

# MARY I. O'CONNOR

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## EDUCATION

2008 Ph.D. Ecology, University of North Carolina – Chapel Hill  
2000 B.Sc. Aquatic Biology, Brown University

## PROFESSIONAL POSITIONS

2019- *External Faculty*, Santa Fe Institute (SFI)  
2019- *External Core Member*, Waterloo Institute for Complexity and Innovation (WICI)  
2019- *Deputy Director*, Canadian Institute for Ecology and Evolution (CIEE)  
2017-2019 *Visiting Scientist*, Eawag (Swiss Federal Institute of Aquatic and Sciences  
Technology) Proto-Synthesis Centre  
2016 - *Associate Professor*, Department of Zoology, University of British Columbia  
2015- *Affiliate*, Hakai Beach Research Institute  
2013 - *Associate Director*, Biodiversity Research Centre, University of British Columbia  
2011- 2016 *Assistant Professor*, Department of Zoology, University of British Columbia  
2009 - 2010 *Postdoctoral Associate*, National Center for Ecological Analysis and Synthesis

## AWARDS AND DISTINCTIONS

Killam Research Enhancement Award, UBC (\$15,000) 2017  
International Professional Research Excellence (IRPE) Prize,  
International Ecology Institute, Otto Kinne Foundation (€3000) 2016  
Killam Research Prize, UBC (\$5000) 2016  
Peter Wall Institute, Early Career Start-up Research Award (\$1000) 2013  
National Science and Engineering Research Council (NSERC) top-up (\$5K) 2013

## FELLOWSHIPS

Early Career Fellow, Ecological Society of America (ESA) 2016  
Wall Scholars Research Award, Peter Wall Institute for Advanced Studies (\$20,000) 2015  
Alfred P. Sloan Foundation, Sloan Fellowship for Ocean Sciences (\$50,000/yr) 2013  
National Science Foundation, Graduate Research Fellowship (3-yr fellowship) 2004  
UNC-Chapel Hill, Royster Fellowship (5-yr fellowship) 2003

## RESEARCH GRANTS and AWARDS (competitive, selected)

The Living Data Project: Training Canada's biologists in data management,  
synthesis and collaboration. NSERC Collaborative Research and Training  
Experience (CREATE) (LOI submitted) 2019  
Fisheries and Oceans Canada (DFO) Strategic Program for Ecosystem-Based  
Research and Advice (SPERA) (\$70K) 2019  
NSERC Discovery Accelerator Supplement (DAS)(\$120K) 2018  
National Science and Engineering Research Council (NSERC) Discovery Grant (\$275K) 2018  
Canadian Foundation for Infrastructure (CFI-JELF) (\$100,000) 2018

British Columbia Knowledge Development Foundation (BCKDF) (\$100,000)	2018
National Science and Engineering Council, RTI, Co-investigator (\$150,000)	2017
Canadian Healthy Oceans Network II (CHONe II) (\$5M), Network Investigator	2016-2020
Canadian Institute for Ecology and Evolution (CIEE), O'Connor and Gonzalez	2015
German Center for Biodiversity Synthesis (iDiv), Supp, Dornelas and Gonzalez	2015
National Science and Engineering Council, RTI, Co-investigator (\$81,410)	2015
National Center for Ecological Analysis and Synthesis (NCEAS), O'Connor and Greig	2012
Canadian Institute for Ecology and Evolution (CIEE), Greig and O'Connor	2012
Canadian Foundation for Infrastructure (CFI) (\$325,000)	2012
UBC Mobility Award (\$1500)	2012
Bamfield Marine Science Centre Research Grant (\$5000)	2012
National Science and Engineering Research Council (NSERC) Discovery Grant (\$110K)	2011
National Fish and Wildlife Association's Budweiser Conservation Scholarship (\$10K)	2007
Smith Research Grant, UNC-Chapel Hill (\$1000)	2006

### RESEARCH FUNDING – NOT COMPETITIVE

Coastal Habitat Comprehensive Research Project, Eelgrass Project, funded by Niskamoon Corporation, and entity of the Cree Nation (Quebec) Full project: \$618,739.67; Eelgrass portion (O'Connor PI): \$212,170.	2019-2020
Tula Foundation, Microbes to Macrophytes (\$55,000), Co-investigator	2014-2016
Tula Foundation, Changing Seascapes - Seagrass, Co-investigator	2014-2016

### PUBLICATIONS (Peer-reviewed – selected to emphasize synthesis).

\*products of O'Connor's NCEAS/CIEE/sDIV working groups

# undergraduate, graduate or postdoctoral research under O'Connor's supervision

= equal contributions among authors

**O'Connor, M I.**, M. Pennell, F. Altermatt, B. Matthews, C. Melian, A. Gonzalez. 2019.

Principles of ecology revisited: integrating information and ecological theories for a more unified science. *Frontiers in Ecology and Evolution*.

Fey, S.B., D. A. Vasseur, K. Alujevic, K. J. Kroeker, M. L. Logan, J. P. DeLong, **M. I.**

**O'Connor**, S. Peacor, V. H. W. Rudolf, R. L. Selden, A. Sih, S. Clusella-Trullas. 2019.

Opportunities for Behavioral Rescue Under Rapid Environmental Change. *Global Change Biology*.

\*Chase, J., B. McGill, P. L. Thompson, L. Antao, A. Bates, S. Blowes, M. Dornelas, A.

