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## CONDENSED CURRICULUM VITAE

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### Ian B. Strachan, Ph.D.

**Current Position/Address:** Professor and Associate Head (Undergraduate)  
Department of Geography and Planning  
Queen's University  
Kingston, ON K7L 3N6

**Citizenship:** Canadian

### POSITIONS HELD

2022 – present	Professor, Dept. Geography and Planning, Queen's University
2023 – present	Associate Head (Undergraduate), Geog. & Plan., Queen's University
2023 – present	Adjunct Professor, Dept. Natural Resource Sciences, McGill University
2017 – present	Adjunct Professor, Dept. Geography and Environmental Management, University of Waterloo
2012 – 2021	Associate Dean (Graduate Education), Faculty of Agricultural and Environmental Sciences, McGill University
2007 – 2021	Associate Professor, Dept. of Natural Resource Sciences, McGill University
2003 – 2021	Associate Member, McGill School of Environment
2001 – 2021	Cross-appointment to the Dept. of Geography, McGill University
2015	Interim Dean, Faculty of Agricultural and Environmental Sciences and Interim Associate Vice-Principal (Macdonald Campus), McGill University
2009 – 2011	Graduate Program Director, Natural Resource Sciences, McGill University
2001 – 2006	Assistant Professor, Dept. of Natural Resource Sciences, McGill University
2000 – 2001	NSERC Post-Doctoral Visiting Fellow, Eastern Cereal and Oilseed Research Centre, Agriculture and Agri-Food Canada, Ottawa, Ontario

### AWARDS and NOMINATIONS

#### Research:

2008 Winner of the Graham K. Walker Award for Excellence in Agrometeorology / Forest Meteorology from the Canadian Society of Agricultural and Forest Meteorology

#### Teaching:

2025 Winner of the Julian Szeicz Award for Excellence in Teaching, Queen's University  
2019 Winner of the Macdonald Campus Award for Teaching Excellence, McGill University  
2020 Nominee for the Principal's Prize for Excellence in Teaching, McGill University  
2019 Nominee for the Principal's Prize for Excellence in Teaching, McGill University

#### Administration:

2022 Nominee for the Morty Yalovsky Lifetime Achievement Award for Excellence in Academic Leadership, McGill University

## PEER-REVIEWED PUBLICATIONS

(current or former supervised student/postdoc underlined; \* corresponding author)

Scopus: h-index=28; citations=4367; Google Scholar: h-index=35; citations=6231 as of Apr. 15, 2025

