

Curriculum Vitae

December 2023

Gregor Fussmann

Strathcona Chair in Zoology

Professor and Chair, Department of Biology

McGill University

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Languages: English, German, French, Latin

Citizenship: Germany; Permanent resident of Canada

1 Education

- 1996 Ph.D. in Limnology, Max-Planck-Institute of Limnology, Plön, Germany and University of Kiel, Germany
Supervisors: Prof. W. Lampert and Prof. K.O. Rothhaupt
- In-situ enclosure experiments on zooplankton interactions
- 1991 Diploma in Biology (Zoology, Botany, Ecology), Free University of Berlin, Germany
Supervisor: Prof. W. Dohle
- Changes of the rotifer community in a lake during fall circulation

2 Professional Experience

2.1 Academic positions

- 2016 - Chair, Department of Biology, McGill University, Montreal, Canada.
- 2016 - Full Professor, Department of Biology, McGill University, Montreal, Canada.
- 2011-2017 Director, Gault Nature Reserve, McGill University, Mont Saint-Hilaire, Canada.
Director, Ecology Field Station at the Wilder and Helen Penfield Nature Conservancy, McGill University, Austin, Quebec, Canada.
Gault Nature Reserve of McGill University forms the core of Canada's first UNESCO Biosphere Reserve and protects 1000 hectares of natural primeval forests of the St. Lawrence Valley. Situated at Mont-Saint-Hilaire 40 km from Montreal, the Reserve welcomes >300,000 visitors per year.
- 2009-2016 Associate Professor (tenured), Department of Biology, McGill University, Montreal, Canada.
- 2004-2009 Associate Professor (tenure-track), Department of Biology, McGill University, Montreal, Canada.
- 2001-2003 Assistant Professor ("Wissenschaftlicher Assistent"), Institute of Biochemistry and Biology, University of Potsdam, Germany.
- 2000-2001 Visiting Assistant Professor, Department of Ecology and Evolutionary Biology, Cornell University, Ithaca, NY, USA.

2.2 Research experience

- 2010-2011 Visiting Professor on sabbatical, Institute of Biochemistry and Biology, University of Potsdam, Germany.
- The evolution and maintenance of sex in monogonont rotifers
- 1997-2000 Research Associate, Department of Ecology and Evolutionary Biology, Cornell University, Ithaca, NY, USA.
Mentors: Prof. N.G. Hairston Jr. und Prof. S.P. Ellner
- Nonlinear dynamics of predator-prey systems in microcosms
- 1997 Research Associate, Institute for Hydrobiology, Technical University Dresden, Germany.
- Ecotoxicology of zebra fish embryos
- 1992 Research Assistant, Institute of Freshwater Ecology and Inland Fisheries, Berlin, Germany.
- Sedimentation in the lowland River "Spree"

2.3 Awards and Distinctions

- 2017 - Strathcona Chair in Zoology, McGill University, Montreal, Canada.
- 2016 Award for Classroom Excellence, McGill Biology Student Union.
- 1993-1996 Ph.D. Fellowship, Max-Planck Society.

3 Research and Scholarly Activity

3.1 Publications in refereed journals

(*: authorship of supervised trainees)

76. Tadiri, C.P.*, J.O. Negrín Dastis, M.E. Cristescu, A. Gonzalez & G.F. Fussmann (2023) Ecosystem connectivity and configuration can mediate instability at a distance in metaecosystems. *Functional Ecology* (DOI: 10.1111/1365-2435.14455).
75. Kagzi, K.*, K.L. Millette, J.E. Littlefair, X. Pochon, S.A. Wood, G.F. Fussmann & M.E. Cristescu (2023) Assessing the degradation of environmental DNA and RNA based on genomic origin in a metabarcoding context. *Environmental DNA* (DOI: 10.1002/edn3.437).
74. Fussmann, G.F. & M. Kopp (2023) Apparent evolutionary maladaptation and inference from reciprocal transplants. *Frontiers in Ecology & Evolution* 11, <https://doi.org/10.3389/fevo.2023.1151283>.
73. Katkov, E.* & G.F. Fussmann (2023) The effect of increasing temperature and CO₂ on experimental pelagic freshwater communities. *Limnology and Oceanography* 68, S202-S216.
72. Hébert, M.P.*, C. Soued, G.F. Fussmann & B.E. Beisner (2022) Dissolved organic matter mediates the effects of warming and inorganic nutrients on a lake planktonic food web. *Limnology and Oceanography* 68, S23-S38.
71. Kagzi, K.*, R. Hechler, G.F. Fussmann, M.E. Cristescu (2022) Environmental RNA degrades more rapidly than environmental DNA across a broad range of pH conditions. *Molecular Ecology Resources* 22, 2640-2650.
70. Barbosa da Costa, N.*, M.P. Hébert*, V. Fugère, Y. Terrat, G.F. Fussmann, A. Gonzalez & B.J. Shapiro (2022) A glyphosate-based herbicide cross-selects for antibiotic resistance genes in bacterioplankton communities. *mSystems* 7, e0148221.
69. Portalier, S.M.*, G.F. Fussmann, M. Loreau & M. Cherif (2021) Inferring size-based functional responses from the physical properties of the medium. *Frontiers in Ecology & Evolution* 9, 761984.
68. Hébert, M.P.*, B.E. Beisner, M. Rautio & G.F. Fussmann (2021) Warming winters in lakes: Later ice onset promotes consumer overwintering and shapes springtime planktonic food webs. *Proceedings of the National Academy of Sciences U.S.A.* 118, e2114840118.
67. Barbosa da Costa, N.*, V. Fugère, M.P. Hébert*, C.C.Y. Xu, R.D.H. Barrett, B.E. Beisner, G. Bell, V. Yargeau, G.F. Fussmann, A. Gonzalez & B.J. Shapiro (2021) Resistance, resilience, and functional redundancy of freshwater bacterioplankton communities facing a gradient of agricultural stressors in a mesocosm experiment. *Molecular Ecology* 30, 4771-4788.

66. Tadiri, C.P.* , G.F. Fussmann & M.E. Scott (2021) Parasite spread in experimental metapopulations: resistance, tolerance and host competence. *Oikos* 130, 1562-1571.
65. Hébert, M.P.* , V. Fugère, B.E. Beisner, N. Barbosa da Costa* , R.D.H. Barrett, G. Bell, B.J. Shapiro, V. Yargeau, A. Gonzalez & G.F. Fussmann (2021) Widespread agrochemicals differentially affect zooplankton biomass and community structure. *Ecological Applications* 31, e02423.
64. Limberger, R.* & G.F. Fussmann (2021) Adaptation and competition in deteriorating environments. *Proceedings of the Royal Society B* 288, 20202967.
63. McCann K.S., K. Cazelles, A.S. MacDougall, G.F. Fussmann, C. Bieg, M. Cristescu, J.M. Fryxell, G. Gellner B. Lapointe & A. Gonzalez (2021) Landscape modification and nutrient-driven instability at a distance. *Ecology Letters* 24, 398-414.
62. Fugère, V., M.P. Hébert* , N. Barbosa da Costa* , C.C.Y. Xu, R.D.H. Barrett, B.E. Beisner, G. Bell, G.F. Fussmann, B.J. Shapiro, V. Yargeau & A. Gonzalez (2020) Community rescue in experimental phytoplankton communities facing severe herbicide pollution. *Nature Ecology & Evolution* 4, 578–588.
61. Katkov, E.* , E. Low-Décarie & G.F. Fussmann (2020) Intra-annual variation in the response of phytoplankton to factorial manipulation of N, P and CO₂ in a temperate mesotrophic lake. *Freshwater Biology* 65, 960-970.
60. Blasius, B., L. Rudolf, G. Weithoff, U. Gaedke & G.F. Fussmann (2020) Long-term cyclic persistence in an experimental predator-prey system. *Nature* 577, 226-230.
59. Pérez-Jvostov, F., W.J. Sutherland, R.D.H. Barrett, C.A. Brown, J.A. Cardille, S.J. Cooke, M.E. Cristescu, N.F. St-Gelais, G.F. Fussmann, K. Griffiths, A.P. Hendry, N.W.R. Lapointe, E.A. Nyboer, R.L. Pentland, A.J. Reid, A. Ricciardi, J.M. Sunday & I. Gregory-Eaves (2020) Horizon scan of conservation issues for inland waters in Canada. *Canadian Journal of Fisheries and Aquatic Sciences* 77, 869-881.
58. Brady, S.P., D.I. Bolnick, A.L. Angert, A. Gonzalez, R.D.H. Barrett, E. Crispo, A.M. Derry, C.G. Eckert, D.J. Fraser, G.F. Fussmann, F. Guichard, T. Lamy, J.E. Lane, A.G. McAdam, A.E.M. Newman, A. Paccard, G. Rolshausen, A.M. Simons, A.P. Hendry (2019) Causes of maladaptation. *Evolutionary Applications* 12, 1229-1242.
57. Tadiri, C.P.* , J. Kong, G.F. Fussmann, M.E. Scott & H. Wang (2019) A data-validated host-parasite model for infectious disease outbreaks. *Frontiers in Ecology & Evolution* 7, 307.
56. Bell, G., V. Fugère, R.D.H. Barrett, B.E. Beisner, M. Cristescu, G.F. Fussmann, B.J. Shapiro & A. Gonzalez (2019) Trophic structure modulates community rescue following acidification. *Proceedings of the Royal Society B* 286, 20190856.
55. Brady, S.P., D.I. Bolnick, R.D.H. Barrett, L.J. Chapman, E. Crispo, A.M. Derry, C.G. Eckert, D.J. Fraser, G.F. Fussmann, A. Gonzalez, F. Guichard, T. Lamy, J.E. Lane, A.G. McAdam, A.E.M. Newman, A. Paccard, B.A. Robertson, G. Rolshausen,