Gonzalez, A. Magurran, S. Supp, M. Winter, A. Bjorkman, H. Bruelheide, J. E. K. Byrnes, J. Cabral, R. Elahi, C. Gomez, H. Guzmán, F. Isbell, I. Myers-Smith, H. Jones, J. Hines, M. Vellend, C. Waldock, **M. I. O'Connor**. 2019. Species richness change across spatial scales. In revision. *Oikos*.

#Garzke, J., S. J. #Connor, U. Sommer, and **M. I. O'Connor**. 2019. Food chain length modifies the effect of temperature on ecosystems. *PLoS Biology*.

- Stier, A. C., S. C. Lee, and **M. I. O'Connor**. *In Press*. Temporal variation in dispersal modifies dispersal-diversity relationships in a seagrass metacommunity. *Marine Ecology Progress Series*.
- #Whippo, R., N. S. #Knight, C. #Prentice, J. #Cristiani, M. #Siegle, **M. I. O'Connor**. 2018. Epifaunal diversity patterns within and among seagrass meadows suggest landscape scale biodiversity processes. *Ecosphere* 9(11) e02490.
- Röhr, M. E., M. Holmer, J. K. Baum, M. Björk, D. Chin, L. Chalifour, S. Cimon, M. Cusson, M. Dahl, D. Deyanova, J. E. Duffy, J. S. Eklöf, J. K. Geyer, J. N. Griffin, M. Gullström, C. M. Hereu, M. Hori, K. A. Hovel, A. R. Hughes, P. Jorgensen, S. Kiriakopolos, P-O. Moksnes, M. Nakaoka, **M. I. O'Connor**, B. Peterson, K. Reiss, P. L. Reynolds, F. Rossi, J. Ruesink, R. Santos, J. J. Stachowicz, F. Tomas, K.-S. Lee, R. K. F. Unsworth C. Boström. Blue carbon storage capacity of temperate eelgrass (*Zostera marina*) meadows, 2018, *Global Biogeochemical Cycles* 32(10) 1457-1475.
- Guzman, L., R. Germain, C. #Forbes, S. Straus, **M. I. O'Connor**, D. Gravel, D. Srivastava, P. L. #Thompson. 2018. Towards a multi-trophic extension of metacommunity ecology. *Ecology Letters* 22(1): 19-33.
- #Bernhardt, J. R., J. M. #Sunday, P. L. #Thompson, and **M. I. O'Connor**. 2018. Nonlinear averaging of thermal experience predicts population growth rates in a thermally variable environment. *Proceedings of the Royal Society of London-B*. 285: 20181076
- #Bernhardt, J. R., J. M. #Sunday, and **M. I. O'Connor**. 2018. Metabolic theory and the temperature size rule explain the temperature dependence of population carrying capacity. *The American Naturalist* 192(6): 687-697.
- +Thompson, P. L., A. Gonzalez, **M. I. O'Connor**, F. Isbell, M. Loreau. 2018. The strength of the biodiversity-ecosystem function relationship depends on spatial scale. 285 *Proceedings of the Royal Society of London, B*.
- Louca, S., M. F. Polz, F. Mazel, M. B. N. Albright, J. A. Huber, **M. I. O'Connor**, M. Ackermann, A. S. Hahn, D. S. Srivastava, S. A. Crowe, M. Doebeli, L. W. Parfrey. *Accepted*. Function and functional redundancy in microbial systems. *Nature Ecology and Evolution*. 2: 936-943.
- Iacarella, J., #Adameczyk, E., Bowen, D., Chalifour, L., Eger, A., Heath, W., Helms, S., Hessing-Lewis, M., Hunt, B, MacInnis, A., **O' Connor, M. I.**, Robinson, C.L.K., Yakimishyn, J., Baum, J. 2018. Anthropogenic disturbance homogenizes seagrass fish communities. *Global Change Biology* 24: 1904-1918.
- #Siegle, M. R., R. B. Taylor, **M. I. O'Connor**. 2018. Prior heat accumulation reduces survival during subsequent experimental heat waves. *Journal of Experimental Marine Biology and Ecology* 501: 109-117.