69. He, H., **Strachan, I.B.**, and Roulet, N.T., 2025. Simulating soil atmosphere exchanges and CO<sub>2</sub> fluxes for a restored peatland. *Biogeosciences*, 22: 1355-1368 doi.org/10.5194/bg-22-1355-2025.
68. Hunter, M.L., Frei, R., **Strachan, I.B.**, and Strack, M., 2024. Environmental and management drivers of carbon dioxide and methane emissions from actively-extracted peatlands in Alberta, Canada. *Journal of Geophysical Research – Biogeosciences* 129(3) doi.org/10.1029/e2023JG007738
67. He, H., Clark, L., Lai, O-Y., Kendall, R., **Strachan, I.B.** and Roulet, N.T., 2023. Simulating soil atmosphere exchanges and CO<sub>2</sub> fluxes for an ongoing peat extraction site. *Ecosystems*, 26(6): 1335-1348 doi.org/10.1007/s10021-023-00836-2
66. Golub, M., Koupaeei-Abyazani, N., Vesala, T., Mammarella, I., Ojala, A., Bohrer, G., Weyhenmeyer, G.A., Blanken, P.D., Eugster, W., Koebsch, F., Chen, J., Czajkowski, K., Deshmukh, C., Guerin, F., Heiskanen, J., Humphreys, E., Jonsson, A., Karlsson, J., Kling, G., Lee, X., Liu, H., Lohila, A., Lundin, E., Morin, T., Podgrajsek, E., Provenzale, M., Rutgersson, A., Sachs, T., Sahlee, E., Serca, D., Shao, C., Spence, C., **Strachan, I.B.**, Xiao, W., and Desai, A.R., 2023. Diel, seasonal, and inter-annual variation in carbon dioxide effluxes from lakes and reservoirs. *Environmental Research Letters* 18 034046, doi.org/10.1088/1748-9326/acb834
65. Clark, L., **Strachan, I.B.\***, Strack, M., Roulet, N.T., Knorr, K-H., and Teickner, H., 2023. Duration of extraction determines CO<sub>2</sub> and CH<sub>4</sub> emissions from an actively extracted peatland in eastern Québec, Canada. *Biogeosciences*, 20 :737-751, doi.org/10.5194/bg-20-737-2023
64. Goud, E.M., Touchette, S., **Strachan, I.B.**, Strack, M., 2022. Graminoids vary in functional traits, carbon dioxide and methane fluxes in a restored peatland: implications for modeling carbon storage. *J. Ecology*, doi.org/10.1111/1365-2745.13932
63. Nugent, K.A., **Strachan, I.B.\***, Strack, M., Roulet, N.T., Strom, L. and Chanton, J., 2021. Cutover peat limits methane production causing low emission at a post-extraction restored peatland. *Journal of Geophysical Research – Biogeosciences* 126(12), doi.org/10.1029/2020JG005909
62. Fournier, J., Thiboult, A., Nadeau, D.F., Vercauteren, N., Anctil, F., Parent, A-C., **Strachan, I.B.** and Tremblay, A., 2021. Evaporation from boreal reservoirs: A comparison between eddy covariance observations and estimations relying on limited data. *Hydrological Processes* 35(8):1-19, doi.org/10.1002/hyp.14335
61. Vidana Gamage, D.N., Vasava, H.B., **Strachan, I.B.**, Adamchuk, V.I., Biswas, A., 2021. Comparison of heating strategies on soil water measurement using actively heated fiber optics on contrasting textured soils. *Sensors* 21(3): 1-18
60. Helbig, M., Waddington, J.M., Alekseychik, P., Amiro, B.D., Aurela, M., Barr, A., Black, T.A., Blanken, P.D., Carey, S.K., Chen, J., Chi, J., Desai, A.R., Dunn, A., Euskirchen, E.S., Flanagan, L.B., Forbrich, I., Friborg, T., Grelle, A., Harder, S., Heliasz, M., Humphreys, E.R., Ikawa, H., Isabelle, P-E., Iwata, H., Jassal, R., Korhonen, M., Kurbatova, J., Kutzbach, L., Lindroth, A., Löfvenius, M.O., Lohila, A., Mammarella, I., Marsh, P., Maximov, T., Melton, J.R., Moore, P.A., Nadeau, D.F., Nicholls, E.M., Nilsson, M.B., Ohta, T., Peichl, M., Petrone, R.M., Petrov, R., Prokushkin, A., Quinton, W.L., Reed, D. E., Roulet, N.T., Runkle, B.R.K., Sonnentag, O., **Strachan, I.B.**, Taillardat, P., Tuittila, E-S., Tuovinen, J-P., Turner, J., Ueyama, M., Varlagin, A., Wilmking, M., Wofsy, S.C., Zyrianov, V., 2020. Increasing contribution of peatlands to boreal evapotranspiration in a warming climate. *Nature Climate Change* 10: 555–560, doi.org/10.1038/s41558-020-0763-7
59. Helbig, M., Waddington, J.M., Alekseychik, P., Amiro, B.D., Aurela, M., Barr, A., Black, T.A., Carey, S.K., Chen, J., Chi, J., Desai, A.R., Dunn, A., Euskirchen, E.S., Flanagan, L.B., Friborg, T., Garneau, M., Grelle, A., Harder, S., Heliasz, M., Humphreys, E.R., Ikawa, H., Isabelle, P-E., Iwata, H., Jassal, R., Korhonen, M.,