- P.M. Schulte, A.M. Simons, M. Vellend & A.P. Hendry (2019) Understanding maladaptation by uniting ecological and evolutionary perspectives. *American Naturalist* 194, 495-515.
54. Dargent, F.*, L. Chen*, G.F. Fussmann, C. Ghalambor & A.P. Hendry (2019) Female preference for novel males constrains the contemporary evolution of assortative mating in guppies. *Behavioral Ecology* 30, 646-657.
53. Rosenbaum, B., M. Raatz, G. Weithoff, G.F. Fussmann & U. Gaedke (2019) Estimating parameters from multiple time series of population dynamics using Bayesian inference. *Frontiers in Ecology & Evolution* 6, 234.
52. Portalier, S.M.*, G.F. Fussmann, M. Loreau & M. Cherif (2019) The mechanics of predator-prey interactions: First principles of physics predict predator-prey size ratios. *Functional Ecology* 33, 323-334.
51. Tadiri, C.P.*, M.E. Scott & G.F. Fussmann (2018) Microparasite dispersal in metapopulations: A boon or bane to the host population? *Proceedings of the Royal Society B* 285, 20181519.
50. Pérez-Jvostov, F.*, A.P. Hendry, G.F. Fussmann & M.E. Scott (2017) Experimental assessment in nature of the ecological effects of a specialist parasite. *Copeia* 105, 494-503.
49. Granados, M.*, I. Altshuler, S. Plourde & G.F. Fussmann (2017) Size and variation in individual growth rates among food web modules. *Ecosphere* 8, e01862.
48. Granados, M.*, S. Duffy*, C.W. McKindsey & G.F. Fussmann (2017) Stabilizing mechanisms in a food web with an introduced omnivore. *Ecology & Evolution* 7, 5016-5025.
47. Hiltz, J., A. Hajiaboli, G. Singh, R.B. Lennox, G.F. Fussmann, E. Low-Décarie* & M.P. Andrews (2016) Nanopatterning gold by templated solid state dewetting on the silica warp and weft of diatoms. *Journal of Nanomaterials* Article ID 6405836.
46. Low-Décarie, E.*, G.F. Fussmann, A.J. Dumbrell & G. Bell (2016) Communities that thrive in extreme conditions captured from a freshwater lake. *Biology Letters* 12, 20160562.
45. Cherif, M.*, M. Granados*, S. Duffy*, P. Robert, B. Paquin, V. Mohit, C. McKindsey, P. Archambault, B. Myrand, C. Lovejoy, R. Tremblay, S. Plourde & G.F. Fussmann (2016) Potential for local fertilization: A benthocosm test of the long-term and short-term effects of mussel excretion effects on the plankton. *PLoS ONE* 11, e0156411.
44. Tadiri, C.P.*, M.E. Scott & G.F. Fussmann (2016) Impact of host sex and group composition on parasite dynamics in experimental populations. *Parasitology* 143, 523-531.
43. Pedruski, M.*, G.F. Fussmann & A. Gonzalez (2016) A network approach reveals surprises about the history of the niche. *Ecosphere* 7, e01266.

42. Portalier, S.M.*, M. Cherif, L. Zhang, G.F. Fussmann & M. Loreau (2016) Size-related effects of physical factors on phytoplankton communities. *Ecological Modelling* 323, 41-50.
41. Dargent, F.*, G. Rolshausen, A.P. Hendry, M.E. Scott & G.F. Fussmann (2016) Parting ways: Parasite release in nature leads to non-parallel evolution of the sexes. *Journal of Evolutionary Biology* 29, 23-34.
40. Pérez-Jvostov, F.*, A.P. Hendry, G.F. Fussmann & M.E. Scott (2016) An experimental test of antagonistic effects of competition and parasitism on host performance in semi-natural mesocosms. *Oikos* 125, 790–796.
39. Dargent, F.*, A.R. Reddon, W.T. Swaney, G.F. Fussmann, S.M. Reader, M.E. Scott & M.R. Forbes (2015) Demasculinisation of male guppies increases resistance to a common and harmful ectoparasite. *Parasitology* 142, 1647-55.
38. Pérez-Jvostov, F.*, A.P. Hendry, G.F. Fussmann & M. Scott (2015) Testing for host-parasite local adaptation: an experiment with *Gyrodactylus* ectoparasites and guppy hosts. *International Journal for Parasitology* 45, 409-417.
37. Pedruski, M.T.*, G.F. Fussmann & A. Gonzalez. (2015) Predicting the outcome of competition when fitness inequality is variable. *Royal Society Open Science*, 2, 150274.
36. Low-Décarie, E.*, G. Bell & G.F. Fussmann (2015) CO₂ alters community composition and response to nutrient enrichment of freshwater phytoplankton. *Oecologia* 177, 875-883.
35. Dargent, F.*, M.E. Scott, A.P. Hendry & G.F. Fussmann (2014) Experimental evolution of parasite resistance in wild guppies: natural and multifarious selection. Invited reply. *Proceedings of the Royal Society B* 281, 20141820.
34. Limberger, R.*, E. Low-Décarie* & G.F. Fussmann (2014) Final thermal conditions override the effects of temperature history and habitat connectivity in experimental communities. *Proceedings of the Royal Society B* 281, 20141540.
33. Low-Décarie, E.*, G.F. Fussmann & G. Bell (2014) Aquatic primary production in a high-CO₂ world. *Trends in Ecology & Evolution* 29, 223-232.
32. Dargent, F.*, M.E. Scott, A.P. Hendry & G.F. Fussmann (2013) Experimental elimination of parasites in nature leads to the evolution of increased resistance in hosts. *Proceedings of the Royal Society B* 280, 20132371.
31. Fussmann, G.F. & A. Gonzalez (2013) Evolutionary rescue can maintain an oscillating community undergoing environmental change. *Journal of the Royal Society Interface Focus* 3, 20130036.
30. Xiao, X.* & G.F. Fussmann (2013) Armstrong-McGehee mechanism revisited: Competitive exclusion and coexistence of nonlinear consumers. *Journal of Theoretical Biology* 339, 26-35.
29. Dargent, F.*, J. Torres-Dowdall, M.E. Scott, I. Ramnarine & G.F. Fussmann (2013) Can mixed-species groups reduce individual parasite load? A field test with two closely related poeciliid fishes. *PLoS ONE* 8, e56789.

28. Low-Décarie, E.* , M. Jewell, G.F. Fussmann & G. Bell (2013) Long-term culture at elevated CO₂ fails to evoke specific adaptation in seven phytoplankton species. *Proceedings of the Royal Society B* 280, 20122598.
27. Gotanda, K.M., L.C. Delaire, J.A.M. Raeymaekers, F. Pérez-Jvostov*, F. Dargent*, P. Bentzen, M.E. Scott, G.F. Fussmann & A.P. Hendry (2013) Adding parasites to the guppy-predation story: insights from field surveys. *Oecologia* 172, 155-166.
26. Kovach-Orr, C.* & G.F. Fussmann (2013) Evolutionary and plastic rescue in multitrophic model communities. *Philosophical Transactions of the Royal Society B* 368, 20120084.
25. Pérez-Jvostov, F.* , A.P. Hendry, G.F. Fussmann & M.E. Scott (2012) Are host-parasite interactions influenced by adaptation to predators? A test with guppies and *Gyrodactylus* in experimental stream channels. *Oecologia* 170, 77-88.
24. Low-Décarie, E.* , G.F. Fussmann & G. Bell (2011) The effect of elevated CO₂ on growth and competition in experimental phytoplankton communities. *Global Change Biology* 17, 2525-2535.
23. Fussmann, G.F. (2011) Rotifers: excellent objects for the study of macro- and microevolutionary change. *Hydrobiologia* 662, 11-18.
22. Massie, T.M.* , B. Blasius, G. Weithoff, U. Gaedke & G.F. Fussmann (2010) Cycles, phase synchronization and entrainment in single-species phytoplankton populations. *Proceedings of the National Academy of Sciences U.S.A.* 107, 4236-4241.
21. Jones, L.E., L. Becks, S.P. Ellner, N.G. Hairston Jr., T. Yoshida & G.F. Fussmann (2009) Rapid contemporary evolution and clonal food web dynamics. *Philosophical Transactions of the Royal Society B* 364, 1579-1591.
20. Fussmann, G.F. (2008) The lake as a system of differential equations - a paradigm for the aquatic ecologist of the 21st century? *International Review of Hydrobiology* 93, 532-540.
19. Cao, J., G.F. Fussmann & J.O. Ramsay (2008) Estimating a predator-prey dynamical model with the parameter cascades method. *Biometrics* 64, 959-967.
18. Fussmann, G.F. (2008) Experimental measurements of functional response: What is the relevance for food web theory? *Proceedings International Association of Theoretical and Applied Limnology* 30, 255-258.
17. Fussmann, G.F., G. Kramer* & M. Labib* (2007) Incomplete induction of mixis in *Brachionus calyciflorus*: patterns of reproduction at the individual level. *Hydrobiologia* 593, 111-119.
16. Fussmann, G.F., M. Loreau & P.A. Abrams (2007) Eco-evolutionary dynamics of communities and ecosystems. *Functional Ecology* 21, 465-477.
15. Fussmann, G.F., G. Weithoff & T. Yoshida (2007) A direct, experimental test of resource- versus consumer-dependence. Reply to a Comment by Jensen et al. *Ecology* 88, 1603-1604.

