

Gwyneth Anne MacMillan, Ph.D.



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 Languages | English: native, French: fluent

Current Position

2019 - 2021 Postdoctoral Researcher, Department of Natural Resource Sciences, McGill University.
 Supervisor: Dr. Murray Humphries, Director of CINE Centre for Indigenous Peoples' Nutrition and Environment. Project: *WECLIFS, Wildlife, Environment Change, and Local Indigenous Food Systems*

- (+) Postdoctoral Fellow, FRQNT Fonds de recherche du Québec Nature et technologies
- (+) Quebec Centre for Biodiversity Science (QCBS/CSBQ)
- (+) Board Member of APECS Canada (Association for Polar Early Career Scientists)

Doctoral Thesis

2013 - 2018: Doctorate (Ph.D.) in Biological Sciences, University of Montreal, Quebec, Canada.
 W. Garfield Weston Award Recipient for Northern Research, Supervisors: Dr. Marc Amyot: Canada Research Chair in Global Change Ecotoxicology and Dr. John Chételat (Environment Canada)

Thesis Title: Hunting for trace metals in the rapidly changing North: limnological, ecological, and collaborative approaches. *À la chasse aux métaux traces dans le Nord canadien en évolution rapide: approches limnologiques, écologiques et collaboratives.*

- (+) Centre d'études nordiques/Centre for Northern Studies (CEN)
- (+) CREATE Mine of Knowledge Interdisciplinary Training Program
- (+) Groupe de recherche interuniversitaire en limnologie et en environnement aquatique (GRIL)

Education

- 2012 Graduate Diploma (D.E.S.S.) in Environment and Sustainable Development: Biogeochemistry, Faculty of Arts and Science, University of Montreal, Montreal, QC, Canada (GPA 4.1/4.3)
- 2008 Certificate in French as a Second Language, Intermediate-Advanced Level, Faculty of Arts, University Laval, Québec, QC, Canada, (GPA 3.95/4.33)
- 2005 Bachelor of Science, (B.Sc.) Biology and Anthropology, Honours with distinction, Faculty of Science, University of Western Ontario, London, ON, Canada, (GPA 3.9/4.0)

Research Experience

- 2019 - 2020 Wildlife Biologist with the Cree First Nation of Waswanipi (QC), Project Management and Community-Driven Research on Caribou, American Marten and Boreal Ecosystems
- 2017 - 2019 Community-based Monitoring Project: Water Quality and Rare Earth Elements: Science Land Camp with Inuit Youth on the George River, Kangiqsualujjuaq (QC)
- 2012 - 2015 Doctoral fieldwork, Sub-Arctic and Arctic Regions: Kuujuarapik-Whapmagoostui (QC), Iqaluit (NU), Resolute Bay (NU), and Inuvik (NWT)
- 2010 - 2011 Research Assistant, Project AOM (*Activités d'observations en mer*), Group for Research and Education on Marine Mammals (GREMM), Tadoussac, QC
- 2010 Research Assistant, Green Sea Turtle Project, Charles Darwin Foundation and Galápagos National Park, Bahia Barahona, Isla Isabela, Galápagos Islands

Scholarships & Grants (Selected)

- 2019 - Postdoctoral Fellowship, Fonds de recherche du Québec Nature et technologies (45 000\$/yr)
- 2019 - W. Garfield Weston Postdoctoral Fellowship (Declined)
- 2017 - W. Garfield Weston Award for Northern Research - Doctoral (25 000\$/yr)
- 2017 - W. Garfield Weston Extended Stay Funding for community outreach and education (~7000\$)
- 2014 - Alexander Graham Bell Canada Graduate Doctoral Scholarship (CGS) (35 000\$/yr.)
- 2014 - Ph.D. Scholarship, Fonds de recherche du Québec Nature et technologies (FRQNT) (Declined)
- 2013 - Richard J. Schmeelk Canada Fellowship (20 000\$/yr.)
- 2013 - M.Sc Scholarship, Fonds de recherche du Québec (FRQNT) (15 000 \$/yr.)
- 2015 - Northern Scientific Training Program, Indigenous and Northern Affairs Canada (~3000\$/yr.)