- M., Kurbatova, J., Kutzbach, L., Lapshina, E., Lindroth, A., Löfvenius, M.O., Lohila, A., Mammarella, I., Marsh, P., Moore, P.A., Maximov, T., Nadeau, D.F., Nicholls, E.M., Nilsson, M.B., Ohta, T., Peichl, M., Petrone, R.M., Prokushkin, A., Quinton, W.L., Roulet, N.T., Runkle, B.R.K., Sonnentag, O., **Strachan, I.B.**, Taillardat, P., Tuittila, E-S., Tuovinen, J-P., Turner, J., Ueyama, M., Varlagin, A., Vesala, T., Wilmking, M., Zyrianov, V., Schulze, C., 2020. The biophysical climate mitigation potential of boreal peatlands during the growing season. *Environmental Research Letters* 15: 104004, doi.org/10.1088/1748-9326/abab34
58. Vidana Gamage, D.N., Biswas, A., and **Strachan, I.B.**, 2020. Scale and location dependent time stability of soil water storage in a maize cropped field. *Catena* 188:104420, doi.org/10.1016/j.catena.2019.104420
  57. Nugent, K.A., **Strachan, I.B.\***, Strack, M., Roulet, N.T., Frohling, S. and Helbig, M., 2019. Prompt active restoration of peatlands substantially reduces radiative forcing. *Environmental Research Letters* 14: 124030, doi.org/10.1088/1748-9326/ab56e6
  56. Vidana Gamage, D.N., Biswas, A., and **Strachan, I.B.**, 2019. Spatial variability of soil thermal properties and their relationships with physical properties at field scale. *Soil & Tillage Research* 193: 50-58, doi.org/10.1016/j.still.2019.05.0
  55. Pelster, D.E., Watt, D., **Strachan, I.B.**, Rochette, P., Bertrand, N. and Chantigny, M., 2019. Effects of initial soil moisture, clod size and clay content on ammonia volatilization after sub-surface band application of urea. *Journal of Environmental Quality* 48(3): 549-558, doi.org/10.2134/jeq2018.09.0344
  54. O'Brien, G.A., Ross, N.A., and **Strachan, I.B.\***, 2019. The heat penalty of walkable neighbourhoods. *International Journal of Biometeorology*, doi.org/10.1007/s00484-018-01663-0
  53. Vidana Gamage, D.N., Biswas, A., and **Strachan, I.B.**, 2019. Field water balance closure with actively heated fiber optics and point-based sensors. *Water* 11, 135. doi:10.3390/w11010135
  52. Nugent, K.A., **Strachan, I.B.\***, Strack, M., Roulet, N.T. and Rochefort, L., 2018. Multi-year net ecosystem carbon balance of a restored peatland reveals a return to carbon sink. *Global Change Biology* 24(12): 5751-5768. doi:10.1111/gcb.14449
  51. Vidana Gamage, D.N., Biswas, A., and **Strachan, I.B.**, 2018. Actively heated fiber optic technique to monitor three-dimensional wetting patterns under drip irrigation. *Agricultural Water Management* 210: 243-251
  50. Rankin, T., **Strachan, I.B.\*** and Strack, M., 2018. Carbon dioxide and methane exchange at a post-extraction, unrestored peatland. *Ecological Engineering* 122: 241-251. doi:10.1016/j.ecoleng.2018.06.021
  49. Vidana Gamage, D.N., Biswas, A., **Strachan, I.B.** and Adamchuk, V.I., 2018. Soil water measurement using actively heated fiber optics at field scale. *Sensors* 18(4) 1116. doi:10.3390/s18041116
  48. Wang, W., Roulet, N.T., Kim, Y., **Strachan, I.B.**, del Giorgio, P. Prairie, Y., and Tremblay, A., 2018. Modelling CO<sub>2</sub> emissions from water surface of a boreal hydroelectric reservoir. *Science of the Total Environment* 612: 392-404. doi:10.1016/j.scitotenv.2017.08.203
  47. Irambona, C., Music, B., Nadeau, D.F., Mahdi, T.F., and **Strachan, I.B.**, 2018. Impacts of boreal hydroelectric reservoirs on seasonal climate and precipitation recycling as simulated by the CRCM5: a case study of the La Grande river watershed, Canada. *Theoretical and Applied Climatology* 131(3-4): 1529-1544. doi:10.1007/s00704-016-2010-8
  46. Järvi, L., Grimmond, C.S.B., McFadden, J.P., Christen, A., **Strachan, I.B.**, Taka, M., Warsta, L., and Heimann, M., 2017. Warming effects on the urban hydrology in cold climate regions. *Nature Scientific Reports* 7: 5833. doi:10.1038/s41598-017-05733-y
  45. **Strachan, I.B.\***, Tremblay, A., Pelletier, L., Tardif, S., Turpin, C. and Nugent, K.A., 2016. Does the creation of a Boreal hydroelectric reservoir result in a net change in evaporation? *Journal of Hydrology* 540: 886-899.