- Barnes, A. D., N. Eisenhauer, C. Scherber, M. Jochum, J. Lefcheck, **M. I. O'Connor**, P. de Ruiter, and U. Brose. 2018. Energy flux: the link between multi-trophic biodiversity and ecosystem functioning. *Trends in Ecology and Evolution*. 33(3): 186-197.
- Reynolds, P. L., J. Stachowicz, K. Hovel, C. Bostrom, K. Boyer, M. Cusson, J. Eklof, F. Engel, A. Engelen, B. K. Eriksson, J. Fodrie, J. Griffin, C. Hereu, M. Hori, T. Hanley, M. Ivanov, P. Jorgensen, C. Kruschel, K-S. Lee, K. McGlathery, P-O Moksnes, M. Nakaoka, F. Tomas Nash, **M. I. O'Connor**, N. O'Connor, R. Orth, F. Rossi, E. Sotka, R. Unsworth, M. Whalen, J. E. Duffy. 2018. Latitude, temperature and habitat complexity predict predation pressure in eelgrass across the Northern Hemisphere. *Ecology*. 99(1): 29-35.
- Ruesink, J., J. J. Stachowicz, P. L. Reynolds, C. Bostrom, M. Cusson, J. Douglass, J. Eklof, A. Engelen, M. Hori, K. Hovel, K. Iken, P-O Moksnes, M. Nakaoka, **M. I. O'Connor**, J. Olsen, E. E. Sotka, M. Whalen, J. E. Duffy. 2017. Form-function relationships in a marine foundation species depend on scale: a shoot to global perspective from a distributed ecological experiment. *Oikos* 127(3):364-374.
- Pennell, M. W. and **M. I. O'Connor**. 2017. A modest proposal for unifying macroevolution and ecosystem ecology. *The American Naturalist*. Online.
- Isbell, F., A. Gonzalez, M. Loreau, J. Cowles, S. Diaz, A. Hector, G. M. Mace, D. A Wardle, **M. I. O'Connor**, J. E. Duffy, L. A. Turnbull, P. L. #Thompson, A. Larigauderie. 2017. Linking the influence and dependence of people on biodiversity. *Nature* 546: 65-72.
- Osmond, M. M., M. Barbour, J. #Bernhardt, J. #Sunday, M. Pennell, **M. I. O'Connor**. 2017. Warming induced changes to body size stabilize consumer-resource dynamics. *The American Naturalist*.
- O'Connor, M. I.**, A. Gonzalez, J. E. K. Byrnes, B. J. Cardinale, J. E. Duffy, L. Gamfeldt, J. Griffin, D. U. Hooper, B. Hungate, A. Paquette, P. Thompson, L. Dee, K. Dolan. 2017. Toward predictive scaling coefficients for biodiversity and ecosystem functioning relationships. *Oikos* 126: 18-31
- Gonzalez, A., B. J. Cardinale, J. E. K. Byrnes, F. Isbell, G. R. H. Allington, D. G. Brown, A. Endsley, D. U. Hooper, **M. I. O'Connor** and M. Loreau. 2016. The challenge of estimating global patterns of local biodiversity change: a critique of recent papers finding no net loss of local diversity. *Ecology*. *In press*.
- Brown, C., **M. I. O'Connor**, E. S. Poloczanska, L. Buckley, M. Burrows, C. Duarte, B. Halpern, J. Pandolfi, C. Parmesan, A. J. Richardson. 2016. Ecological and methodological drivers of species' distribution and phenology responses to climate change. *Global Change Biology* 22(4) 1548-1560.
- #Tseng, M. and **M. I. O'Connor**. 2015. Predation pressure accelerates evolutionary response of prey to temperature change. *Biology Letters* 11:20150798.
- Bruno, J. F., L. A. Carr, and **M. I. O'Connor**. 2015. Marine Metabolic Ecology: Exploring the role of temperature in the ocean through metabolic scaling. *Ecology* 96(12): 3126-3140.
- #Huang, A., M. Essak, **M. I. O'Connor**. 2015. Top-down control by great blue herons *Ardea Herodias* regulates seagrass-associated epifauna. *Oikos* 124(11): 1492-1501.

- Atkins, R. L., J. N. Griffin, C. Angelini, **M. I. O'Connor**, B. R. Silliman. 2015. Consumer-plant interaction strength: importance of body size, density and metabolic biomass. *Oikos* 124(10): 1274-1281.
- #Elahi, R., **M. I. O'Connor**, J. E. K. Byrnes, J. Dunic, B. K. Eriksson, M. J. S. Hensel, and P. J. Kearns. 2015. Recent trends in local-scale marine biodiversity reflect community structure and human impacts. *Current Biology* 25(14): 1938-1943.
- #Stafl, N. and **M. I. O'Connor**. 2015. American pikas' (*Ochotona princeps*) foraging response to hikers and sensitivity to heat in an alpine environment. *Arctic, Antarctic and Alpine Research*. 47(3): 519-527.
- Duffy, J. E., P. L. Reynolds, C. Bostrom, J. A. Coyer, M. Cusson, S. Donadi, J. G. Douglass, J. Eklof, A. Engelen, B. K. Eriksson, S. Fredriksen, L. Gamfeldt, C. Gustafsson, G. Hoarau, M. Hori, K. Hovel, K. Iken, J. S. Lefcheck, P-O. Moksnes, M. Nakaoka, **M. I. O'Connor**, J. L. Olsen, J. P. Richardson, J. L. Ruesink, E. E. Sotka, J. Thormar, M. A. Whalen, J. J. Stachowicz. 2015. Biodiversity mediates top-down control in eelgrass ecosystems: A global comparative experiment. *Ecology Letters* 18:696-705.
- #Amundrud, S. L., D. S. Srivastava, and **M. I. O'Connor**. 2015. Indirect effects of predators control herbivore richness and abundance in a benthic eelgrass (*Zostera marina*) mesograzer community. *Journal of Animal Ecology* 84(4): 1092-1102.
- \*DeLong, J., B. Gilbert, J. B. Shurin, V. M. Savage, C. F. Clements, A. I. Dell, H. S. Greig, C. D. G. Harley, P. Kratina, K. S. McCann, T. D. Tunney, D. A. Vasseur, **M. I. O'Connor**. 2015. The body size dependence of trophic cascades. *The American Naturalist*. 185: 354-366.
- #Knight, N. S., #C. Prentice, #M. Tseng, and **M. I. O'Connor**. 2015. A comparison of epifaunal invertebrate communities in native eelgrass *Zostera marina* and non-native *Zostera japonica* at Tsawwassen, B. C. *Marine Biology Research* 11(6): 564-571.
- O'Connor**<sup>±</sup>, **M. I.**, J. Holding<sup>±</sup>, C. V. Kappel, C. M. Duarte, K. Brander, C. J. Brown, J. F. Bruno, L. Buckley, M. T. Burrows, B. S. Halpern, W. Kiessling, P. Moore, J.M. Pandolfi, C. Parmesan, E. Poloczanska, D. Schoeman, W. Sydeman, A. J. Richardson. 2015. A Confidence Index for Attribution of Biological Impacts of Climate Change. *Global Ecology and Biogeography*. 24(1): 64-76. [OPEN ACCESS]
- \*Gilbert, B., T. D. Tunney, K. S. McCann, J. P. DeLong, D. A. Vasseur, V. Savage, J. B. Shurin, A. I. Dell, B. T. Barton, C. D. G. Harley, H. M. Kharouba, P. Kratina, J. L. Blanchard, C. Clements, M. Winder, H. S. Greig and **M. I. O'Connor**. 2014. A bioenergetic framework for the temperature dependence of trophic interaction strength. *Ecology Letters*. 17: 902-914.
- Clarke, A. and **M. I. O'Connor**. 2014. Carnivores are cool: diet and body temperature in vertebrates. *Global Ecology and Biogeography*. 23: 1000-1008.
- Gerber, L. R., M. d. M. Mancha-Cisneros, **M. I. O'Connor** and E. R. Selig. 2014. Climate change impacts on connectivity in the ocean: Implications for conservation. *Ecosphere* 5(3) Article 33. [OPEN ACCESS]
- \*Vasseur, D.A., J. P. DeLong, B. Gilbert, H.S. Greig, C. D. G. Harley, K.S. McCann, V. Savage, T.D. Tunney, and **M. I. O'Connor**. *Accepted*. Increased temperature variation poses a greater risk to species than climate warming. *Proceedings of the Royal Society*.

