

H. Damon Matthews

CURRICULUM VITAE

Department of Geography, Planning and Environment, Concordia University

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Professional Appointments and Employment

Current Affiliation

1. Concordia University, Montreal, Canada 2007 – Present
Department of Geography, Planning and Environment
 - Full Professor 2016 – Present
 - Science Director, Sustainability in the Digital Age 2021 – Present
 - Program Director, NSERC CREATE in Leadership in Environmental and Digital Innovation for Sustainability (LEADS) 2020 – Present

Previous Appointments

2. Concordia University, Montreal Canada
 - Tier 1 Concordia University Research Chair in Science and Sustainability 2017 – 2022
 - Interim Director, Future Earth Canadian Global Hub 2020 – 2021
 - Tier 2 Concordia University Research Chair in Science and Sustainability 2012 – 2017
 - Graduate Program Director 2011 – 2013; 2016; 2019; 2022-2024
 - Associate Professor 2010 – 2016
 - Assistant Professor 2007 – 2010

Post-doctoral Research Experience

3. Carnegie Institution, Stanford California 2006
 - Postdoctoral Researcher, Department of Global Ecology
 - Supervisor: Dr. Ken Caldeira
4. University of Calgary, Calgary, Canada 2004 – 2006
 - Postdoctoral Fellow, Department of Geography
 - Supervisor: Dr. Shawn Marshall

Educational History

1. University of Victoria, Victoria, Canada 2000 – 2004
 - Doctor of Philosophy in Earth and Ocean Sciences (Climate Science)
 - PhD Dissertation Title: *Land Cover Change, Vegetation Dynamics and the Global Carbon Cycle: Experiments with the UVic Earth System Climate Model*
 - Supervisor: Dr. Andrew Weaver
2. Simon Fraser University, Vancouver, Canada 1994 – 1999
 - Undergraduate Honours Degree in Environmental Sciences (Quantitative Methods)

Summary of Experience and Qualifications

CURRENT POSITION

- **Professor** and Graduate Program Director, Concordia University

ACADEMIC LEADERSHIP HIGHLIGHTS

- **Program Director**, NSERC-CREATE in Leadership in Environmental and Digital Innovation for Sustainability (LEADS) Program (2020 – Present)
- **Science Director**, Sustainability in the Digital Age (2020 – Present)
- **Interim Director**, Future Earth Canada Global Hub (2019; 2024 – Present)
- **Research Director**, Climate Scenarios, Impacts and Modelling Lab (2007 – Present)
- **Concordia University Research Chair**, Climate Science and Sustainability (2012 – 2022)

SELECTED AWARDS AND RECOGNITIONS

- **Recipient**, President's Media Outreach Award – 2023 Research Communicator of the Year
- **Coordinating Lead Author**, Canada's Changing Climate Report (forthcoming 2025)
- **Fellow**, Earth Leadership Program 2022 Cohort
- **Member**, College of New Scholars, Artists and Scientists of Royal Society of Canada
- **Review Editor**, Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report
- **Recipient**, CMOS President's Prize
- **Honouree**, Canada Clean50

SUMMARY OF SCHOLARLY WORKS

- **138** refereed journal publications (134 published, 4 in review)
- **13** other refereed publications (including 7 IPCC report chapters)
- **24** articles in the high-impact journals *Nature*, *Science*, *Nature Geoscience*, *Nature Climate Change*, *Nature Communications* and *Proceedings of the National Academy of Sciences*
- **80** invited presentations and seminars (including 6 keynote conference presentations)
- **Total citations:** 37,709 (all publications); 18,260 (excluding IPCC report chapters)
- **h-index:** 60 (all publications); 53 (excluding IPCC report chapters)

SUMMARY OF RESEARCH FUNDING

- **\$4.3M** obtained in research funding as PI (\$3.75M external; \$550K internal)
- **\$75K** current annual NSERC Discovery Grant

SUMMARY OF GRADUATE SUPERVISION

- **12 Current:** 3 postdoctoral, 3 PhD students, 6 MSc students
- **49 Completed:** 12 postdoctoral, 6 PhD, 18 MSc, 13 Honours undergraduate
- **52 Publications** with supervised students/postdocs as first author

SUMMARY OF MEDIA ACTIVITIES

- **30+ Op-Eds** and *The Conversation* articles published
- **250+ media interviews** related to research findings and general climate science expertise
- **600+ results** for Google News search for <Damon Matthews Concordia>