44. **Strachan, I.B.\***, Pelletier, L. and Bonneville, M-C., 2016. Interannual variability in water table level controls net ecosystem carbon dioxide exchange in a boreal bog. *Biogeochemistry* 127: 99-111.
43. Watt, D., Rochette, P., VanderZaag, A., **Strachan, I.B.\***, Bertrand, N., 2016. Impact of the oasis effect on wind tunnel measurements of ammonia volatilization. *Canadian Journal of Soil Science* 96:1–11. doi:10.1139/cjss-2016-0025
42. Strack, M., Cagampan, J., Hassanpour Fard, G., Keith, A.M., Nugent, K.A., Rankin, T., Robinson, C., **Strachan, I.B.**, Waddington, J.M., and Xu, B., 2016. Controls on plot-scale growing season CO<sub>2</sub> and CH<sub>4</sub> fluxes in restored peatlands: Do they differ from unrestored and natural sites? *Mires and Peat* 17(5): 1-18. doi:10.19189/MaP.2015.OMB.216
41. Wang, W., Roulet, N.T., **Strachan, I.B.**, and Tremblay, A., 2016. Modelling surface energy fluxes and thermal dynamics of a seasonally ice-covered hydroelectric reservoir. *Science of the Total Environment* 550: 793-805.
40. Kim, Y., Roulet, N.T., Li, C., Frolking, S., **Strachan, I.B.**, Peng, C., Teodoru, C.R., Prairie, Y.T., and Tremblay, A., 2016. Simulating carbon dioxide exchange in boreal ecosystems flooded by reservoirs. *Ecological Modelling* 327: 1-17.
39. **Strachan, I.B.\***, Nugent, K.A., Crombie, S., and Bonneville, M-C., 2015. Carbon dioxide and methane exchange at a cool-temperate freshwater marsh. *Environmental Research Letters* 10:065006
38. Pelletier, L., **Strachan, I.B.\***, Roulet, N.T., Garneau, M., and Wischnewski, K., 2015. Effect of open water pools on ecosystem scale surface-atmosphere carbon dioxide exchange in a boreal peatland. *Biogeochemistry* 1–14. doi: 10.1007/s10533-015-0098-z
37. Pelletier, L., **Strachan, I.B.\***, Roulet, N.T., and Garneau, M., 2015. Can boreal peatlands with pools be net sinks for CO<sub>2</sub>? *Environmental Research Letters* 10:035002; Monthly Highlighted pub (Mar'15)
36. Kim, Y., Roulet, N.T., Peng, G., Li, C., Frolking, S., **Strachan, I.B.**, and Tremblay, A., 2014. Multi-year carbon dioxide flux simulations for mature Canadian black spruce forests and ombrotrophic bogs using Forest-DNDC. *Boreal Environment Research* 19(5-6): 417-440
35. Järvi, L., Grimmond, C.S.B., Taka, M., Nordbo, A., Setälä, H., and **Strachan, I.B.**, 2014. Development of the Surface Urban Energy and Water balance Scheme (SUEWS) for cold climate cities, *Geoscientific Model Development* 7: 1691-1711
34. Pelletier, L., **Strachan, I.B.\***, Garneau, M., and Roulet, N.T., 2014. Carbon release from boreal peatland open water pools: implication for the contemporary C exchange. *Journal of Geophysical Research – Biogeosciences* 119(3): 207-222. doi:10.1002/2013JG002423
33. Hong, J., Mathieu, N., **Strachan, I.B.**, Pattey, E., and Leclerc, M.Y., 2012. Response of ecosystem carbon and water vapor exchanges in evolving nocturnal low-level jets. *Asian Journal of Atmospheric Environment* 6-3: 222-233.
32. Teodoru, C., Bastien, J., Bonneville, M-C., del Giorgio, P.A., Demarty, M., Garneau, M., Hélie, J-F., Pelletier, L., Prairie, Y.T., Roulet, N.T., **Strachan, I.B.**, and Tremblay, A., 2012. The first complete carbon budget for a newly-created boreal hydroelectric reservoir: net carbon footprint of the Eastmain-1 reservoir. *Global Biogeochemical Cycles* 26: GB2016. doi:10.1029/2011GB004187.
31. Bergeron, O. and **Strachan, I.B.\***, 2012. Wintertime radiation and energy budget along an urbanization gradient in Montreal, Canada. *International Journal of Climatology* 32: 137-152.
30. Leroyer, S., Mailhot, J., Belaire, S., and **Strachan, I.B.**, 2011. Microscale numerical prediction over Montreal with the Canadian External Urban Modeling System. *Journal of Applied Meteorology and Climatology* 50:2410-2428.
29. Bergeron, O. and **Strachan, I.B.\***, 2011. CO<sub>2</sub> sources and sinks in urban and suburban areas of a northern mid-latitude city. *Atmospheric Environment* 45(8): 1564-1573
28. Dasgupta, K., Joseph, L., Pilote, L., **Strachan I.B.**, Sigal, R., and Chan, C., 2010. Daily steps are low year-round and dip lower in fall/winter: findings from a longitudinal diabetes cohort. *Cardiovascular Diabetology* 9:81-90.