- Burrows, M. T., D. Schoeman, A. J. Richardson, J. G. Molinos, A. Hoffman, L. B. Buckley, P. Moore, C. J. Brown, J. F. Bruno, C. M. Duarte, B. S. Halpern, O. Hoegh-Guldberg, C. V. Kappel, W. Kiessling, **M. I. O'Connor**, J.M. Pandolfi, C. Parmesan, W. J. Sydeman, S. Ferrier, K. Williams, and E. S. Poloczanska. *Accepted Dec 31, 2013*. Climate velocity and geographical limits to shifts in species' distributions. *Nature*.
- Balvanera, P., I. Syddique, L. Dee, A. Paquette, F. Isbell, A. Gonzalez, J. Byrnes, **M. I. O'Connor**, B. A. Hungate, J. N. Griffin. 2014. Linking biodiversity and ecosystem services: current uncertainties and the necessary next steps. *Bioscience*. 64(1): 49-57.
- Poloczanska, E. S., C. J. Brown, W. J. Sydeman, W. Kiessling, D. S. Schoeman, P. J. Moore, K. Brander, J. F. Bruno, L. B. Buckley, M. T. Burrows, C. M. Duarte, B. S. Halpern, J. Holding, C. V. Kappel, **M. I. O'Connor**, J. M. Pandolfi, C. Parmesan, F. Schwing, S. A. Thompson, A. J. Richardson. 2013. Global Imprint of Climate Change in Marine Life. *Nature Climate Change* 3: 919-925.
- Gilbert, B. and **M. I. O'Connor**. 2013. Climate change and species interactions: Beyond local communities. *Annals of the New York Academy of Sciences*. 1297: 98-111.
- Leis, J. M., J. E. Caselle, I. R. Bradbury, T. Kristiansen, J. K. Llopiz, M. J. Miller, **M. I. O'Connor**, C. B. Paris, A. L. Shanks, S. M. Sogard, S. E. Swearer, E. A. Treml, R. D. Vetter, R. R. Warner. 2013. Does fish larval dispersal differ between high and low latitudes? *Proceedings of the Royal Society of London, B*. 280: 1759.
- Cuddington, K., M.-J. Fortin, L. Gerber, A. Hastings, A. Liebhold, **M. I. O'Connor**, C. Ray. 2013. Ecological management in a changing world requires process-based models. *Ecosphere*. 4(2).
- Klinger, D. H., M. Turnipseed, J. L. Anderson, F. Asche, L. Crowder, A. G. Guttormsen, B. S. Halpern, **M. I. O'Connor**, R. Sagarin, K. A. Selkoe, G. Schester, M. D. Smith, P. Tyedmers. 2012. Moving beyond the fished or farmed dichotomy. *Marine Policy*. 38:369-374.
- Hooper, D. U., E. C. Adair, B. J. Cardinale, J. E. K. Byrnes, B. A. Hungate, K. L. Matulich, A. Gonzalez, J. E. Duffy, L. Gamfeldt and **M. I. O'Connor**. 2012. A global synthesis reveals biodiversity loss as a major driver of ecosystem change. *Nature*. 486: 105-108.
- Wolkowich, E. M., J. Regetz, and **M. I. O'Connor**. 2012. Advances in global change research require open science at the individual-level. *Global Change Biology*. 18: 2102-2110.
- Long, Z. T., **M. I. O'Connor** and J. F. Bruno. 2012. Effects of predation on intraspecific aggregation of prey and prey diversity in a subtidal marine food web. *Journal of Experimental Marine Biology and Ecology*. 416: 115-120.
- O'Connor, M. I.**, E. R. Selig, M. L. Pinsky and Florian Altermatt. 2012. Toward a conceptual framework for climate change ecology. *Global Ecology and Biogeography*. 21: 693-703.
- Burrows, M. T., D. Schoeman, C. M. Duarte, **M. I. O'Connor**, L. B. Buckley, C. V. Kappel, C. Parmesan, B. S. Halpern, C. J. Brown, K. Brander, J. F. Bruno, J.M. Pandolfi, W. J. Sydeman, A. J. Richardson, E. S. Poloczanska. 2012. The Pace of Shifting Climate in Marine and Terrestrial Ecosystems. Letter: Response to Hulme. *Science*.
- Burrows, M. T., D. Schoeman, L. B. Buckley, P. Moore, E. S. Poloczanska, K. Brander, C. J. Brown, J. F. Bruno, C. M. Duarte, B. S. Halpern, J. Holding, C. V. Kappel, W.

