chain-forming diatom in response to silicon concentration. Department of Biology.
- Kelly Regan. 2008. Effects of high silicon concentrations and cell size on the silicon content of marine diatoms. Department of Biology.

List of highly qualified personnel supervised

Undergraduate research

Primary supervisor:

- Elisa Dai (Student lab technician, Jan. 2024- May 2024)
- Maija McGraw (Honours thesis in Oceanography, 2024)
- Chris Lord (Co-op student and Honours thesis in biology, 2022-2024)
- Aaraya Aad(Lab assistant, 2023/4)
- Junlin Wu (Lab assistant, 2023)
- Isobel Ross (Co-op student, part time lab support, 2022-2023)
- Gracie Walker (Waterloo Coop Student, Jan. 2021-Aug. 2021)
- Mirelle Naud (MtA Biology, Summer 2018 & 2019, continuing Fall 2019-May 2020 at Dalhousie)
- Kindy Christos Lonin Houinato (MtA Economics, Environmental Science, Summer 2018)
- Catherine Fiset (Biology, Mathematics, 2016-2018, awarded NSERC USRA in 2017)
- Matthew Fyfe (Environmental Science, 2017-2018, awarded an Independent student research grant funded by the Marjorie Young Bell Endowment in 2017)
- Sally Faulkner (Environmental Science, winter 2017-2018),
- Akarsh Ammenbal Pai (Chemistry and Biochemistry, summer 2017/2018),
- Margaux Daly (Environmental Science, summer 2016),
- Aneri Garg (Environmental Science Honours 2015/2016, summer 2016),
- Kathleen Sheridan (Biochemistry Honours 2014, awarded a JS Bowen Scholarship from MtA Chemistry and Biochemistry)
- Johnathan Carter (Environmental Science Honours, 2014)
- Tyson Burris (Biology Honours 2014),
- Laura Boyd (Environmental Science Honours, 2013)
- Zoe Froking (Environmental Science Honours, 2013)
- Liz Kerrigan (Environmental Science Honours, 2011)
- Helena van Tol (Environmental Science Honours NSERC funded, 2010-2011)
- Susan Sharpe (Biochemistry Honours, 2009-2011)
- Yuki Kojo (Environmental Science exchange student, 2009)
- Daniel Blanchette (Math, 2009)

- Tiffany Cloustan (Biochemistry, 2009)
- Brady Quinn (Environmental Science, 2008)
- Jesse McNichol (Biology, 2007)
- Kelly Regan (Biology Honours, 2007)
- Kyle Matheson (Biology Honours, 2007)
- Hannah McDonald (Environmental Science, 2006)

Co-supervisor or honours thesis committee member, or significant contributor to project supervision:

- Aaraya Aad (Dal, lab assistant, Summer 2023)
- Ayane Inuzuka-Boyle (Dal, Ecotaxa research student, Winter 2023)
- Elena Milito (Dal, Ecotaxa research student, Winter 2023)
- Felix Moye (Dal, Ecotaxa research student, Winter 2023)
- Daniel Ng (Dal, Ecotaxa research student, Winter 2023)
- Caitlin Taylor (Dal, Ecotaxa research student, Winter 2023)
- Zoe Nutsford (Dal, Ecotaxa research student, Winter 2023)
- Julianne Jaeger (Dal, Biology/Eng, research student, 2022/23)
- Amelie Frappier (Dal, Marine Biology, summer research student, 2022)
- Catherine Savard (Queens, Geography, summer research student, 2022)
- Linh Dinh (Dal, Math, summer research student, 2022)
- Thomas Finet (Dal, Biology/Oceanography exchange student from France, co-supervised with A. Irwin. Winter 2020)
- Riley Klaver (Dal, Biology honours, supervisor Catherine Johnson BIO, 2019)
- Justin Laforest (St. Francis Xavier Environmental Science student, co-supervision with A. Irwin summer 2017)
- Michaël Bradet-Legrès (Mathematics and Computer Science, co-supervision with A. Irwin summer 2017)
- Thomas Hammond (Mathematics and Computer Science, co-supervision with A. Irwin summer 2017)
- Catherine Fiset (Mathematics and Computer Science, co-supervision with A. Irwin summer 2015)
- Matthew Fyfe (Environmental Science, co-supervision with Dr. J. Kurek summer 2016)
- Greg Legere (Supervisor: A Irwin and D. Vogal, Mathematics and Computer Science, 2011)
- Jennifer Jeans (Supervisor: D. Campbell, Biology, 2011)
- Andrew Nelles (Supervisor: A Irwin, Mathematics, 2010)
- Pamela Sargent (Supervisor: A. Irwin, Mathematics, 2009, 2011)
- Nicole McMillan (Supervisor A. Irwin, Mathematics, 2009)
- Tim Key (Supervisor: D. Campbell, Biochemistry, 2007)