27. Dabros, A., Fyles, J., and **Strachan, I.B.**, 2010. Effects of open-top chambers on physical properties of air and soil at post-disturbance sites of transitional forest zone in northwestern Quebec. *Plant and Soil*, 333(1-2):203-218.
26. Leroyer, S., Mailhot, J., Belaire, S., Lemonsu, A., and **Strachan, I.B.**, 2010. Modeling the surface energy budget during the thawing period of the 2006 Montreal Urban Snow Experiment. *Journal of Applied Meteorology and Climatology* 49(1): 68-84.
25. Almaraz, J.J., Mabood, F., Zhou, X., **Strachan, I.B.**, Ma, B., and Smith, D.L., 2009. Performance of agricultural systems under contrasting growing season conditions in South-Western Quebec. *Journal of Agronomy and Crop Science*, 195: 319–327. DOI: 10.1111/j.1439-037X.2009.00369.x
24. **Strachan, I.B.\***, Pattey, E., Salustro, C., and Miller, J.R., 2008. Use of hyperspectral remote sensing to estimate the gross photosynthesis of agricultural fields. *Canadian Journal of Remote Sensing* 34(3): 333-341.
23. Pattey, E., Blackburn, L.G., **Strachan, I.B.**, Desjardins, R., and Dow, D., 2008. Spring thaw and growing season N<sub>2</sub>O emissions from a field planted with edible peas and a cover crop. *Canadian Journal of Soil Science* 88:241-249
22. Bonneville, M.-C., **Strachan, I.B.\***, Humphreys, E., and Roulet, N.T., 2008. The net ecosystem exchange of a cattail marsh in Eastern Canada in relation to biophysical properties. *Agricultural and Forest Meteorology*, 148: 69-81.
21. Dasgupta, K. Chan, C., Da Costa, D., Pilote, L., De Civita, M., Ross, N.A., **Strachan, I.B.**, Sigal, R., Joseph, L., 2007. Walking behaviour and glycemic control in type 2 diabetes: seasonal and gender differences. Study design and methods. *Cardiovascular Diabetology* 6:1-11.
20. Pattey, E. **Strachan, I.B.**, Desjardins, R.L., Edwards, G.C., Dow, D., and MacPherson, I.J., 2006. Application of a tunable diode laser to the measurement of CH<sub>4</sub> and N<sub>2</sub>O fluxes from field to landscape scale using several micrometeorological techniques. *Agricultural and Forest Meteorology* 136: 222-236.
19. Pattey, E., Edwards, G., **Strachan, I.B.**, Desjardins, R.L., Kaharabata, S., and Wagner Riddle, C., 2006. Towards standards for measuring greenhouse gas flux from agricultural fields using instrumented towers. *Canadian Journal of Soil Science* 86: 373-400.
18. Mathieu, N., **Strachan, I.B.\***, Leclerc, M.Y., Karipot, A., and Pattey, E., 2005. Role of low-level jets and boundary-layer properties on the NBL budget technique. *Agricultural and Forest Meteorology* 135: 35-43.
17. **Strachan, I.B.\***, Stewart, D.W. and Pattey, E., 2005. Determination of leaf area index in agricultural systems. In: J.L. Hatfield and J.M. Baker (eds.), *Micrometeorology in Agricultural Systems*, Agronomy Monograph No. 47 ASA-CSSA-SSSA. pp.179-198.
16. Uno, Y., Prasher, S.O., Patel, R.M., **Strachan, I.B.**, Pattey, E., and Karimi, Y., 2005. Development of field-scale soil organic matter content estimation models in Eastern Canada using airborne hyperspectral imagery. *Canadian Biosystems Engineering*, 47: 1.9-1.14.
15. Vigier, B., Pattey, E. and **Strachan, I.B.**, 2004. Narrow-band vegetation indices and detection of disease damage in soybeans. *IEEE Geoscience and Remote Sensing Letters*, 1(4): 255-259.
14. Haboudane, D., Miller, J.R., Pattey, E., Zarco-Tejada, P. and **Strachan, I.B.**, 2004. Hyperspectral vegetation indices and novel algorithms for predicting green LAI of crop canopies: Modeling and validation in the context of precision agriculture. *Remote Sensing of Environment*, 90: 337-352.
13. Sigurdsson, B.D., Bjarndóttir, B., **Strachan I.B.**, and Pálmason, F., 2004. The Gunnarsholt Experimental Forest II. Annual water balance and water quality (Tilraunaskógurinn í Gunnarsholti II. Vatnið í skóginum). *Journal of the Icelandic Forestry Association*, (Skógræktarritið. Icelandic with English summary), pp. 51-59.
12. **Strachan, I.B.\***, Pattey, E., and Boisvert, J.B., 2002. Impact of nitrogen and environmental conditions on corn as detected by hyperspectral reflectance. *Remote Sensing of Environment*, 80(2): 213-224.