14. Fussmann, G.F., G. Weithoff & T. Yoshida (2005) A direct, experimental test of resource- versus consumer-dependence. *Ecology* 86, 2924-2930.
13. Fussmann, G.F., S.P. Ellner, N.G. Hairston Jr., L.E. Jones, K.W. Shertzer & T. Yoshida (2005) Ecological and evolutionary dynamics of experimental plankton communities. *Advances in Ecological Research* 37, 221-243.
12. Fussmann, G.F. & B. Blasius (2005) Community response to enrichment is highly sensitive to model structure. *Biology Letters* 1, 9-12.
11. Fussmann, G.F., S.P. Ellner & N.G. Hairston Jr. (2003) Evolution as a critical component of plankton dynamics. *Proceedings of the Royal Society B* 270, 1015-1022.
10. Yoshida, T., L.E. Jones, S.P. Ellner, G.F. Fussmann & N.G. Hairston Jr. (2003) Rapid evolution drives ecological dynamics in a predator-prey system. *Nature* 424, 303-306.
9. Ellner, S.P. & G.F. Fussmann (2003) Effects of successional dynamics on metapopulation persistence. *Ecology* 84, 882-889.
8. Shertzer, K.W., S.P. Ellner, G.F. Fussmann & N.G. Hairston Jr. (2002) Predator-prey cycles in an aquatic microcosm: testing hypotheses of mechanism. *Journal of Animal Ecology* 71, 802-815.
7. Fussmann, G.F. & G. Heber (2002) Food web complexity and chaotic population dynamics. *Ecology Letters* 5, 394-401.
6. Fussmann, G.F., S.P. Ellner, K.W. Shertzer & N.G. Hairston Jr. (2000) Crossing the Hopf bifurcation in a live predator-prey system. *Science* 290, 1358-1360.
5. Fussmann, G. (1996) The importance of crustacean zooplankton in structuring rotifer and phytoplankton communities: an enclosure study. *Journal of Plankton Research* 18, 1897-1915.
4. Fussmann, G. (1993) Abundance, succession and morphological variation of planktonic rotifers during autumnal circulation in a hypertrophic lake (Heiligensee, Berlin). *Hydrobiologia* 255/256, 353-360.

3.2 Publications in refereed books, conference proceedings and encyclopaedias

3. Hairston, N.G. Jr. & G.F. Fussmann (2014) *Lake Ecosystems*. In: Encyclopaedia of Life Sciences (eLS), John Wiley & Sons Ltd, Chichester. <http://www.els.net>.
2. Granados, M.*, G.F. Fussmann & S. Plourde (2012) The contrasting differences in zooplankton community composition and abundance between aquaculture (mussel farm) and control sites in the Havre-aux-Maisons lagoon, QC. *Aquaculture Canada Proceedings 2011, AAC Spec. Publ. No. 20*, p. 55-58.
1. Fussmann, G.F. (2007) Chaotic dynamics in food web systems. In: "Complex Population Dynamics: Nonlinear Modeling in Ecology, Epidemiology and Genetics." Eds.: Blasius B., J. Kurths & L. Stone, *World Scientific Lecture Notes in Complex Systems – Vol. 7*, p. 1-20.

3.3 Research Grants

Grants and Awards Presently Held

2020-2025 NSERC (Natural Sciences and Engineering Research Council of Canada)
Discovery Grant
The impact of environmental change on freshwater communities
Fussmann (PI) total: \$165,000

Grants and Awards Previously Held

2018-2021 FRQNT (Fonds de recherche du Québec – Nature et technologies)
Team Research Grant
Dynamiques éco-évolutives hôte-parasite: manipulations expérimentales dans la nature
Hendry (PI, McGill), Scott, Montiglio (UQAM) & Fussmann
total: \$162,000
Fussmann share: ≈ 25%

2017-2022 Canada Foundation for Innovation (CFI), Innovation Fund 2017
Adaptable Earth Observation System
Gyakum (PI, McGill) & 9 others
total: \$17,441,561
Fussmann share: ≈ 8%

2014-2020 NSERC (Natural Sciences and Engineering Research Council of Canada)
Discovery Grant
Eco-evolutionary dynamics of communities in changing environments
Fussmann (PI) total: \$210,000

2016-2017 NSERC-RTI Equipment Grant
FlowCAM imaging flow cytometer for eco-evolutionary plankton research
Fussmann (PI), Cristescu, Gregory-Eaves & Gonzalez (McGill) total: \$113,560
Fussmann share: ≈ 35%

2013-2016 FRQNT (Fonds de recherche du Québec – Nature et technologies)
Team Research Grant
Dispersal and propagation of infection in aquatic host-parasite communities
Scott (PI), Fussmann & Hendry (McGill)
total: \$156,000
Fussmann share: ≈ 33%

2015-2016 Canadian Institute for Ecology and Evolution Thematic Program Grant
Workshop Organisation Grant

Adaptation versus maladaptation in response to environmental change
Hendry, Fussmann, Rowan (McGill) & Derry (UQAM)

total: \$12,548

2006-2015 Canada Foundation for Innovation (CFI),
Infrastructure Operating Fund
*Infrastructure to explore the interplay of ecological and evolutionary dynamics
in plankton communities*
Fussmann (PI) total: \$52,443

2009-2014 NSERC (Natural Sciences and Engineering Research Council of Canada)
Discovery Grant
Eco-evolutionary dynamics of populations, communities and ecosystems
Fussmann (PI) total: \$120,000

2009-2012 Mathematics of Information Technology and Complex Systems (MITACS)
Centre for Applied Mathematics in Bioscience and Medicine (CAMBAM)
Mackey (PI, McGill) & 25 others total: \$180,000
Fussmann share: ~ 4%

2008-2012 NSERC
Strategic Project Grant
*Integrating across scales in marine aquaculture: the role of trophic dynamics
and nutrient recycling for mussel production*
Fussmann (PI), Archambault (Rimouski), Lovejoy (Laval), Tremblay (Rimouski),
McKindsey (DFO), S. Plourde (DFO), Myrand (MAPAQ) & Culture Moules des Îles
(Îles de la Madeleine)
from NSERC: \$559,876
from FQRNT Aquaculture Group (RAQ): \$36,000
from Aquaculture Industry (SODIM): \$15,000

2008-2012 NSERC
Special Research Opportunity Grant
Ecology and evolution of parasite-host relationships in a real ecosystem
Fussmann (PI), Hendry, Scott (McGill) & Bentzen (Dalhousie)
total: \$351,800

2008-2011 James S. McDonnell Foundation
21st Century Science Initiative Grant: Studying Complex Systems
*Contemporary rapid evolution: Dynamics and persistence in complex ecological
communities*
Ellner (PI, Cornell), Hairston, Jones, Becks (all Cornell) & Fussmann
total: US\$449,459
total sub-award to Fussmann: US\$76,500

2011	NSERC RTI Equipment Grant <i>High-replication lake mesocosms for metacommunity research</i> Fussmann (PI), Gonzalez (McGill) & Beisner (UQÀM) Gault Nature Reserve, McGill Fac. of Science & Biology, UQÀM:	NSERC: \$59,951 \$24,000 total: <u>\$83,951</u>
2010	NSERC-RTI Equipment Grant <i>Integrated laboratory system for eco-evolutionary research on small fishes</i> Hendry (PI, McGill) & 5 others	total: <u>\$47,867</u> <u>Fussmann share: ~ 15%</u>
2008	NSERC-RTI Equipment Grant <i>CO₂ analysis system to study the ecology and evolution of phytoplankton communities in response to increasing CO₂ concentration</i> Fussmann (PI) & Bell (McGill)	total: <u>\$11,909</u>
2008	McGill School of the Environment Interdisciplinary Research Seed Fund Scott, Hendry (both McGill) & Fussmann	total: <u>\$2,000</u>
2004-2009	NSERC Discovery Grant <i>Linking population dynamics to the trophic and genetic structure of communities</i> Fussmann (PI)	total: <u>\$140,000</u>
2004-2007	Canada Foundation for Innovation (CFI) New Opportunities Fund <i>Infrastructure to explore the interplay of ecological and evolutionary dynamics in plankton communities</i> Fussmann (PI)	total: <u>\$437,038</u>
2004	NSERC-RTI Equipment Grant <i>Set of eight chemostats for the culture of predator-prey communities</i> Fussmann (PI)	total: <u>\$18,747</u>

3.4 Invited Seminars, Conference Contributions and Workshops

Invited seminars

2021	How plankton interacts with the environment – and what happens if it doesn't. Queen's University, Kingston, ON, Canada.
2020	Populations dynamics in a changing world: Stress, adaption and recovery. University of Potsdam, Germany.
2018	The tricky "evo" part of eco-evo dynamics. Key note address. Annual meeting, Dynatrait – Priority Program of the German Science Foundation. University of Potsdam, Germany.