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- O'Connor, M. I.**, B. Gilbert, and C. J. Brown. 2011. Theoretical predictions for how temperature affects the dynamics of interacting herbivores and plants. *The American Naturalist* 178(5): 626-638.
- Cardinale, B. J., K. Matulich, D. U. Hooper, J. E. Byrnes, J. E. Duffy, L. Gamfeldt, P. Balvanera, **M. I. O'Connor**, and A. Gonzalez. 2011. The functional role of producer diversity in ecosystems. *American Journal of Botany* 98(3): 572-592.
- Kordas, R., C. D. G. Harley, **M. I. O'Connor**. 2011. Community ecology in a warming world: thermal influence on interspecific interactions. *Journal of Experimental Marine Biology and Ecology* 400(1-2): 218-226.
- O'Connor, M. I.**, C. R. Violin, A. Anton, L. M. Ladwig and M. F. Piehler. 2011. Shoreline stabilization alters patterns of macroalgal primary production near salt marshes. *Wetlands Ecology and Management* 19:131-140 [OPEN ACCESS]
- Smith, M. D., C. A. Rohiem, L. B. Crowder, B. S. Halpern, M. Turnipseed, J. L. Anderson, F. Asche, L. Bourillon, A. G. Guttormsen, A. Khan, L. A. Liguori, A. McNevin, **M. I. O'Connor**, D. Squires, P. Tyedmers, C. Brownstein, K. Carden, D. H. Klinger, R. Sagarin, K. A. Selkoe. 2010. Sustainability and Global Seafood. *Science* 327: 784-786.
- Moran, E. R., P. L. Reynolds, L. M. Ladwig, **M. I. O'Connor**, Z. T. Long, and J. F. Bruno. 2010. Predation intensity is negatively related to plant species richness in a benthic marine community. *Marine Ecology Progress Series* 400: 277-282.
- O'Connor, M.I.**, M. F. Piehler, D. M. Leech, A. Anton and J.F. Bruno. 2009. Warming and resource availability shift metabolism of a marine food web. *PLoS Biology* 7(8) e1000178. [OPEN ACCESS]
- O'Connor, M.I.** and J.F. Bruno. 2009. Predator richness has no effect in a diverse marine food web. *Journal of Animal Ecology*. 78: 732-740. \*Featured as an *In Focus* article
- O'Connor, M.I.** 2009. Warming strengthens an herbivore-plant interaction. *Ecology* 90(2) 388-398.
- Sax, D. F., Stachowicz, J. J., Brown, J. H., Bruno, J. F., Dawson, M. N., Gaines, S. D., Grosberg, R. K., Hastings, A., Holt, R. D., Mayfield, M. M., **O'Connor, M.I.**, and Rice, W. R. 2007. Ecological and evolutionary insights from species invasions. *Trends in Ecology and Evolution* 22(9): 465-471.
- O'Connor, M.I.**, J.F. Bruno, S.D. Gaines, B.S. Halpern, S.E. Lester, B.P. Kinlan and J.M. Weiss. 2007. Temperature control of larval dispersal: implications for marine ecology, evolution and conservation. *Proceedings of the National Academy of Sciences of the United States of America* 104: 1266-1271. [OPEN ACCESS]
- Bruno, J.F. and **M.I. O'Connor**. 2005. Cascading effects of predator diversity and omnivory in marine food webs. *Ecology Letters*, 8: 1048-1056.
- McDonald, R., M. McKnight, D. Weiss, E. Selig, **M.I. O'Connor**, C. R. Violin, A. Moody. 2005. Species compositional similarity and ecoregions: Do ecoregion boundaries represent zones of higher species turnover? *Biological Conservation*, 126: 24-40.

\* recommended by P. Kareiva to Faculty of 1000.

Wonham, M., **M. O'Connor** and C. Harley. 2005. Positive effects of a dominant invader on introduced and native mudflat species. *Marine Ecology Progress Series*, 289: 109-116.

#### REPORTS, ARTICLES, BOOK CHAPTERS (selected)

Cavender-Bares, J., Arroyo, M.T.K., Abell, R., Ackerly, D., Ackerman, D., Arim, M., Belnap, J., Castañeda Moya, F., Dee, L., Estrada-Carmona, N., Gobin, J., Isbell, F., Jaffe, R., Köhler, G., Koops, M., Kraft, N., Mcfarlane, N., Martínez-Garza, C., Metzger, J. P., Mora, A., Oatham, M., Paglia, A., Pedrana, J., Peri, P. L., Piñeiro, G., Randall, R., Robbins, W. W., Weis, J., and Ziller, S. R. Chapter 3: Status, trends and future dynamics of biodiversity and ecosystems underpinning nature's contributions to people. In IPBES (2018): The IPBES regional assessment report on biodiversity and ecosystem services for the Americas. Rice, J., Seixas, C. S., Zaccagnini, M. E., Bedoya-Gaitán, M., and Valderrama, N. (eds.). Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Bonn, Germany, pp. 171-293, contributing author: **Mary O'Connor** (Canada).