11. Pattey, E., **Strachan, I.B.**, Desjardins, R.L., and Massheder, J., 2002. Measuring nighttime CO<sub>2</sub> flux over terrestrial ecosystems using eddy covariance and nocturnal boundary layer methods. *Agricultural and Forest Meteorology*, 113(1-4): 145-153.
10. **Strachan, I.B.\***, and McCaughey, J.H., 2002. Stomatal conductance of *P. trichocarpa* in Southern Iceland in relation to environmental variables. *Scandinavian Journal of Forest Research*, 17(1): 7-14.
9. Pattey, E., **Strachan, I.B.**, Boisvert, J.B., Desjardins, R.L. and McLaughlin, N.B., 2001. Detecting effects of nitrogen application rate and weather on corn using micrometeorological and hyperspectral reflectance measurements. *Agricultural and Forest Meteorology*, 108: 85-99.
8. **Strachan, I.B.\***, Arnalds, Ó., Pálmason, F., Thorgeirsson, H., Sigurdsson, B.D., Sigurðardóttir, H., and Novoselac, G., 1998. Soils of the Gunnarsholt experimental plantation. *Icelandic Agricultural Sciences*, 12:15-26.
7. **Strachan, I.B.\***, Sigurdsson, B.D., and McCaughey, J.H., 1998. Soil hydrology at the Gunnarsholt experimental plantation: measurement and results. *Icelandic Agricultural Sciences*, 12:27-34.
6. Sigurdsson, B.D., Aradóttir, Á.L., and **Strachan, I.B.**, 1998. Cover and canopy development of a newly established poplar plantation at Gunnarsholt, S. Iceland. *Icelandic Agricultural Sciences*, 12:35-46.
5. Lafleur, P.M., McCaughey, J.H., Bartlett, P.A., and **Strachan, I.B.**, 1998. Observations of the micrometeorology of two forests in eastern Ontario, Canada 1. Interannual variations in summer radiation and energy balance. *Canadian Journal of Forest Research*, 28:514-523.
4. Aradóttir, Á.L., Thorgeirsson, H., McCaughey, J.H., **Strachan, I.B.**, and Robertson, A., 1997. Establishment of a Black Cottonwood plantation on an exposed site in Iceland: Plant growth and site energy balance. *Agricultural and Forest Meteorology*, 84:1-9.
3. **Strachan, I.B.\***, and McCaughey, J.H., 1996. Spatial and vertical leaf area index of a deciduous forest resolved using the LAI-2000 Plant Canopy Analyzer. *Forest Science*, 42:176-181.
2. **Strachan, I.B.\***, and Harvey, L.E., 1996. Quantifying the effects of temporal autocorrelation on climatological regression models using geostatistical techniques. *Canadian Journal of Forest Research*, 26:864-871.
1. **Strachan, I.B.\***, and Wilcox, S., 1996. Peer and self assessment of group work: Developing an effective response to increased enrolment in a third-year course in microclimatology. *Journal of Geography in Higher Education*, 20:343-353.

#### **INDUSTRY-SPONSORED (Peer-Reviewed) PUBLICATIONS**

- Tremblay, A., Tardif, S., **Strachan, I.B.**, and Turpin, C., 2014. Net water evaporation from the Eastmain-1 reservoir. *Hydro Review* 33(5): 52-60.
- Tremblay, A., Bastien, J., **Strachan, I.B.**, and Bonneville, M-C., 2010. Three methods to study CO<sub>2</sub> and CH<sub>4</sub> fluxes at Eastmain 1 reservoir, Canada. *International Journal on Hydropower and Dams*, 17(4): 78-83.
- Bonneville, M-C., and **Strachan, I.B.\***, 2008. Measuring GHG emissions - the use of eddy covariance techniques. *International Water Power and Dam Construction* 60(9): 22-25.

#### **SELECTED OTHER PUBLICATION**

- Strachan, I.B.**, 2012. Measuring wind and transport in the planetary boundary layer. In: Ahrens, C.D., Jackson, P.L. and Jackson, C.E.J., *Meteorology Today. An Introduction to Weather, Climate, and the Environment. First Canadian Edition*. Nelson Education, pp.262-3. Invited Contribution

## TRAINING OF HIGHLY QUALIFIED PERSONNEL

Post-Doctoral Researchers:

Dr. Manuel Helbig 2017 “Ecosystem CO<sub>2</sub> and CH<sub>4</sub> exchange in restored peatlands”

Dr. Luc Pelletier 2015-2016 “Carbon exchange in restored peatlands”

Dr. Onil Bergeron 2007-2010 “Surface energy budgets of urban, suburban and rural sites”

Dr. Sylvie Leroyer 2007-2009 “Modelling of meso-scale and urban boundary-layer circulations within the Montreal urban area”

Ph.D.:

**Jean-Pierre Lebrun 2024-current**

**James Zhao 2023-current** (co-supervised w. N. Scott)

Miranda Hunter 2024 “Hydrological controls on carbon and water vapour fluxes from peatlands undergoing active harvest” (U. Waterloo; as co-supervisor w. M. Strack)

Silvie Harder 2019 (as co-supervisor w. N.T. Roulet) “Relationships between carbon, energy and water balance in a palsa permafrost peatland: Can we explain the ecosystem-scale fluxes by its component parts?”