- 2017 Adaptive and non-adaptive dynamics. CAMBAM (Centre for Applied Mathematics in Bioscience and Medicine), McGill University, Montreal, Canada.
- 2016 Eco-evolutionary change in field and laboratory communities: From parasites to CO₂. Department of Ecology and Evolution. University of Salzburg, Austria.
- 2015 Structural sensitivity in food web models. Mathematical Biosciences Institute. Columbus, Ohio, U.S.A.
- 2014 Drivers of eco-evolutionary change in communities: From parasites to CO₂. Department of Biology. Concordia University, Montreal, QC, Canada.
- 2014 Eco-evolutionary dynamics of plankton communities. Stazione Zoologica Anton Dohrn di Napoli, Naples, Italy.
- 2014 Dynamic stability and rescue eco-evolutionary in model systems. Centre for Mathematical Biology, University of Alberta, Edmonton, AL, Canada.
- 2014 Eco-evo and the response of communities to environmental change. Program in Ecology, Evolution, and Conservation Biology, University of Illinois, Urbana-Champaign, IL, U.S.A.
- 2013 Dynamics of communities: the undisturbed, the disturbed and the rescued. Department of Integrative Biology, University of Guelph, Canada.
- 2012 Understanding the dynamics of aquatic ecosystems – how to solve nature’s equation with a thousand unknowns? Department of Biology, EEB, Queen’s University, Kingston, Canada.
- 2012 Understanding the dynamics of aquatic ecosystems – how to solve nature’s equation with a thousand unknowns? Department of Biology, Université de Sherbrooke, Canada.
- 2012 Understanding the dynamics of aquatic ecosystems – how to solve nature’s equation with a thousand unknowns? Department of Biological Sciences, Université du Québec à Montréal, Canada.
- 2011 The multifaceted nature of plankton dynamics: from cell cycles to meta-communities. Helmholtz Centre for Environmental Research – UFZ, Magdeburg, Germany.
- 2011 The multifaceted nature of plankton dynamics: from cell cycles to meta-communities. University of Constance, Germany.
- 2011 Persistence, cycles and synchronization in experimental populations. University of Umeå, Sweden.
- 2011 Eco-evolutionary dynamics – an emerging paradigm or new wine in old bottles? University of Umeå, Sweden.
- 2011 The multifaceted nature of plankton dynamics: from cell cycles to meta-communities. Ruhr University Bochum, Germany.
- 2011 The multifaceted nature of plankton dynamics: from cell cycles to meta-communities. University of Cologne, Germany.
- 2011 The multifaceted nature of plankton dynamics: from cell cycles to meta-communities. IFM-GEOMAR Leibniz Institute, Kiel, Germany.

- 2011 The multifaceted nature of plankton dynamics: from cell cycles to meta-communities. Institute of Biodiversity and Ecosystem Dynamics (IBED), University of Amsterdam, the Netherlands.
- 2010 Plankton communities, global change and regional dynamics - what can we learn from experimental microcosms? Carl-von-Ossietzky-University Oldenburg, Institute for Chemistry and Biology of the Marine Environment, Germany.
- 2010 Plankton communities, global change and regional dynamics - what can we learn from experimental microcosms? University of Potsdam, Germany.
- 2010 The multifaceted nature of lake plankton dynamics: from cell cycles to meta-communities. Leibniz-Institute of Freshwater Ecology and Inland Fisheries. Berlin, Germany.
- 2009 Population and community dynamics – how important is contemporary evolution? Invited to the International MSc program in Ecology and Evolutionary Biology. Department of Biology, Ludwig-Maximilians University, Munich, Germany.
- 2007 Understanding community dynamics: From cell cycles to chemical interactions. Dartmouth College, Department of Biology, Hanover, NH, USA.
- 2007 Understanding population dynamics: From cell cycles to meta-communities, and everything in-between. Kellogg Biological Station, Michigan State University, Kalamazoo, MI, USA.
- 2007 Food chain dynamics – What’s the relevance for aquaculture? Dept. of Fisheries and Oceans (DFO), Institut Maurice-Lamontagne, Mont-Joli, Canada.
- 2006 Complex dynamics in complex food webs? Dept. of Computational Science and Engineering, McGill University, Montreal, Canada.
- 2006 Plankton in Microcosms – Testing Fundamental Ecological Theory in the Lab. Dept. of Biological Sciences, Université du Québec à Rimouski, Canada.
- 2005 Promises and pitfalls of mathematical approaches to ecological dynamics. Centre of Nonlinear Dynamics, McGill University, Montreal, Canada.
- 2004 From equilibria to clonal cycles – Exploring ecology and evolution in microcosms. Dept. of Biological Sciences, Université du Québec à Montréal, Canada.
- 2004 From equilibria to clonal cycles – Exploring ecology and evolution in microcosms. Dept. of Biological Sciences, Université de Montréal, Canada.
- 2003 Populationsdynamik und Evolution: Zwei simultane Prozesse? Institute for Chemistry and Biology of the Marine Environment, Carl von Ossietzky University, Oldenburg, Germany.
- 2003 From equilibria to clonal cycles – Ecology and evolution in the chemostat. Dept. of Biology, Ludwig Maximilians University, Munich, Germany.
- 2003 From equilibria to clonal cycles – Ecology and evolution in the chemostat. Dept. of Biology, McGill University, Montreal, Canada.
- 2002 Leibniz Institute of Freshwater Ecology and Inland Fisheries, Berlin, Germany.

- 2000 Dept. of Biological Sciences, Louisiana State University, Baton Rouge, LA, USA.
- 1998 Section of Ecology and Systematics, Cornell University, Ithaca, NY, USA.
- 1997 Institute of Freshwater Ecology and Inland Fisheries, Berlin, Germany.

Invited Conference and Workshop Presentations

- 2019 Experimental disease dynamics: the role of individual and population level traits. Annual meeting, Dynatrait – Priority Program of the German Science Foundation. University of Potsdam, Germany.
- 2018 The tricky “evo” part of eco-evo dynamics. Annual meeting, Dynatrait – Priority Program of the German Science Foundation (key note address). University of Potsdam, Germany.
- 2016 Deterministic failure to adapt. Workshop “Adaptation versus maladaptation in response to environmental change”, Canadian Institute of Ecology and Evolution (Meeting 2). Mont-Saint-Hilaire, QC, Canada.
- 2016 Adaptive and non-adaptive eco-evolutionary dynamics. Symposium speaker and panelist “Eco-evolutionary dynamics in Anthropocene ecosystems”, Ecological Society of America, Fort Lauderdale, FL, U.S.A.
- 2016 Eco-evolutionary change in aquatic communities: From parasites to CO₂. Groupe de recherche interuniversitaire en limnologie et en environnement aquatique (GRIL). Annual Meeting. Jouvence, QC, Canada.
- 2015 Adaptation vs. mal-adaptation to stressors and benefactors. Workshop “Adaptation versus maladaptation in response to environmental change”, Canadian Institute of Ecology and Evolution (Meeting 1). Mont-Saint-Hilaire, QC, Canada.
- 2015 Evolutionary rescue of communities under nonlinear environmental change. Special Session “The effects of eco-evolutionary feedbacks on communities, ecosystems, and responses to environmental change”, Ecological Society of America, Baltimore, MD, U.S.A.
- 2014 The dynamic signature of communities undergoing evolutionary rescue. Special Session “Causes and consequences of non-equilibrium dynamics in a changing world”, Ecological Society of America, Sacramento, CA, U.S.A.
- 2013 Eco-evolutionary dynamics: Linking models to live systems. Workshop "Rapid Evolution and Sustainability", Mathematical Biosciences Institute, Columbus, OH, U.S.A.
- 2013 Eco-evolutionary dynamics in aquatic communities: From mathematical to organismal models. Workshop “Innovative Approaches in Marine Environment Modelling (AIMEN)”, European Institute of Marine Science (IUEM), Brest, France.
- 2013 Eco-evolutionary dynamics in vitro. IGNITE Session “Is the Interaction of Evolutionary and Ecological Dynamics Widespread or a Special Case?” Ecological Society of America, Minneapolis, MN, U.S.A.