Awards, Honours and Recognitions

1. Research.com Ranking of Best Scientists in the field of Environmental Sciences
 - Awarded By: Research.com
 - Description: Ranked 3995st globally (177th in Canada) for most highly cited researchers
 - Date Awarded: April 2024
2. President's Media Outreach Award – Research Communicator of the Year (National)
 - Awarded By: Concordia University
 - Date Awarded: February 2023
3. Newsmaker of the Month
 - Awarded By: Concordia University
 - Date Awarded: November 2022, June 2022, April 2022, January 2021
4. Earth Leadership Program Fellow, 2022 Cohort
 - Awarded By: Earth Leadership Program
 - Date Awarded: June 2021
5. The Reuters Hot List
 - Awarded By: Reuters
 - Description: Ranked 226th (5th in Canada) among world's most influential climate scientists
 - Date Awarded: April 2021
6. Tier 1 Concordia University Research Chair
 - Awarded By: Concordia University
 - Date Awarded: June 2017
7. Provost's Circle of Distinction
 - Awarded By: Concordia University
 - Date Awarded: April 2017
8. Induction to the College of New Scholars, Artists and Scientists
 - Awarded By: Royal Society of Canada
 - Date Awarded: November 2016
9. Newsmaker of the Week
 - Awarded By: Concordia University
 - Date Awarded: September 2017, August 2016, April 2016, January 2016, September 2015, January 2014, November 2012, March 2012
10. CMOS President's Prize
 - Awarded By: Canadian Meteorological and Oceanography Society
 - Category: Prize awarded for a recent paper of special merit
 - Date Awarded: June 2015
11. IAP Young Scientist Representative at World Science Forum
 - Awarded By: The InterAcademy Partnership
 - Date Awarded: May 2015
12. Canada Clean50 2015 Honouree
 - Granting Agency: Delta Management Group
 - Date Awarded: September 2014
 - URL: www.clean50.com
13. President's Media Outreach Award – Research Communicator of the Year (International)
 - Awarded By: Concordia University
 - Date Awarded: June 2014
14. Tier 2 Concordia University Research Chair
 - Awarded By: Concordia University

- Date Awarded: June 2012
- 15. Dean's New Scholar Award
 - Awarded By: Faculty of Arts and Science, Concordia University
 - Value: \$500; Period Held: 2009
- 16. Concordia University Research Fellow
 - Award: University Research Award
 - Value: \$5,000; Period Held: 2009
- 17. Post-Doctoral Research Fellowships
 - Awarded by: Alberta Ingenuity Fund (\$44,000)
 - Awarded by: Natural Sciences and Engineering Research Council of Canada (\$80,000)

Scholarly and Professional Contributions

Publications in Refereed Journals

*Student author's names are indicated below in **bold**.*

SUBMITTED

1. Bohn, F. J. et al. (Matthews, H. D. one of 34 co-authors) Reviews and syntheses: Current perspectives on biosphere research–2024, *Biogeosciences*, submitted August 2024.
2. **Evans, R. C.** and Matthews, H. D. The effectiveness of agricultural carbon dioxide removal using the University of Victoria Earth System Climate Model. *Biogeosciences*, submitted June 2024.
3. Xiao, T, Nerini, F. F., Matthews, H. D., Tavoni, M. and You, F. Unveiling energy-water-climate impact and net-zero pathways of AI servers in the U.S. by 2030. *Nature Climate Change*, submitted June 2024.
4. **Guertin, É** and Matthews, H. D. Modeling global wildfire activity in an intermediate complexity earth system climate model: the importance of the simulated climatology. *Geophysical Model Development*, submitted September 2022.

PUBLISHED / IN PRESS

5. **Yuh, Y. G.**, N'Goran, K. P., Kross, A., Heurich, M., Matthews, H. D. and Turner, S. E. Monitoring forest cover and land use change in the Congo Basin under IPCC climate change scenarios. *PLOS One*, in press.
6. Allen M et al. (Matthews, H. D. one of 25 co-authors). Geological Net Zero and the need for separate accounting for natural carbon sinks. *Nature*, in press.
7. Langer, L., Brander, M., Keles, D., Lloyd, S., Matthews, H. D. and Bjørn, A., (2024) Do voluntary renewable energy certificates lead to emission reductions? A review of studies quantifying their impact. *Journal of Cleaner Production*, 143791.
8. **Wynes, C. S.**, Chow, W. T. L., David, S. J., **Dickau, M.**, **Ly, S.**, Maibach, E., Rogelj, J., Zickfeld, K. and Matthews, H. D. Perceptions of future climate outcomes among IPCC authors. *Communications Earth and Environment*, 5, 498.
9. Garard, J. and Matthews, H. D. (2024) Digitizing Nature (Book Review), *Science*, 384, 39-39.
10. **Nzotungicimpaye, C.-M.** and Matthews, H. D. (2024) Linking cumulative carbon emissions with observable climate impacts. *Environmental Research Climate*, 3, 032001.
11. **Moore, T. R.**, **Chavillaz, Y.** and Matthews, H. D. (2024) Linking historical and projected trends in precipitation extremes to cumulative emissions. *Atmosphere-Ocean*, 62, 165-182.