Graduate student supervision:

- M.Sc. co-supervisor for Julia Cantelo. Department of Biology, Dalhousie University, Started 2023, ATC May 2024.

- M.Sc. supervisor for Kevan Merrow. Department of Oceanography, Dalhousie University. Started 2022.
- Ph.D. supervisor for Nuwanthi Samarasinghe. Department of Oceanography, Dalhousie University. Started Sept. 2019.
- Ph.D. supervisor for K.C. Pramir. Department of Oceanography, Dalhousie University. Started Sept. 2020 (Withdrew 2021).
- M.Sc. supervisor for Kate McLeod. Department of Oceanography, Dalhousie University. Started Sept. 2019 (Withdrew for medical reasons).

Graduate student co-supervision and service:

- 2024: Qualifying exam committee member for Jay Kirkham (April), External examiner for proposal defence for M. Healey (Feb 2024).
- M.Sc. committee member for Marie Egert. Department of Oceanography, Dalhousie University. Supervisor: H. MacIntyre. Second meeting: May 2024.
- Ph.D. committee member for Manon den Haan. Department of Oceanography, Dalhousie University. Supervisor: S. Fortune. First meeting: June 2023
- M.Sc. committee member for Alexis Bazinet. Department of Oceanography, Dalhousie University. Supervisor: S. Fortune. First meeting: May 2023
- Ph.D. committee member for Zoe Aarons, MIT/Woods Hole Oceanographic Institution, Supervisor: M. Follows. First meeting: 2022.
- Ph.D. committee member for Scott Pollara. Department of Biology, Dalhousie University. Supervisor: E. Bertrand. ATC April 2021.
- Ph.D. committee member for Melina Mehlmann. Department of Oceanography, Dalhousie University. Supervisor: K. Fennel. First committee meeting April 27, 2021, completed with M.Sc. 2024
- Chair for Dal. Oceanography M.Sc. defense for Emilee Burris, April 4, 2021.
- M.Sc. advisory committee member for Britton Dempsey. Department of Oceanography, Dalhousie University. Supervisor: C. Buchwald. October 2020-present.
- Ph.D. committee member for Cat Bannon. Department of Biology, Dalhousie University. Supervisor: E. Bertrand. ATC May 2020.
- MSc. committee member for Catalina Albury. Department of Biology, Dalhousie University. Supervisor: E. Bertrand. 2020-2022.
- Ph.D. committee member for Megan Roberts. Department of Biology, Dalhousie University. Supervisor: E. Bertrand. ATC May 2020-2022.
- Ph.D. committee member for Lina Garcia Suarez. Department of Oceanography, Dalhousie University. Supervisor: K. Fennel. First committee meeting Spring 2020.
- M.Sc. committee member for Connor Yamamoto. Department of Oceanography, Dalhousie University. Supervisor: H. MacIntyre. First committee meeting May 2020, completed 2023.
- Ph.D. committee member for Shaomin Chen. Department of Earth Science, Dalhousie University. Supervisor: O. Sherwood. Oct. 2019-
- Ph.D. committee member for Loay Jabre. Department of Biology, Dalhousie University. Supervisor: E. Bertrand. Sept. 2018-2023.