- 2013 Evolutionary rescue dynamics of ecological communities. Workshop “Biodiversity in a Changing World”, Centre de recherches mathématiques, Université de Montréal, Canada.
- 2012 Long-term predator-prey oscillations in chemostats. International Chemostat Workshop, Cornell University, Ithaca, NY, U.S.A.
- 2011 Evolving communities: the role of intrinsic and extrinsic environments. Workshop on Evolutionary Rescue, Montpellier, France.
- 2010 Persistence, cycles and synchronization in experimental populations. CAMBAM (Centre for Applied Mathematics in Bioscience and Medicine) workshop, McGill University, Montreal, Canada.
- 2009 Rotifers: superb objects for the study of macro- and microevolutionary change. XII International Rotifer Symposium, Berlin, Germany (invited as key note speaker).
- 2008 Eco-evo – Old methods for a new field? NERC-funded workshop “Linking evolutionary and ecological dynamics” at the Centre for Population Biology, Imperial College London, Silwood Park, UK.
- 2007 Experimental measurements of functional response: What is the relevance for food web theory? International Society of Limnology (SIL), Montreal, Canada.
- 2007 Eco-evolutionary dynamics. Frontiers in Applied and Computational Mathematics, Symposium “Mathematical Biology”, Newark, New Jersey, USA.
- 2006 How to model fitness in eco-evolutionary dynamics? First GRECA (Groupe de Recherche en Ecologie Comportementale et Animale) Symposium on “Fitness: what index for what goal?” at the Université du Québec à Montréal.
- 2004 Linking structure to dynamics in large ecological networks. Invited Discussion Leader. Santa Fe Institute Workshop “From Structure to Dynamics in Complex Ecological Networks.”
- 2003 Complex dynamics in complex food webs? Workshop "Synchronization and complex dynamics in networks with applications in ecology", Institute of Physics, University of Potsdam, Germany.

3.5 Refereeing and editorial work

Journal Associate Editor

2006-2016 *Ecology Letters*, Subject editor.

2007 Guest Associate Editor for *Proceedings International Association of Theoretical and Applied Limnology* (SIL Congress Montreal).

Journal Reviewer

American Naturalist, Archiv für Hydrobiologie, Canadian J. of Fisheries and Aquatic Sciences, Current Biology, Ecological Monographs, Ecology, Ecology Letters, Evolution, Evolutionary Applications, Frontiers in Zoology, Functional Ecology, Hydrobiologia, J. of Animal Ecology, J. of Evolutionary Biology, J. of Plankton Research, J. of Statistical Software, J. of Theoretical

Biology, Limnology & Oceanography, Mathematical Biosciences, Nature, Oecologia, Oikos, Proceedings of the Royal Society London B, Science, Theoretical Population Biology, Trends in Ecology and Evolution, Verhandlungen der Internationalen Gesellschaft für Limnologie.

Reviewer for Granting Agencies

Natural Sciences and Engineering Research Council of Canada (NSERC)
Canada Foundation for Innovation (CFI)
National Science Foundation (NSF)
German Science Foundation (DFG)
Austrian Science Fund
Belgian Science Policy Office (BELSPO)
British Ecological Society

Other

2006-09 Invited evaluator of *Faculty of 1000* (www.facultyof1000.com), Faculty of Ecology, Section Population Ecology.

3.6 Media Coverage

Dec. 2012 Un minilaboratoire sous l'eau pour prédire la santé future de nos lacs. *Le Code de Chastenay. Télé-Québec.*

Dec. 2011 Nouveau directeur à la Réserve Gault. *L'Œil Régional.*

June 2007 Publication Fussmann et al. (2007) *Functional Ecology* rated as 'Must read' in *Faculty of 1000*.

Jan. 2006 Cover photograph: Showing a chemostat to undergraduate student as part of the "Soup and Science" presentation. McGill Reporter.

July 2003 Radio Interview, Deutschlandfunk, about 'Rapid Evolution' in Yoshida et al. (2003) *Nature*.

Dec. 2000 Simple rules predict predator-prey struggles. Cornell Chronicle.

Dec. 2000 Survival of the fittest: New model offers fresh clues. CNN.com.

3.7 Membership in Research Centres and Professional Societies

Quebec Centre for Biodiversity Science (QCBS)
Groupe de Recherche Interuniversitaire en Limnologie et en Environnement Aquatique (GRIL; FQRNT – Programme regroupements stratégique)
Association for the Sciences of Limnology and Oceanography (ASLO)
Canadian Society for Ecology and Evolution (CSEE)
Ecological Society of America (ESA)
International Society of Limnology (SIL)
Réseau Aquaculture Québec (2007-2015; FQRNT – Programme regroupements stratégique)

4 Teaching and Graduate Student Supervision

4.1 Courses Taught at McGill

Course	Semester	Students	Role	Contribution	
BIOL395	Quantitative Biol. Seminar	Fall 2023	35	Coordinator	75%
BIOL395	Quantitative Biol. Seminar	Fall 2021	37	Instructor	10%
BIOL432	Limnology	Fall 2021	29	Instructor	34%
BIOL395	Quantitative Biol. Seminar	Fall 2020	74	Instructor	10%
BIOL432	Limnology	Fall 2019	24	Coordinator & Instructor	100%
BIOL432	Limnology	Fall 2018	32	Instructor	50%
BIOL215	Ecology & Evolution	Fall 2018	165	Instructor	25%
BIOL432	Limnology	Fall 2017	24	Instructor	50%
BIOL432	Limnology	Fall 2016	28	Instructor	50%
BIOL432	Limnology	Fall 2015	28	Instructor	50%
BIOL308	Ecological Dynamics	Fall 2015	92	Coordinator & Instructor	100%
BIOL432	Limnology	Fall 2014	28	Coordinator & Instructor	80%
BIOL308	Ecological Dynamics	Fall 2014	92	Coordinator & Instructor	50%
BIOL432	Limnology	Fall 2013	25	Instructor	50%
BIOL308	Ecological Dynamics	Fall 2013	69	Coordinator & Instructor	50%
BIOL206	Methods in Biology	Fall 2013	160	Instructor	16%
BIOL432	Limnology	Fall 2012	24	Coordinator & Instructor	100%
BIOL308	Ecological Dynamics	Fall 2012	86	Coordinator & Instructor	50%
BIOL206	Methods in Biology	Fall 2012	145	Instructor	16%
BIOL432	Limnology	Fall 2011	30	Coordinator & Instructor	50%
BIOL395	Quantitative Biol. Seminar	Fall 2011	3	Instructor	10%
BIOL308	Ecological Dynamics	Fall 2011	95	Coordinator & Instructor	50%
BIOL206	Methods in Biology	Fall 2011	150	Instructor	16%
BIOL305	Animal Diversity	Winter 2010	85	Instructor	25%
BIOL499	Honours Seminar in Biology	2009/2010	9	Coordinator & Instructor	100%
BIOL432	Limnology	Fall 2009	18	Coordinator & Instructor	100%
BIOL308	Ecological Dynamics	Fall 2009	81	Coordinator & Instructor	50%
BIOL499	Honours Seminar in Biology	2008/2009	11	Coordinator & Instructor	100%
BIOL432	Limnology	Fall 2008	32	Coordinator & Instructor	67%
BIOL308	Ecological Dynamics	Fall 2008	58	Coordinator & Instructor	50%
BIOL499	Honours Seminar in Biology	2007/2008	8	Coordinator & Instructor	100%
BIOL432	Limnology	Fall 2007	12	Coordinator & Instructor	50%
BIOL331	Ecology Field Course	Fall 2007	13	Instructor	33%
BIOL308	Ecological Dynamics	Fall 2007	83	Coordinator & Instructor	50%
BIOL571	Experimental Ecol. & Evol.	Winter 2007	8	Instructor	33%
BIOL499	Honours Seminar in Biology	2006/2007	18	Coordinator & Instructor	100%
BIOL432	Limnology	Fall 2006	16	Coordinator & Instructor	50%
BIOL331	Ecology Field Course	Fall 2006	16	Instructor	25%
BIOL308	Ecological Dynamics	Fall 2006	92	Coordinator & Instructor	50%

BIOL499	Honours Seminar in Biology	2005/2006	13	Coordinator & Instructor	100%
BIOL432	Limnology	Fall 2005	29	Instructor	50%
BIOL308	Ecological Dynamics	Fall 2005	57	Coordinator & Instructor	50%
BIOL571	Experimental Ecol. & Evol.	Winter 2005	7	Instructor	33%
BIOL331	Ecology Field Course	Fall 2004	19	Instructor	25%
BIOL308	Ecological Dynamics	Fall 2004	13	Instructor	50%

Honours Program & Independent Studies

2005-2010 Coordinator of the Undergraduate Honours Program and Undergraduate Independent Studies Research Program of the Department of Biology

Guest Lecturer

BIOL510 Advances in Community Ecology (Fall 2008, 2007, 2006, 2005; 1 lecture each)
 BIOL534 Theoretical Ecology (Fall 2006; 1 lecture)