Hoegh-Guldberg, O., C. Ronghuo, P. B. Brewer, V. J. Fabry, K. Hilmi, S. Jung, E. Poloczanska, S. Sundby, J. Bell, C. J. Brown, M. T. Burrows, L. Cao, S. Donner, C. M. Eakin, A. Eide, B. Halpern, C. R. McClain, S. McKinnell, **M. I. O'Connor**, C. Parmesan, R. Ian Perry, A. J. Richardson, S. Schoeman, S. Signorini, W. Skirving, D. Stone, W. Sydeman, R. Zhang, R. van Hooidonk. *Chapter 30. The Ocean*. In: Climate Change 2014: Impacts, Adaptation and Vulnerability, Fifth Assessment Report (AR5), Intergovernmental Panel on Climate Change (IPCC). 2014.

Jarvis, L., K. McCann, and **M. I. O'Connor**. 2019. The asymmetrical impacts of climate change on food webs. In *Biodiversity and Climate Change, Vol II*. Edited by T. Lovejoy and L. Hannah.

**O'Connor, M. I.** and J. E. K. Byrnes. 2014. Biodiversity and Ecosystem Functioning. In *Marine Community Ecology and Conservation*, Edited by M. Bertness, B. Silliman, J. Stachowicz and J. Bruno. Sinauer. Pp 109-130.

**O'Connor, M. I.** and Bruno, J. F. 2012. Marine Invertebrates, in *Metabolic Ecology: A Scaling Approach* (eds R. M. Sibby, J. H. Brown and A. Kodric-Brown), John Wiley & Sons, Ltd, Chichester, UK. Pp. 188-197.

#### WORK SUBMITTED (including publisher and date of submission)

Gonzalez, A., R. Germain, D. S. Srivastava, E. Filotas, L. E. Dee, D. Gravel, M. I. O'Connor, P. L. Thompson, J. Cowles, F. Isbell, J. Montoya, Y. Zelnick, M. Loreau. *In review*. Scaling-up biodiversity-ecosystem functioning research. *Ecology Letters*.

#Bernhardt, J. R. and **M. I. O'Connor**. *In review*. Aquatic biodiversity enhances multiple nutritional benefits to humans. *Nature*. Submitted Jan 2019.

#Stark, K. A., P. L. #Thompson, J. Yakimishyn, L. Lee, **M. I. O'Connor**. Beyond a single patch: local and regional processes explain diversity patterns in a seagrass epifaunal metacommunity. *Revising following rejection from Ecology*. Submitted to *Ecology* Dec 2018.

#Siegle, M. R., R. B. Taylor, **M. I. O'Connor**. Short-term population growth rates influenced by experimental heat waves do not predict long-term abundance trends. *Ecology*. *In revision*.

\*Dunic, J. C., R. Elahi, M. J. S. Hensel, P. J. Kearns, **M. I. O'Connor**, D. Acuna, A. Honig, A. R. Wilson, and J. E. K. Byrnes. *In revision*. Human activities influence the direction and magnitude of local biodiversity change over time. *Ecology*.

Hernan Martinez, G., M. Ortega, A. Josep, K. Boyer, S. Cimon, V. Combes, M. Cusson, C. Hereu, M. Helsing-Lewis, K. Hovel, P. Jorgensen, S. Kiriakopolos, N. Kollars, **M. O'Connor**, J. Olsen, P. Reynolds, J. Ruesink, E. Voigt, F. Tomas. *Submitted*. Resource availability shapes latitudinal gradients of plant defense against herbivory in a marine foundation species. *Ecology Letters*.

## PRESENTATIONS

### *Invited seminars*

2019 Toward a Unified Science of Ecological Change: Advances and Challenges in Biodiversity and Metabolic Scaling

Santa Fe Institute (SFI), Santa Fe, New Mexico, USA

Toward a Unified Science of Ecological Change: Advances and Challenges in Biodiversity and Metabolic Scaling

Institute for the Ocean and Fisheries, University of British Columbia

Toward a Unified Science of Ecological Change: Advances and Challenges in Biodiversity and Metabolic Scaling

Duke University Marine Lab, Beaufort, NC, USA

2018 Toward a Unified Science of Ecological Change: Advances and Challenges in Biodiversity and Metabolic Scaling

University of Montana, Bozeman, USA

Toward a Unified Science of Ecological Change: Advances and Challenges in Biodiversity and Metabolic Scaling

Simon Fraser University, Canada

Toward a Unified Science of Ecological Change, Reed College, Oregon, USA

Toward a Unified Science of Ecological Change: Advances and Challenges in Biodiversity and Metabolic Scaling