Kelly Nugent 2019 “Carbon cycling at a post-extraction restored peatland: Small-scale processes to global climate impacts”

Duminda Vidana Gamage 2019 (as supervisor w. A. Biswas – U.Guelph) “New soil water sensing technique to quantify spatio-temporal dynamics of soil water at point to field scale”

Luc Pelletier 2014. “The net carbon exchange in coastal peatlands along Quebec’s Cote Nord”

Laura Wittebol 2009. “Refinement and verification of the nocturnal boundary layer budget method for estimating greenhouse gas emissions from Eastern Canadian agricultural farms”

M.Sc.:

**Prateeksha Vadali 2023-current**

Sophie Burgess 2025 (McGill; as co-supervisor with C. Kallenbach) “C storage and mobility in a freshwater marsh”

Steffy Velosa 2025 (McGill; as co-supervisor with N.T. Roulet) “Effects of management on C production and exchange in drained peatlands”

Leah Brown 2024 “Two decades of micrometeorological measurements show annual trends in N<sub>2</sub>O emissions from an agricultural field: the role of non-growing season soil freezing and fertilization in eastern Canada”

Laura Clark 2021 “Years of extraction determines CO<sub>2</sub> and CH<sub>4</sub> emissions from an actively extracted peatland in eastern Québec, Canada”

Haley Alcock 2020 “Methane emissions from a temperate freshwater marsh”

Sabrina Touchette 2017 (U. Waterloo; as co-supervisor w. M. Strack) “Hydrological controls on GHG exchange in a post-restoration peatland”

Scott MacDonald 2017 “Interannual variability and spatial heterogeneity in net carbon exchange at a restored peatland in Alberta” 102 pp.

Tracy Rankin 2016 “An analysis of carbon dioxide and methane exchange at a post-extraction, unrestored peatland in Eastern Québec” 84 pp.

Devon Watt 2016 “Impacts of soil physical properties and of the wind-tunnel measurement technique on ammonia volatilization from urea-fertilized soils” 103 pp.

Carlomagno Soto 2015 (as co-supervisor w. M. Kalacska). “Hyperspectral remote sensing investigations of vegetation in Northern Peatlands” 145 pp.



Julie de Gea 2015 (as co-supervisor w. M. Kalacska) "Phenology of vegetation light-use efficiency and reflectance: experiment over two boreal ecosystems" 92 pp.

Kelly Nugent 2013 "Carbon dioxide, water vapour and energy fluxes of a recently burned boreal jack pine stand in north-western Québec, Canada" 128 pp.

Stephanie Crombie 2012 "The carbon and energy budgets of a marsh ecosystem" 116 pp.

Cheryl Rogers 2011 "Remote sensing of light use efficiency in a boreal forest and peatland in James Bay, Quebec" 100 pp.

Marie-Eve Lemieux 2010 "From forest to lake: effect of hydroelectric reservoir impoundment on the net ecosystem exchange of carbon dioxide" 131 pp.

Eric Christensen 2010 "Measurement and modelling of snow properties in urban and suburban Montreal neighbourhoods." 127 pp.

Jackie Dee Grom 2008 (as co-supervisor w. W. Pollard) "Environmental controls on retrogressive thaw slump development".

Pierre-Luc Lizotte 2007 "A portable profiling system for determining horizontal and vertical CO<sub>2</sub> advection" 92 pp.

Marie-Claude Bonneville 2006 "Measurement and modeling of surface-atmosphere exchange of CO<sub>2</sub> and CH<sub>4</sub> in a cattail marsh in Eastern Ontario" 144 pp.

Lynda Blackburn 2006 "Quantification and estimation of N<sub>2</sub>O emissions from dairy manure applications in a Western Quebec pea-forage and an Eastern Ontario alfalfa-forage cropping system" 139 pp.

Nathalie Mathieu 2004 "A study of atmospheric properties and their impact on the use of the nocturnal boundary layer budget technique for trace gas measurement" 106 pp.