4.2 Teaching Experience Prior to McGill University

University of Potsdam, Germany

Applied Mathematics and Statistics for Ecologists
 (Winter 2003/2004, 2002/2003 and 2001/2002; 100%)

Theoretical Ecology (Summer 2003 and Summer 2002; 25%)

Computer Simulations in Ecology (Computer Lab)
 (Winter 2003/2004, 2002/2003 and 2001/2002; 50%)

Cornell University, Ithaca, NY, USA

Limnology – The Ecology of Lakes (Fall 2000; 50%)

4.3 Undergraduate Student Supervision (Independent Research Projects)

- 2020-21 Libby Rothberg (Honours Research, ENVR 495). *The degree of entanglement on nutrient driven instability: a Daphnia-algae gradient experiment.*
- 2016 Rachael Ryan (NSERC Undergraduate Student Research Award). *Assessing health impact of livestock grazing on two ungulate species in India.*
- 2016 Jonathan Fischer-Rush (Independent Studies, BIOL413, 1 credit). *Bottom-up vs. top-down effects in published food web studies.*
- 2015 Carine Chuhong Zheng (Honours thesis in Biology, BIOL479, 9 credits). *Does species diversity protect against parasites? An experimental test with Daphnia species and Metschnikowia.*
- 2015 Katherine Hindson (Honours thesis in Quantitative Biology, BIOL468, 6 credits). *Multivariate trait evolution in nutrient limited phytoplankton.*
- 2015 Katherine Hindson (NSERC Undergraduate Student Research Award). *Modelling the evolutionary adaptation of phytoplankton to resource limitation.*

- 2014 Egor Katkov (Independent Studies, COMP401, 3 credits). *The distribution and spread of Gyrodactylus ectoparasites on guppy host individuals.*
- 2014 Egor Katkov (Independent Studies, BIOL413, 1 credit). *The aquatic carbon cycle and its response to anthropogenic CO₂ emissions.*
- 2014 Renaud Dufour (Independent Studies, BIOL468, 6 credits). *Effects of Gyrodactylus turnbulli kairomones on guppy life history traits: Morphology.*
- 2014 Chad Serels (Independent Studies, BIOL468, 6 credits). *Effects of Gyrodactylus turnbulli kairomones on guppy life history traits: Resistance and tolerance.*
- 2013 Catherine Turner (NSERC Undergraduate Student Research Award). *Ecology and evolution of a parasite-host relationship in the field.*
- 2012-2013 Piumi Abeynayakage (Honours thesis in Biology, BIOL479, 9 credits; co-supervised with M. Cristescu). *How genotypic richness influences evolutionary change following copper contamination in Daphnia pulex.*
- 2012-2013 Lisa Chen (Independent Studies, BIOL377, 6 credits). *Evolution of female mate preferences under divergent selection in natural Trinidadian guppy populations.*
- 2012 Christianne Aikins (Independent Studies, BIOL468, 6 credits). *Behavioural responses of parasitized vs. non-parasitized guppies to predation.*
- 2012 Anna Luz (Independent Studies, BIOL468, 6 credits). *Do parasites produce kairomones that affect guppy resistance and life history?*
- 2009-2010 Issei Massunaga (Independent Studies, BIOL468, 6 credits). *Phenotypic change and the stability of community model systems.*
- 2009 Catherine Brisson (Independent Studies, BIOL413, 1 credit). *Bio-manipulation – hit or myth? What has happened since DeMelo’s assessment?*
- 2008-2009 Ekaterina Yakushina (Independent Studies, BIOL468, 6 credits). *The relationship between functional and numerical response: experimental evidence.*
- 2008-2009 Sean Duffy (Independent Studies, BIOL468, 6 credits). *Tolerance to cyanotoxins: intraspecific variability in planktonic rotifers.*
- 2008 David Grier (Independent Studies, BIOL413, 1 credit). *Eco-evolutionary dynamics – a novel concept or the emperor’s new clothes?*
- 2008 Katherine Huebner (Independent Studies, BIO413, 1 credit). *How revisions in taxonomy affect the interpretation of specimen nomenclature in scientific field data.*
- 2007-2008 Matthew Feeley (Independent Studies, BIOL468, 6 credits). *Asplanchna-induced spine formation in two clones of Brachionus calyciflorus.*
- 2007-2008 Xiao Xiao (Honours thesis in Biology, BIOL479, 9 credits). *The effect of intra- and interspecific competition on the dispersal rates of two rotifer species.*
- 2007 Xiao Xiao (Faculty of Science Undergraduate Student Research Award). *Modelling the coexistence of competitors on a single resource.*
- 2007 Kosmas Papiliadis (NSERC Undergraduate Student Research Award). *Competition and coexistence of two rotifer species.*

- 2006-2007 Keren Tang (Independent Studies, BIOL471, 6 credits). *Community interaction with exotic species – facilitation or resistance?*
- 2006 Dian Luo (Independent Studies, BIOL377, 3 credits). *Differential effects of species and genetic diversity on community dynamics.*
- 2005-2006 Emily Redmond (Independent Studies, BIOL471, 6 credits). *Allozyme analysis: its use in lab experiments with *B. calyciflorus* as an effective method for identification of different strains.*
- 2005-2006 Katherine Priestley (Independent Studies, BIOL471, 6 credits). *Competition and Coexistence between *Brachionus calyciflorus* and *Brachionus rubens*, on a single food source.*
- 2005 Juliette Yip (Independent Studies, BIOL478, 3 credits). *Nitrate uptake kinetics of experimental *Chlamydomonas* populations.*
- 2004-2005 Gregory Kramer (Independent Studies, BIOL471, 6 credits). *Population parameters of *Brachionus calyciflorus* and *Chlamydomonas reinhardtii*.*

4.4 Graduate Student Supervision

Current

(2 M.Sc.)

- 2023- Daniel Gedig (M.Sc.) *Methane-mediated effects in freshwater plankton communities.* McGill, Department of Biology.
- 2023- Sabrina Therrien (M.Sc., co-supervised with Dr. Graham Bell) *Transitivity of competitive hierarchies among phytoplankton species.* McGill, Department of Biology.

Completed

(12 Ph.D., 5 M.Sc.)

- 2016-2022 Marie-Pier Hébert (Ph.D., co-supervised with Dr. Beatrix Beisner, U. du Québec à Montréal). *Freshwater ecosystems facing climate and land-use changes: Implications for basal resources and planktonic food webs.* McGill, Department of Biology.
- 2016-2022 Naíla Barbosa da Costa (Ph.D. at U. de Montréal, co-supervised with Dr. Jesse Shapiro, U. de Montréal/McGill University) *Eco-evolutionary dynamics of microbial communities in disturbed freshwater ecosystems.*
- 2016-2022 Egor Katkov (Ph.D.) *The effect of rising carbon dioxide on communities of freshwater phytoplankton.* McGill, Department of Biology.
- 2019-2021 Kaushar Kagzi (M.Sc., co-supervised with Dr. Melania Cristescu). *Applicability of eDNA and eRNA in assessing species and community composition across an acid-base gradient in freshwater environments.* McGill, Department of Biology.
- 2019-2021 Allegra Pearce (M.Sc., co-supervised with Dr. Andrew Hendry). *The applications of using ordinal rank analyses to answer ecological and evolutionary questions in natural systems.* McGill, Department of Biology.

- 2012-2018 Christina Tadiri (Ph.D., co-supervised with Dr. Marilyn Scott). *Epidemic dynamics in metapopulations: The role of heterogeneity in the dissemination of disease*. McGill, Department of Biology.
- 2016-2018 Shaun Turney (Ph.D., co-supervised – since 2016 – with Dr. Christopher Buddle). *Determinants of trophic structure in ecological communities*. McGill, Department of Natural Resource Sciences.
- 2012-2017 Sébastien Portalier (Ph.D., co-supervised with Dr. Michel Loreau, Dr. Mehdi Cherif). *The effects of physical factors on the structure of communities*. McGill, Department of Biology.
- 2010-2016 Monica Granados (Ph.D.). *Interaction strength and the consequences for non-native omnivory*. McGill, Department of Biology.
- 2009-2015 Michael Pedruski (Ph.D., NSERC PGS-D scholarship; co-supervised with Dr. Andrew Gonzalez). *The ecological niche: historical, modelling, and experimental approaches to one of ecology's central concepts*. McGill, Department of Biology.
- 2008-2015 Felipe Pérez-Jvostov (Ph.D., CONACYT fellowship; co-supervised with Dr. Marilyn Scott). *Evolutionary ecology of host-parasite interactions in the Trinidadian guppy (*Poecilia reticulata*)*. McGill, Department of Parasitology.
- 2008-2015 Caolan Kovach-Orr (Ph.D.). *Mechanistic concepts of predator-prey interactions and their effects on community dynamics*. McGill, Department of Biology.
- 2008-2014 Felipe Dargent (Ph.D., NSERC Vanier and McGill Tomlinson scholarship, co-supervised with Dr. Marilyn Scott). *The wild side: Assessing evolutionary ecology of defence against parasites in nature*. McGill, Department of Biology.
- 2008-2013 Etienne Low-Décarie (Ph.D., NSERC PGS-D scholarship; co-supervised with Dr. Graham Bell). *Ecological and evolutionary response of phytoplankton to rising CO₂*. McGill, Department of Biology.
- 2009-2012 Sean Duffy (M.Sc., co-supervised with government scientist Dr. Christopher McKindsey, Dept. of Fisheries and Oceans). *Persistence in intraguild predation food web: possible solutions to a paradox*. McGill, Department of Biology.
- 2009-2011 Lari Delaire (M.Sc., co-supervised with Dr. Andrew Hendry). *Predation, parasitism and colour in natural guppy populations*. McGill, Department of Biology.
- 2005-2007 Charalampos Mavromatis (M.Sc., co-supervised with Dr. Claire Infante-Rivard). *Modeling large scale epidemics of meningococcal disease in Europe*. McGill, Department of Biology.
- 2004-2005 Thomas Massie (Diploma, co-supervised with Dr. Ursula Gaedke). *Experimental validation of a simple bottom-up model for phytoplankton blooms* (in German). University of Potsdam.