Awards (Selected)

- 2018 - Poster Award, Science Day for the Institut nordique du Québec (INQ)
- 2017 - Best Poster Presentation, Arctic Change 2017 Conference, Quebec City, Canada
- 2017 - Winner of the "My Northern Project" contest (INQ), Best presentation award at the Arctic Circle Assembly, Reykjavik, Iceland
- 2013 - Award for Excellence from the Chapitre Saint-Laurent - Master's Level, Montréal, Canada
- 2012 - Award for Popular Science Writing, Fonds Famille Michel Bergeron Contest, Montréal, Canada
- 2012 - Award for Excellence in Popular Science Writing, Revue DIRE the Graduate Student's Journal, University of Montreal, Canada

Teaching & Mentorship

Department of Biological Sciences, University of Montreal

- 2017 - 2018 Lecturer for Biology 3893 (Ecotoxicology), Responsible for ¼ of term
- 2015 - 2016 Head Teaching Assistant for Biology 3831 (Oceanography)
- 2012 - 2014 Teaching Assistant, Biology 3831 (Oceanography), Problem-based Learning
- 2014 - 2016 Teaching Assistant, Biology 3721 (Microbial Ecology), Problem-based Learning
- 2013 Teaching Assistant, Biology 1204 (Genetics)

Undergraduate Research Project Supervision: Alexandre Arscott-Gavin (2018), Eliane Grant (2017), Alizée Girard (2016), Geneviève Blanchet (2015), Shirley Atoche Garcia (2014), Fei Tao Zhou (2013)

Courses

- 2019 - Creative Facilitation Workshop, Partners for Youth Empowerment, Montreal, QC
- 2019 - Introduction to Storytelling for Scientists (Aerin Jacobs, Y2Y Conservation Initiative)
- 2018 - Inuktitut Language Class (Level 1), Institut national des langues, (INALCO), Paris, France
- 2017 - Massive Online Open Course, Northern Quebec: Issues, Spaces and Cultures, Laval University
- 2016 - Science Outside the Lab (SOTL) North Program, an immersive course in Canadian science policy
- 2015 - Grant Writing Workshop and Short Course on Project Management, University of Montreal
- 2014 - Field Course in Metal Biogeochemistry, Université de Montréal
- 2014 - Gather-Learn Winter Field School, Whapmagoostui-Kuujuarapik, University of Manitoba

Conference Organization

- 2015 - 2017 Cofounder of two workshops "*Intercultural Workshops: Scientific Knowledge and Local Knowledge in Nordic Research*", University of Montreal (2016), McGill University (2017)
- 2014 Planning committee, Conference *Forum Environnement*, U. of Montreal
- 2014 Planning committee, Annual Symposium, Dept. of Biological Sciences, U. de Montréal

Outreach and Communication

- 2018 Presenter for the Arctic Sustainability Roundtable, G7 Research Summit, Montreal
- 2018 Finalist in the photo contest *La preuve par l'image*, ACFAS Association francophone pour le savoir, Montreal
- 2017 Publication of three blogs on northern research for *Espaces Autochtones*, Radio Canada
- 2015 - 2018 Cofounder of the 'Women in Science' journal club and the Diversity Committee, Dept. of Biological Sciences, U. de Montréal
- 2015 - 2017 Member of the Executive Committee of AÉCBUM, *Association des Étudiants Chercheurs en Biologie de l'Université de Montréal*
- 2013 - 2018 Volunteer for *Les Scientifines*, a not-for-profit which encourages young girls to participate in science fairs in Montreal
- 2014 Popular science article : '*L'Arctique, un puits toxique*'. Revue DIRE, Cycles supérieurs, Université de Montréal, 23(1).
- 2012 Popular science article « *La contamination des cours d'eau par un mélange de produits pharmaceutiques.*' Revue DIRE, Cycles supérieurs, Université de Montréal, 21(3): 28-32.