Oxford University, UK

- Toward a Unified Science of Ecological Change: Advances and Challenges in Biodiversity and Metabolic Scaling  
EAWAG, Kastanienbaum, Switzerland
- Toward a Unified Science of Ecological Change: Advances and Challenges in Biodiversity and Metabolic Scaling. *Annual E. O. Wilson Biodiversity Lecture*.  
Helmoltz Centre, Oldenburg, Germany
- Toward a Unified Science of Ecological Change: Advances and Challenges in Biodiversity and Metabolic Scaling.  
National Centre for Ecological Analysis and Synthesis (NCEAS), Santa Barbara, CA, USA
- Toward a Unified Science of Ecological Change: Advances and Challenges in Biodiversity and Metabolic Scaling.  
Imperial College London, Silwood Park, UK
- Toward a Unified Ecological Science  
University of Zurich, Zurich, Switzerland
- 2017 Marine Biodiversity in a time of humans: biodiversity crisis or resilient living system?  
University of California, Davis – Bodega Bay Marine Lab, USA
- The Tyranny of Temperature in Ecological Systems  
University of California – Davis, USA
- The Tyranny of Temperature in Ecological Systems  
University of California – Santa Cruz, USA
- The Tyranny of Temperature in Ecological Systems  
University of Florida, UFL, USA
- Toward a Unified Ecological Science  
University of Zurich, Zurich, Switzerland
- 2016 The Tyranny of Temperature in Ecological Systems  
Hopkins Marine Station, Stanford University, Monterey, CA, USA
- The Tyranny of Temperature in Ecological Systems  
Eawag, Zurich, Switzerland
- Marine Biodiversity in a time of humans: biodiversity crisis or resilient living system?  
Oregon Institute of Marine Biology (OIMB), Charleston, OR, USA
- Biodiversity Change (or not?): Challenges and Next Steps. German Synthesis Centre of Biodiversity Sciences (sDIV), Leipzig, Germany
- Harvard University, Herbaria Seminar Series. Cambridge, MA, USA
- Wall Wednesday Seminar Series, Peter Wall Institute for Advanced Studies, UBC
- 2015 University of Chicago, Ecology and Evolution seminar series, Chicago, IL, USA  
McGill University, Student-invited speaker for Organismal Biology, Montreal, QC  
University of Arizona, Ecology and Evolution seminar series, Phoenix, AZ  
University of Colorado-Boulder, Ecology and Evolutionary Biology seminar series, Colorado, USA
- 2014 Japanese Association of Marine Biological Stations, Tokyo, Japan  
Sapporo University, Sapporo, Japan  
National Marine Fisheries Service, NOAA, Seattle, USA

- Oregon State University, Corvallis, OR
- 2013 Columbia University, New York, USA  
University of Victoria, Victoria, BC  
Dartmouth College, New Hampshire, USA  
Environment Canada, Pacific Wildlife Research Centre, Delta, BC
- 2011 Bodega Marine Lab, UC – Davis, California, USA  
Simon Fraser University, Vancouver, BC  
Western Washington University, Bellingham, WA, USA
- 2009 University of Santa Barbara, Ecology, Evolution and Marine Biology Department, CA, USA  
University of British Columbia, Vancouver, BC  
University of Toronto, Toronto, Canada  
Carnegie Institute for the Environment, Stanford University, Palo Alto, CA, USA

*Other Presentations*

- 2016 Uncharted Waters: novel ecosystems in the marine environment. Panel discussion as part of Harvard University's center for the Environment series entitled Ecological Systems in the Anthropocene. *Discussion moderator (invited)*. Feb 3.  
UBC Science ONE weekly lunch seminar (invited)
- 2015 Understanding Recent Biodiversity Change, Organized and participated in symposium: UBC, May 4<sup>th</sup>, 2015.  
Sea Change and the Anthropocene: a curriculum to mobilize the witness of ecology + art. Hosted by Edith Krause and Erica Grimm at Trinity Western University, Langley, BC

*Conference Participation (Organizer, Keynote Speaker, etc). All presentations are first-authored talks or, when indicated, first-authored posters. Presentations by students or collaborators on which I am a non-presenting co-author are not listed. Student presentations not listed here.*

**\* indicates Invited Speaker**

- 2019 \*Conference on Global Change and Biodiversity, Monte Verita, Switzerland
- 2018 \*Gordon Research Conference, Unifying Ecology Across Scales. Biddeford, ME, USA
- 2017 \*British Ecological Society, Aquatic Group Annual Meeting, London, UK  
\*Canadian Society for Ecology and Evolution, Victoria, CA
- 2016 \*Western Society of Naturalists, Presidential Symposium, Monterey, CA, USA  
\*Gordon Research Conference, Unifying Ecology Across Scales. Biddeford, ME, USA  
\*Gordon Research Conference, Predator-Prey Interactions. Ventura, CA, USA