Visiting students

- 2016 Alicia Walter (M.Sc. candidate, Université de Rennes, France). 6-month research internship.

- 2008 Nathalie Rayssac (Ph.D. candidate, Université du Québec à Rimouski). Visit supported by a scholarship from RAQ (Réseau Aquaculture Québec).
- 2007 Thomas Massie (Ph.D. candidate, University of Potsdam). Visit supported by a scholarship from DFG (German Science Foundation).

4.5 Postdoctoral Fellows

- 2021-2023 Allison Mindy Roth (Ph.D., University of Oxford, UK), co-supervisors Dr. Gregory-Eaves and Dr. Andrew Hendry, funded by GRIL (Groupe de recherche interuniversitaire en limnologie et en environnement aquatique) Postdoctoral Fellowship.
- 2022-2023 Egor Katkov (Ph.D., McGill University, Montreal), co-supervisors Dr. Andrew Gonzalez and Dr. Melania Cristescu, funded by CFREF “Food from Thought”.
- 2020-2021 Christina Tadiri (Ph.D., McGill University, Montreal), co-supervisors Dr. Andrew Gonzalez and Dr. Melania Cristescu, funded by CFREF “Food from Thought”.
- 2012-2014 Romana Limberger (Ph.D., Paris Lodron University Salzburg, Austria), funded by Austrian Science Foundation fellowship. Current position: EAWAG, Switzerland.
- 2009-2012 Mehdi Cherif (Ph.D., Pierre et Marie Curie University, Paris, France). Current position: Associate professor, University of Umeå, Sweden.
- 2008-2010 Alison Derry (Ph.D., Queen’s University), NSERC 2-year Postdoctoral Fellowship. Current position: Associate professor, Université du Québec à Montréal

5 Administrative and other contributions

5.1 Departmental Contributions (Biology)

- 2016- Chair, Department of Biology.

Departmental Committees

- 2018-2019 Search Committee “Plant Ecology”, Department of Biology and McGill School of the Environment.
- 2017-2020 Curriculum Revision Task Force, Department of Biology.
- 2014- Reappointment, Promotion and Tenure Committee, Department of Biology.
- 2017-2018 Search Committee “Eco-evolutionary Informatics” resulting in the hiring of assistant professor Laura Pollock, Department of Biology.
- 2017-2018 Ad hoc Search Committee “Behavioural Ecology” resulting in the hiring of assistant professor Mélanie Guigueno, Department of Biology.
- 2017 Ad hoc Search Committee “Quantitative Cell Biology” resulting in the hiring of assistant professor Abigail Gerhold, Department of Biology.
- 2016-2017 Search Committee “Quantitative Cell Biology” resulting in the hiring of assistant professor Arnold Hayer, Department of Biology.
- 2016-2017 Search Committee “Evolutionary Ecology” resulting in the hiring of assistant professor Jennifer Sunday, Department of Biology.

- 2013-2016 Graduate Training Committee, Department of Biology.
- 2011-2014 Green Committee, Department of Biology.
- 2009-2010 Coordinator of the CEEB (Conservation, Ecology, Evolution, Behaviour) faculty group within the Department of Biology (\approx 20 faculty).
- 2007-2010 Seminar Committee, Department of Biology.
- 2008-2009 Curriculum Committee, Department of Biology (including: delegate to the Faculty Committee of the Faculty of Science).
- 2008 Ad hoc member of committee for Hector Guzman's application for Adjunct Professor Status, Department of Biology.
- 2007 Ad hoc member of committee for Claire de Mazancourt's application for Associate Status, Department of Biology.
- 2004-2007 Graduate Training Committee, Department of Biology.
- 2004 Faculty Search Committee "Theoretical Ecology."

Thesis Examiner

- 2021 Tianna Peller, Chair, Ph.D. defense.
- 2016 Jimmy Peng, Chair, Ph.D. defense.
- 2016 Vincent Fugère. Member, Ph.D. defense.
- 2016 Andrea Morden. External examiner, M.Sc. thesis.
- 2015 Pedram Samani. Internal Examiner, Ph.D. thesis.
- 2015 Anil Patel. Internal Examiner, Ph.D. thesis. Dept. of Bioresource Engineering.
- 2015 Faiyaz Al Zamal. External Member, Ph.D. defense. McGill, Computer Science.
- 2014 Zofia Taranu. Internal Examiner, Ph.D. thesis.
- 2013 Helen Jensen. Acting Chair, Ph.D. defense.
- 2013 Sarah Loboda. External examiner, M.Sc. thesis.
- 2013 Rowshyra Castaneda. External examiner, M.Sc. thesis.
- 2013 Anais Lacoursiere-Roussel. Internal Examiner, Ph.D. thesis.
- 2012 Lisa Jones. Member, Ph.D. defense.
- 2012 Cristián Correa-Guzmán. Examiner, Ph.D. thesis.
- 2012 Alexander Dececchi. Acting Chair, Ph.D. defense.
- 2012 Matthew Osmond. Examiner, M.Sc. thesis.
- 2012 Ayaz Hyder. Internal Examiner, Ph.D. thesis.
- 2011 Lisandre Solomon. External Examiner, M.Sc. thesis, U. du Québec à Rimouski.
- 2010 Pedram Samani. Internal Examiner, M.Sc. thesis.
- 2010 Xavier Thibert-Plante. Member, Ph.D. defense.
- 2010 Jessica Ward. Member, Ph.D. defense.
- 2010 Tarik Gouhier. Internal Examiner, Ph.D. thesis.
- 2010 Åsa Kestrup. Member, Ph.D. defense.
- 2009 Richard Vogt. External Examiner, Ph.D. defense, U. du Québec à Montréal.

2009	Patrick Leighton. Acting Chair, Ph.D. defense.
2009	Sarah-Ann Quesnel. Internal Examiner, M.Sc. thesis.
2009	Oscar Puebla. Member, Ph.D. defense.
2009	Joseph DiBattista. Internal Examiner, Ph.D. thesis.
2009	Ville Fridman. External Examiner, Ph.D. University of Helsinki, Finland
2008	David Browne. Member, Ph.D. defense.
2008	Henri Valles-Rodriguez. Member, Ph.D. defense.
2007	Kyle Simpson. Internal Examiner, M.Sc. thesis.
2006	Gabriel Guimond-Perron. Internal Examiner, M.Sc. thesis.
2005	Geneviève Morinville. Internal Examiner, Ph.D. thesis.
2005	David Vasseur. Internal Examiner, Ph.D. thesis.
2005	Rowan Barrett. Internal Examiner, M.Sc. thesis.
2004	Alexander Tewfik. Internal Examiner, Ph.D. thesis.
2004	Amy Schwartz. Internal Examiner, M.Sc. thesis.

Ph.D. Qualifying Exams

Brendon McGuinness (2020), Kirsten Crandall (2019), Eric Guerra-Grenier (2019), Paul MacKeigan (2019), Daniel Reyes (2019), Geneviève D'Avignon (2018), Léa Blondel (2016), Maximilian Kramer-Drauberg (2016, Chair), Jonathas Pereira (2016, Chair), Suncica Avlijas (2016, Chair), Shaun Turney (2016), Andrew Sellers (2015), Ridouan Bani (2015, Chair), Tiffany Chin (2015, Chair), Alessandra Loria (2015), Tim Thurman (2015), José Avila Cervantes (2015, Chair), Sofia Carvajal Endara (2014), Magnus Bein (2014), Eraclis Araclides (2014), Dustin Raab (2014, Chair), Logan Smith (2014, Chair), Genelle Harrison (2014, Chair), Christina Tadiri (2014), Katie Millette (2014), Catalina Gomez (2014), Sarah Baldwin (2014, Chair), Liangliang Kong (2014, Chair), Kristine Bernard (2013, Chair), Javier Mateo-Vega (2013, Chair), Amanda Winegardner (2013), Pedram Samani (2013), Josie Iacarella (2012), Patrick Thompson (2012), Sébastien Portalier (2011), Edward Wong (2011), Monica Granados (2011), Etienne Low-Décarie (2011), Felipe Pérez-Jvostov (2010), Corey Chivers (2010), Ian Hatton (2010), Michael Pedruski (2010), Caolan Kovach-Orr (2009), Diana Sharpe (2009), Shawn Leroux (2007), Pradeep Pillai (2007), Jonathan Whitely (2007), Tarik Gouhier (2006), Jesse Vermaire (2006), David Delaney (2007, Chair), Erika Crispo (2007, Chair), Lisa Jones (2006, Chair), Xavier Thibert-Plante (2006, Chair), Joseph DiBattista (2006, Chair), Jessica Ward (2006, Chair), Amy Schwartz (2005), Jan-Michael Kugler (2005, Chair), Lara Cuschieri (2005, Chair), Oscar Puebla (2005, Chair), Scott Smith (2005, Chair).