- Dalhousie Oceanography Qualifying Exam chair: Meredith Burke: Nov. 25, 2019; Allison Chua: March 26, 2019.
- Dalhousie Oceanography Qualifying Exam Committees: Sarah de Mendonca: Feb. 11, 2021; Arianna Balbar: April 30, 2020; Bin Wang: Feb 27, 2019; Benjamin Richaud: Oct. 7, 2019; Meg Carr: Nov. 5, 2019.
- Dalhousie Oceanography graduate defense department representative: Nadine Lehmann. Ph.D defense Oct 24. 2019.
- M.Sc. committee member for Samantha Setta. Texas A&M University, Oceanography. Supervisor: A. Quigg, June 2017.
- Ph.D. examination board for Guillaume Fontorbe. Department of Geology, Lund University. Supervisor: Daniel Conley. May 2016.
- Ph.D. co-supervisor for Marcella Nunez. Texas A&M University, Oceanography. Supervisor: A. Quigg, 2015 (Withdrew from the program).
- Ph.D. committee member for Heera Malik. Ecology and Environmental Science, University of Maine. Supervisor J. Saros. 2014-2016.
- Ph.D. examining committee for Jennifer Dingman. Biology, UNB Fredericton. Supervisor J. Lawrence. 2011. Jennifer switched supervisors and topics.
- M.Sc. committee member for Avery McCarthy. Biology, Mount Allison University. Supervisor D. Campbell. 2010.
- M.Sc. external examiner for Anadiuska N. Rondon. Oceanography, Dalhousie University. Supervisor Marlon Lewis. 2009.
- Ph.D. committee for Alex Kahl. Oceanography, Rutgers University. Supervisor: Oscar Schofield. 2008.

Post-doctoral research supervision:

- Dr. Peyman Fahimi (Winter 2024-)
- Dr. Laura Bretherton (Jan. 2018-Dec. 2020, 2022-)
- Dr. Sing-how Tuo (Winter 2021-2022)
- Dr. Suchandan Bernal (Fall 2020-2022)
- Dr. Olga Carnicer (May 2019-Dec. 2020)
- Dr. Joe Siddons (co-supervised with A. Irwin, April 2019-2022)
- Dr. Vinitha Ebenezer (April 2018-2022)
- Dr. Yong Zhang (May 2018-April 2019)
- Dr. Rosie Sherwood (Sept. 2017-Aug. 2018)
- Dr. Deepak Nanjappa (co-supervised with A. Irwin, Sept. 2017-Aug. 2019)
- Dr. Zhengki Li (Sept. 2017-2021)
- Dr. Zhi-ping Mei (co-supervised with A. Irwin, July 2017-Nov. 2019)
- Dr. Yue Liang (co-supervised with A. Irwin, May 2016- 2019)
- Dr. Niall McGinty (co-supervised with A. Irwin, Oct. 2016-)
- Dr. Justin Leifer (Dec. 2014-Aug 2018)
- Dr. Nils Guelzow (June 2014-May 2015)
- Dr. Ina Benner (April 2014-May 2018)
- Dr. Chris Brown (On PT contracts 2013- 2017)

- Dr. Julie Koester (Sept 2012-July 2014)
- Dr. Andrew Barton (Jan. 2012-2013)
- Dr. Crispin Mutshinda (co-supervised with A. Irwin, 2011-2013 & 2017-)
- Dr. Georgia Klein (2010-2011)
- Dr. Yaping Wu (2010-2011)
- Dr. Melissa Grey (NSERC PDF, MtA 2010-12)
- Dr. Zhi-Ping Mei (co-supervised with A. Irwin, 2007-2010)
- Dr. Bingzhang Chen (co-supervised with A. Irwin, 2009-2010)
- Dr. Martina Loeb (co-supervised with D. Campbell, 2008-2010)
- Dr. Tufail Malik (McCain PDF, co-supervised with A. Irwin, 2007-2009)
- Dr. Christophe Six (co-supervised with Dr. D. Campbell, 2005-2007)

Technical support supervision:

- Artem July (July 2023-)
- Mykola Prus (Jan. 2023-)
- Ruby Hu (June 2017-)
- Khadejah Carey (August 2019-2022)
- Susan Sharpe (June 2018-June 2019)
- Peter Irwin (2011-2018)
- Kakoli Jasmin (May-Aug. 2013)
- Laura Boyd (May-Oct. 2013)
- Dr. Ruby Hu (NBIF/CFI research technician, 2008-2010)
- Thomas Stone (NBIF/CFI research technician, 2007-2008)
- Colin Jacob-Vaillancourt (research assistant, 2006-2007)