- 2015 \*Ecological Society of America 100<sup>th</sup> Annual Meeting, Baltimore, MD, USA  
 \*Canada's Healthy Oceans Network 2 (CHONE2) first annual meeting, Montreal, CA
- 2014 Western Society of Naturalists (WSN), Seattle, WA  
 \*Canadian Society of Ecology and Evolution (CSEE), Montreal, CA  
 \*Joint Aquatic Sciences Meeting (JASM), Portland, OR, USA  
 \*Zostera Experimental Network (ZEN) Conference, Washington DC, USA  
 Gordon Research Conference: Unifying Ecology Across Scales, Maine, USA. *Invited discussion leader.*
- 2013 \*Ecological Society of America (ESA) Annual Meeting, Minneapolis, MN, USA. *Session organizer.*
- 2012 Ecological Society of America (ESA) Annual Meeting, Portland, OR, USA.  
 \*Climate Change and Species Interactions, National Science Foundation meeting and Cary Conference, Cary Institute, NY, USA.
- 2011 \*National Council on Science and the Environment (NCSE) Changing Oceans meeting, Washington, D.C.
- 2010 \*AQUASHIFT Conference: Life in Changing Waters, Kiel, Germany. *Keynote speaker.*  
 Gordon Research Conference on Metabolic Ecology, Maine, USA. *Invited participant* (poster presentation)  
 \*Ecological Society of America (ESA), Annual Meeting, Pittsburgh, PA, USA.
- 2009 \*British Ecological Society (BES) Annual Meeting. England, UK.  
 Western Society of Naturalists (WSN) Annual Meeting, Seaside, CA, USA.
- 2008 Benthic Ecology Meeting (BEM), Providence, RI, USA.  
 \*American Society for Limnology and Oceanography (ALSO – Ocean Sciences). Orlando, FL, USA.
- 2007 Estuarine Research Federation (ERF) Annual Meeting. Providence, RI. USA. (poster)  
 Benthic Ecological Meeting (BEM). Atlanta, GA, USA.
- 2006 International Temperate Reefs Symposium (ITRS), Santa Barbara, CA, USA.  
 Gordon Research Conference on Metabolic Ecology. Maine, USA. *Invited participant* (poster presentation)
- 2005 Ecological Society of America (ESA), Annual Meeting, Portland, OR, USA.  
 Benthic Ecological Meeting (BEM). Williamsburg, VA, USA.
- 2004 Benthic Ecological Meeting (BEM). Mobile, AB, USA.

#### SYNTHESIS ACTIVITIES (selected)

Acronyms for funders: Canadian Institute for Ecology and Evolution (CIEE), US National Center for Ecological Analysis and Synthesis (NCEAS), German Synthesis Centre of Biodiversity Sciences (sDIV), Quebec Center for Biodiversity Science (QCBS).

\* Proposals written and groups led or co-led by O'Connor

- \*Understanding how thermal variation affects ecological processes.* Led by Joey Bernhardt, Jennifer Sunday, Andrew Gonzalez and Mary O'Connor. Funded by CIEE. 2019
- Long-term Ecological Research: Scaling-up Productivity Responses to Changes in Biodiversity,* funded by NCEAS – National Science Foundation (NSF) Long-Term Ecological Research (LTER) partnership. Led by F. Isbell, L. Dee and J. Cowles. 2017-2019
- \*Information in Ecology,* Led by M. I. O'Connor and F. Altermatt; funded by Swiss Federal Institute of Aquatic Sciences (EAWAG). 2019
- \*Does Community Openness Affect Resilience of Freshwater Ecosystems?* Led by M. O'Connor and F. Altermatt; funded by Swiss Federal Institute of Aquatic Sciences. 2017-2018
- Scaling biodiversity and Ecosystem Function.* Funded by QCBS and CRNS. Led by A. Gonzalez, M. Loreau and P. Thompson. 2017-2019
- Trophic Metacommunities.* UBC Collaborative group resulting from a student reading group I initiated. Biodiversity Centre and CIEE funded group led by R. Germain, M. Guzman and P. Thompson. 2016-2018
- Identifying Wildcards to Climate Change.* UBC working group, led by D. Srivastava 2017
- \*Quantifying Biodiversity Change Through Time (sChange).* German Synthesis Centre of Biodiversity Sciences (sDIV), Leipzig, Germany. Feb 22-27. *Co-Leader with Maria Dornelas and Sarah Supp.* 2016
- \*Understanding recent biodiversity change across spatial and temporal scales.* Working group jointly funded by Canadian Institute for Ecology and Evolution (CIEE), Quebec Center for Biodiversity Science (QCBS) and UBC's Biodiversity Research Centre. O'Connor and Gonzalez, organizers. 2015
- \*Synthesizing theory and databases to advance a general framework for how warming affects trophic interactions* (NCEAS), M. O'Connor and H. Greig co-lead 2012-2013
- \*Integrating body size and thermal scaling to understand the effects of temperature on food webs* (CIEE), H. Greig and M. I. O'Connor co-lead. 2012
- Zostera Experimental Network (ZEN),* partner in global comparative experiment 2011-2013
- Biodiversity and Ecosystem Function: Future Challenges working group* (NCEAS), invited participant, led by Bradley Cardinale, David Hooper and Emmett Duffy, 2010 - 2012
- Effects of Climate Change on Marine Systems working group* (NCEAS), invited participant, led by Anthony Richardson and Elvira Poloczanska, 2009-2012
- Envisioning a Sustainable Seafood System* (NCEAS), invited participant, led by Mary Turnipseed, Marty Smith and Larry Crowder 2009-2012

#### SERVICE (selected)

##### *Memberships on scholarly societies, including offices held and dates*

Canadian Society for Ecology and Evolution (2014, 2017)

American Society for Limnology and Oceanography (2008, 2014)

Ecological Society of America (2003, 2005, 2010, 2013, 2014, 2015, 2016)  
British Ecological Society (2009)  
Western Society of Naturalists (2009, 2014, 2016)

*Other service and leadership, including dates*

Western Society of Naturalists Secretariat (elected), 2018-2021  
Gordon Conference Vice Chair (elected), Unifying Ecology Across Scales, 2014-2016  
Gordon Conference Chair (elected), Unifying Ecology Across Scales, 2016-2018

*Editorships (list journal and dates)*

Ecology, 2016 - present  
Ecology Letters, 2015 - 2019  
Frontiers in Marine Sciences, 2015- 2015  
Ecology and Evolution (open access journal), 2013-- 2015  
PLoS ONE (open access journal), 2011-2013  
Proceedings of the National Academy of Sciences (PNAS) guest editor (2014, 2015)