Other skills

- 2018 Wilderness First Responder with CPR (80h), Wilderness Medical Associates & Sirius Wilderness Medicine, Emergency First Aid CPR/AED level C, Canadian Red Cross
- 2014 Canadian Firearms Safety Course (CFSC), Possession and Acquisition License (PAL) and the Firearms Security Training (level 2) from Environment Canada
- 2015 Quebec Certificate of Qualification in Recreational Subaquatic Diving (FQAS)
- 2009 Ecological Diver and Advanced Adventurer, SSI (Scuba Schools International)
- 2009 Sea Kayak II, Quebec Canoe and Kayak Federation (FQCK)

Publications

Peer-reviewed articles

- 1) MacMillan, G. A., Falardeau, M., Girard, C., Dufour-Beauséjour, S., Lacombe-Bergeron, J., Menzies, A. K., & Henri, D. A. (2019). Highlighting the potential of peer-led workshops in training early-career researchers for conducting research with Indigenous communities. *FACETS*, 4(1), 275-292.
- 2) MacMillan, G. A., Clayden, M. G., Chételat, J., Richardson, M. C., Ponton, D. E., Perron, T., & Amyot, M. (2018). Environmental Drivers of Rare Earth Element Bioaccumulation in Freshwater Zooplankton. *Environmental science & technology*, 53(3), 1650-1660. (1 citation).
- 3) Gérin-Lajoie, J., Herrmann, T.M., MacMillan, G.A., Hébert-Houle, É., Monfette, M., Rowell, J.A., Anaviapik Soucie, T., Snowball, H., Townley, E., Lévesque, E. and Amyot, M. (2018). IMALIRIJIT: a community-based environmental monitoring program in the George River watershed, Nunavik, Canada. *Écoscience*, 1-19. (4 citations).
- 4) Chételat, J., Richardson, M. C., MacMillan, G. A., Amyot, M., & Poulain, A. J. (2017). Ratio of Methylmercury to Dissolved Organic Carbon in Water Explains Methylmercury Bioaccumulation Across a Latitudinal Gradient from North-Temperate to Arctic Lakes. *Environmental Science & Technology*, 52(1), 79-88. (8 citations).
- 5) MacMillan, G. A., Chételat, J., Heath, J., Mickpegak, R., & Amyot, M. (2017). Rare earth elements in freshwater, marine, and terrestrial ecosystems in the eastern Canadian Arctic. *Environmental Science: Processes & Impacts*, 19, 1336–1345. (26 citations).
- 6) Amyot, M., Clayden, M. G., MacMillan, G. A., Perron, T., & Arscott-Gauvin, A. (2017). Fate and Trophic Transfer of Rare Earth Elements in Temperate Lake Food Webs. *Environmental Science & Technology*, 51(11), 6009-6017. (22 citations).
- 7) MacMillan, G. A., Girard, C., Chételat, J., Laurion, I., & Amyot, M. (2015). High Methylmercury in Arctic and Subarctic Ponds is Related to Nutrient Levels in the Warming Eastern Canadian Arctic. *Environmental science & technology*, 49(13), 7743-7755. (33 citations).
- 8) Vonk, J. E., Tank, S. E., Bowden, W. B., Laurion, I., Vincent, W. F., Alekseychik, P., Amyot, M., Billet, M. F., Canário, J., Cory, R. M., Deshpande, B. N., Helbig, M., Jammot, M., Karlsson, J., Larouche, J., MacMillan, G., Rautio, M., Walter Anthony, K. M., and Wickland, K. P. (2015). Reviews and syntheses: Effects of permafrost thaw on Arctic aquatic ecosystems, *Biogeosciences*, 12, 7129–7167. (163 citations).

Research Reports (Selected)

Amyot, M., H. Snowball, E. Lévesque, J. Gérin-Lajoie, G. MacMillan, E. Grant, T. M. Herrmann, J. Franssen, J-P Dedieu. Imalirijit : Environmental community-based monitoring of the George River Watershed, Nunavik. Synopsis of Research Conducted under the 2017-2018 Northern Contaminants Program (NCP). Indigenous and Northern Affairs Canada (INAC). Ottawa, Canada. (Research Report)

Chételat, J., M. Richardson, H. Hintelmann, G. MacMillan, M. Amyot, D. Crump, J. Shirley, S. Lonsdale., D. Muir, G. Köck, P. Drevnick. A latitudinal investigation of ecosystem sensitivity to methylmercury bioaccumulation in Arctic fresh waters. Synopsis of Research Conducted under the 2014-2015 Northern Contaminants Program (NCP). Aboriginal Affairs and Northern Development Canada. Ottawa, Canada. (Research Report).

List of Presentations: Available upon Request