*Summer USRA / senior undergraduate (honours) project supervision:*

Amelie Delesalle 2025 "Greenhouse gas emissions from a 20-year-old restored peatland"

Katherine Bot 2025 "Ecosystem greenhouse gas exchange following the Acrotelm Harvesting Method"

Declan Roche 2025 "Plant community greenhouse gas exchange three years after application of the peatland Acrotelm Harvest Method"

Gavin Cordon 2024 "Using Arduino microcomputers as a pedagogical tool to teach climate analysis"

Josie Messersmith 2022 "Partitioning carbon fluxes in a freshwater marsh"

Kaiyuan Wang 2021 "A further examination of peat stockpile emissions"

Amelia Weiss 2021 "Understanding the practical application of urban carbon budgets"

Karina Volpato 2020 "Reducing production stage carbon emissions: A peat industry case study"

Maria Gheeta 2020 "CO<sub>2</sub> and CH<sub>4</sub> emissions from stockpiles of an exploited peatland in eastern Quebec"

William Xing 2020 "Net effect of flooding a black spruce forest on CO<sub>2</sub> emissions"

Laura Clark 2019 "Effects of age on CO<sub>2</sub> emissions from in-production drained peatlands"

Naomi Weinberg 2018 "Effects of extraction on CO<sub>2</sub> emissions from an in-production drained peatland"

Maude Durand 2018 "Using digital images to estimate net CO<sub>2</sub> uptake in a marsh"

Iona Sobral 2018 "Comparing urban rooftop- and suburban-garden microclimates"

Grace O'Brien 2017 "Measurements of urban heat in Montreal neighbourhoods"

Emma Webb, 2016 "GHG exchange from pools in restored peatlands"

Gwen Miller-Dannelongue, 2014 "Methane from reed plants in restored peatlands"

*Undergraduate summer assistants:*

C. Bodger 2024; M. Lessard, G. Wade-Salay, C. Savard, 2023; M. Meades, 2019; I. Carrasco, 2016; J. Rakofsky, 2014; C. Watt, 2013; C. Lefrancois, 2011, 2012; C. Troisi, 2011; +21 other research assistants since 2001; +9 other full/part time technical/professional staff



## SELECTED STUDENT PRESENTATION AWARDS

Velosa, S., Strachan, I.B. and Roulet, N.T. 2025. Kananaskis oral presentation (second place)

Hunter, M., Strachan, I.B. and Strack, M., 2024. *Investigating evaporation dynamics from peatlands under active extraction in Alberta and Quebec, Canada*. Canadian Geophysical Union Annual Meeting, Ottawa. This oral presentation won the Campbell Scientific Canada – Bert Tanner Student Prize from the CSAFM for best student paper based on quality of the research and the presentation.

Nugent, K.A., Strachan, I.B. and Strack, M., 2017. *Multi-year net ecosystem carbon balance at the restored Bois-des-Bel peatland*. 23rd symposium of the Peatland Ecology Research Group, Quebec City. This presentation won the Best Student Oral Presentation prize at PERG2017.

Nugent, K.A., Strachan, I.B., Strack, M. and Pelletier, L., 2016. *Evaluating the carbon sequestration function of a horticulture-extracted restored peatland*. 3rd AMS Conference on Biogeosciences, Salt Lake City, UT. This oral presentation won the Canadian Society for Agricultural and Forest Meteorology (CSAFM) Award for outstanding student presentation.

Pelletier, L., Strachan, I.B., Roulet, N.T. and Garneau, M., 2015. *The impact of open-water pools on the net ecosystem CO<sub>2</sub> exchange of a Boreal peatland*. Joint Assembly of the American Geophysical Union, Montreal. This oral presentation won the Campbell Scientific - Bert Tanner Student Prize from the CSAFM for best student paper based on quality of the research and the presentation.

Crombie, S. and Strachan, I.B., 2012. *Carbon and water vapour exchange in a temperate freshwater marsh*. 30th AMS Conference on Agriculture and Forest Meteorology, Boston, MA. This poster and extended abstract won both the CSAFM Award for outstanding student poster presentation and an American Meteorology Society Student Presentation Award.

Pelletier, L., Strachan, I.B., and Garneau, M., 2012. *Carbon dynamics in coastal peatlands of Quebec's North Shore*. 30th AMS Conference on Agricultural and Forest Meteorology, Boston, MA. This poster and extended abstract won an American Meteorology Society Student Presentation Award.

Rogers, C. 2011. "Remote sensing of light use efficiency in a boreal forest and peatland in James Bay, Quebec" 100 pp. Awarded *Best Master's Thesis 2011* from the Canadian Remote Sensing Society.