Visiting students and scientists

- Sept 2019: Deepa Rao, MIT Ph.D. student with Dr. Mick Follows
- April 2018: Dr. Greg Britton, post-doctoral fellow at MIT with Dr. Mick Follows
- July 2013: Dr. Rocio Lopez Flores from the University of Zaragoza awarded a Jose Castillejo Grant to visit July – Sept. 2013
- May 2013: PhD student Tamara Rodriguez from the University of Vigo, Spain (May-July)
- Jan. 2008: PhD student Ben Kotrc from Harvard University, Cambridge MA.

Community service and outreach

Summary: I am currently leading the OFI Large Research Project: The Northwest Atlantic Biological Carbon Pump. This requires coordinating meetings and reporting for 18 principal investigators and their associated students and other personnel. Over the last 5 years I have also served on the NSERC Discovery Panel, provided reviews for the NSERC RTI program, I currently Chair the T&P committee for the Oceanography Department, and I have been a reviewer for faculty promotion at MIT, USC Dornsife, University of Technology, Sydney.

Committees:

- 2023 Microbiology search committee for the Department of Microbiology & Immunology, Faculty of Medicine Dalhousie University (Chaired by J. Rodhe)
- 2022- T&P committee chair for the Oceanography Department, Dalhousie University
- 2022 (June 30) Dalhousie University NSERC Discovery Grant Information Session Panel Member
- 2021 Member of the organizing committee for the EMBO Molecular Life of Diatoms meeting (July 12-14)
- 2021 Member of the external review committee for UBC Department of Earth, Ocean and Atmospheric Sciences (April 28-29)
- 2021 (Jan) Dalhousie Biology Chair Search Committee (with Shelley Phipps and Alex Speed)
- 2018-2021 Dalhousie Oceanography Department Space Committee (3rd floor representative)
- 2016-2017 Mount Allison Senate Committee: Tenure and Promotion (Alternate)
- 2015-2018 Mount Allison Senate Committee: Readmissions Appeals Committee.
- 2015-16 Mount Allison Senate Committee: Sabbatical leaves (Alternate)
- Winter 2014-March 2015 Coordinator and Student advisor for the Environmental Science Program, Mount Allison University
- 2009-2011, 2012-2015: Scientific Advisory Committee, Joggins Fossil Institute (UNESCO World Heritage Site).
- Nov. 2013-Feb. 2014: Mount Allison's Graduate Studies committee
- 2013-2015: Mount Allison Faculty Association Executive (Past President)
- 2012, 2013: Mount Allison University Equity Panel
- 2005-2011: Coordinator and advisor for the Environmental Science Program
- 2009-2011: Member of University Senate
- Winter 2010: Mount Allison Barclay-Flemington Ad Hoc Space Committee
- 2007-2010: Mount Allison University Research and Creative Activity Committee
- 2008-2010: Mount Allison Faculty Association Executive (Membership officer, CB officer)
- 2008: Taught enrichment classes on Marine Microbes to local Marshview Middle School

Journal editorial boards and reviewing

- 2021 Reviewer for CFI JELF competition
- 2021 (Apr. 28-29) Member of External Review Committee for UBC's Department of Earth, Ocean & Atmospheric Sciences (with L. J. Graumlich, R. Pysklywek, and J. Hanchar)
- 2017-2020 Member of NSERC Discovery Geosciences evaluation group
- 2015- Editor for *Aquatic Microbial Ecology*
- 2015-2017 Associate editor for *Phycologia*
- 2011-2014 Associate Editor of the *Journal of Plankton Research*, Ed. Board member 2014-
- 2013-2014 Member of the NSERC's Ecology and Evolution and Geosciences Research Tools and Instruments Evaluation Group
- 2013 Reviewer for International Foundation of Science grant program
- 2012 Reviewer for CFI Leader's Opportunity Fund
- 2008-2011 Associate editor *PLoS ONE*
- 2008-2011 Editorial Board of the *Journal of Plankton Research*

- 2008-2009 NSF Biological Oceanography, external reviewer
- 2006-2009 Reviewer for NSERC discovery grant GSC panel 09 and 18