Student Supervisory Committees

Ph.D. Current: Philippe Le Noac'h (UQAM), Kirsten Crandall, Eric Guerra-Grenier.
Past: Léa Blondel, Alessandra Loria, Katie Millette, Sofia Carvajal Endara, Tim Thurman, Lidia della Venezia, Magnus Bein, Amanda Winegardner, Josie Iacarella, Patrick Thompson, Eric Pederson, Anil Patel (Bioresource Engineering), Justin Marleau, Corey Chivers, Ian Hatton, Felexce Ngwa

(Bioresource Engineering), Aline Fouard, Jonathan Whiteley, Philippe Doucet-Beaupré, Amy Schwartz, Graham Peers, David O'Brien.

M.Sc. Current: Jori Griffith, Kari Hollett.
Past: Robert Hechler, Charles Bazerghi, Russell Milne, Jennifer Barrow, Jamie Grimm, James Bull, Julien Massé-Jodoin, Colin McDonnell, Emilia Cvetanovska, Geneviève Thibodeau (Université du Québec à Montréal), Suncica Avlijas, Jessica Middleton, Tamara Gregg, Chase Moser, Marie-Hélène Greffard, Stefanie Kulhanek, Ada Sijercic, Pradeep Pillai, Swanne Gordon.

Departmental Retreat

2017-2021 Organization of the Biology Departmental Annual Retreat (December), Faculty Club, McGill University (did not take place in 2020).

Organization of the Annual Retreat of the Ecology/Evolutionary Biology Group of the Department of Biology at Mont St-Hilaire.

2016 Lead organizer.
2015 Co-organizer (with Dr. Hendry).
2014 Lead organizer (with Dr. Hendry).
2013 Co-organizer (with Dr. Hendry).
2009 Co-organizer (with Dr. Millien).
2007 Lead organizer.
2006 Co-organizer (with Dr. Hendry).
2005 Co-organizer (with Dr. Hendry).

5.2 University Contributions (McGill)

2019 Pro-Dean. Ph.D. defense of Juntian Qu, Department of Mechanical Engineering, McGill University.

2017-2021 Chair, Committee "Conservation Allocation of the Liber Ero Chair Endowment", McGill University.

2016- Member, Task Force and "Comité de Pilotage" for the Redevelopment of the Stewart Building, McGill University.

2016-2019 Member of the Academic Senate of McGill University.

2016-2018 Member of the Senate Pool for University Tenure Committees (UTC), McGill University.
2016/17: UTC member, Faculty of Medicine
2015/16: UTC member, Faculty of Agricultural and Environmental Sciences

2016 Pro-Dean. Ph.D. defense of Jean-François Mercier, Department of Economics, McGill University.

2013-2016 Fee Advisory Committee of the Deputy Provost. McGill University.

2011-2017 Director, Gault Nature Reserve, McGill University, Mont Saint-Hilaire, Canada.

- Director, Ecology Field Station at the Wilder and Helen Penfield Nature Conservancy, McGill University, Austin, Quebec, Canada.
- 2011-2017 Member of the Board (Conseil Administrative) of the Nature Centre, Mont-Saint-Hilaire (representing McGill University).
- 2011-2017 Senate Committee on Physical Development. McGill University.
- 2008-2009 Faculty of Science Scholarships Committee (departmental representative).
- 2008 The lake as a microcosm or Using the littlest animals to answer the biggest questions. McGill STARS Lecture (Science Talks About Research for Staff).
- 2008 Pro-Dean. Ph.D. defense of Nader Ghasemlou, Montreal General Hospital, Faculty of Medicine.
- 2008 Pro-Dean. Ph.D. defense of Henry Cheang, School of Communication Sciences and Disorders, Faculty of Medicine.
- 2006 Presentation in the Dean's of Science "Soup and Science" series to an undergraduate audience.
- 2004 Ad hoc member of Review Committee to evaluate the services of the Blacker-Wood Library of Biology.

5.3 External Contributions

Organization of Scientific Meetings

- 2015 Co-organizer of CIEE (Canadian Institute of Ecology and Evolution) working group "Adaptation versus maladaptation in response to environmental change." 4 organizers, 25 participants; 3 meetings to take place in 2015-16.
- 2014 Member of the Local Organizing Committee, "Genomes to Biomes", Joint Meeting of the Canadian Society of Ecology and Evolution (CSEE), Canadian Society of Zoology (CSZ) and the Society of Canadian Limnologists (SCL), May 25-29, in Montreal (>900 participants).
- 2009 Invited Special Session organizer: "Evolution of Rotifers." XII International Rotifer Symposium, Berlin, Germany.
- 2009 Lead Organizer of the Topical Session "Predator-prey interactions - linking mechanism to community dynamics" at the ASLO (American Society of Limnology and Oceanography) conference, Nice, France.
- 2007 Lead Organizer of the Special Session "Ecology and genetics of clonal organisms" at the SIL (International Society of Limnology) conference, Montreal, Quebec, Canada.
- 2006 Lead Organizer of the Topical Session "The role of genetic diversity in changing environments" at the ASLO (American Society of Limnology and Oceanography) conference, Victoria, BC, Canada.
- 2005 Co-organizer of the Special Symposium "Evolution on ecological time scales" at the ESA/INTECOL (Ecological Society of America/International Association for Ecology) conference, Montreal, Quebec, Canada.

External Evaluator

- 2021 Reviewer for promotion to full professor, Queen's University, ON, Canada.
- 2020 Major in Quantitative Biology Program, University of Toronto.
- 2019 NSERC, Herzberg Gold Medal.
- 2019 Expert Panel, CFI-JELF proposal.
- 2018 External Evaluator (Cyclical Review), Department of Biology, University of Toronto Mississauga
- 2017 Reviewer for promotion to tenure, Northeastern University, MA, U.S.A.
- 2016 Reviewer for NSERC Steacie Memorial Fellowship application.
- 2013 Co-examiner, Ph.D. thesis Claus Fischer, University of Oldenburg, Germany.
- 2012 Reviewer for promotion to tenure, Memorial University, Newfoundland, Canada.
- 2012 Reviewer for promotion to tenure, Queen's University, Kingston, ON, Canada.
- 2012 Evaluator for MacArthur Fellowship nomination.
- 2012 Co-examiner, M.Sc. thesis Kerstin Marquardt, University of Potsdam, Germany.
- 2012 Reviewer for venia docendi (habilitation), Paris Lodron University Salzburg, Austria.
- 2012 Reviewer for promotion to Adjunct Professor, ETH Zürich, Switzerland.
- 2011 Invited international expert and external advisor: Workshop to prepare a focal network program of the German Science Foundation (DFG), University of Potsdam, Germany.
- 2010 Comparative review of candidates for professorship in Aquatic Ecology, Ludwig-Maximilians University, Munich, Germany.
- 2010 Reviewer for promotion to tenure, University of Massachusetts, U.S.A.
- 2010 Reviewer for promotion to Associate Scientist, Josephine Bay Paul Center at the Marine Biological Laboratory, Woods Hole, USA.
- 2009 External examiner. Richard Vogt, Ph.D. defense, Université du Québec à Montréal, Canada.
- 2009 Reviewer for renewal of faculty appointment at Queen's University, Kingston, Ontario, Canada.
- 2009 External examiner. Ville Fridman, Ph.D., University of Helsinki, Finland.
- 2008 External examiner. Melanie Hartwich, Diploma Thesis, University of Potsdam, Germany.
- 2008 External examiner. Melanie Hartwich, Diploma Thesis, University of Potsdam, Germany.
- 2007 Reviewer for promotion to Senior Research Associate, Cornell University, USA.
- 2007 Reviewer for short-listed application package for Full Professor (Limnology), Technical University Dresden, Germany.

Other Contributions

- 2016-2021 Invited attendee at the Canadian Council of University Biology Chairs (CCUBC), annual event.
- 2009 Invited guest speaker and “instructor for a day” at the Munich Graduate School for Evolution, Ecology and Systematics, Ludwig-Maximilian University, Munich, Germany.
- 2006 Birth, death, and extinction in a jar - Understanding the population dynamics of lake plankton. Invited speaker for McGill Outreach at Westmount Highschool, grade 10 class.