12. Zickfeld, K., Canadell, J. G., Fuss, S., Jackson, R. B., Jones, C. D., Lohila, A., MacIsaac, A. J., Matthews, H. D., Peters, G. P., Rogelj, J. and Zaehle, S. (2023) Net zero must consider broader climate impacts to achieve climate goals. *Nature Climate Change*, 13, 1298-1305.
13. Matthews, H. D. (2023) How much additional global warming should we expect from past CO₂ emissions? *Frontiers in Science*, 1, 1327653.
14. Matthews, H. D., Zickfeld, K., Koch, A. and Luers, A. (2023) Accounting for the climate benefit of temporary carbon storage in nature. *Nature Communications*, 14, 5485.
15. **Bjørn, A.**, Matthews, H. D., *Hadziiosmanovic, M., Desmoitier, N. L. R., Addas, A. and Lloyd, S. M. (2023). Increased transparency is needed for corporate science-based targets to be effective. *Nature Climate Change (Comment)*, 13, 756-759.
16. **Bjørn, A.**, Lloyd, S., Schenker, U., Margni, M., Lemasle, A., Agez, M. and Matthews, H. D. (2023). Differentiation of greenhouse gases in corporate science-based targets improves alignment with Paris temperature goal. *Environmental Research Letters*. 18: 984997.
17. **Yuh, Y. G.**, N’Goran, K. P., Beukou, G. B., Wendefeuer, J, Neba, T. F., Ndotar, A. M., Ndomba, D. M., Herbinger, I., Matthews, H. D. and Turner, S. E. (2023) Recent decline in suitable large mammal habitats within the Dzanga Sangha Protected Areas, Central African Republic. *Global Ecology and Conservation*, 42, e02404.
18. Turner, S. E., Fedigan, L. M., Joyce, M. M., Matthews, H. D., Moriarity, R. J., Nobuhara, H., Nobuhara, T, Stewart, B. and Shimizu, K. (2023) Mothers of disabled infants and lower ranking females had higher fecal cortisol levels in a free-ranging group of Japanese macaques (*Macaca fuscata*). *American Journal of Primatology*, 85, e23500.
19. **Wynes, C. S.** and Matthews, H. D. (2023) Missing density: assessing support for compact cities among Canadian municipal officials and members of the public. *Climate Policy*, 23, 1019-1032.
20. **Yuh, Y. G.**, Tracz, W., Matthews, H. D. and Turner, S. E. (2023) Application of machine learning approaches for land cover monitoring in northern Cameroon. *Ecological Informatics*, 74: 101955.
21. **Wynes, C. S., Dickau, M.**, Kotcher, J., Thaker, J., Goldberg, M., Matthews, H. D. and Donner, S. (2023) Frequent pro-climate messaging does not predict pro-climate voting by United States legislators. *Environmental Research Climate*, 1: 025011.
22. Lesk, C., Horton, R. M., Mach, K. J., Matthews, H. D., **Greenford, D. H.**, Krekeler, R., Levesque, A., Sgouridis, S., Csala, D. (2022) Mitigation and adaptation emissions embedded in the broader climate transition. *Proc. of the National Academy of Sciences*, 119, e2123486119.
23. Huard, D., Fyke, J., Capellán-Pérez, I., Matthews, H. D. and Partanen, A.-I. (2022) Estimating the likelihood of GHG concentration scenarios from probabilistic Integrated Assessment Model simulations. *Earth’s Future*, 10, e2022EF002715.
24. **Wynes C. S.**, Garard, J., Fajardo, P., Aoyagi, M., Burkins, M., Chaudhari, K., Forrester, T., Garschagen, M., Hudson, P., Ivanova, M., Maibach, E., Stevance, A.-S., Wood, S., Matthews, H. D. (2022) Climate action failure highlighted as leading global risk by both scientists and business leaders, *Earth’s Future*, 10, e2022EF002857.
25. Garard, J., Wood, S. L. R., Sabet-Kassouf, N., Ventimiglia, A., Matthews, H. D., Ubalijoro, E., Chaudhari, K., Ivanova, M., and Luers, A. L. (2022) Moderate support for the use of digital tracking to support climate-mitigation strategies. *One Earth*, 5, 1-12
26. Matthews, H. D. and **Wynes, C. S.** (2022) Current global efforts are insufficient to limit warming to 1.5°C. *Science*, 376, 1404-1409.
27. **Bjørn, A.**, Lloyd, S., Brander, M. and Matthews, H. D. (2022) Renewable energy certificates allow companies to overstate their emission reductions. *Nature Climate Change*, 12, 508-509.
28. **Bjørn, A.**, Lloyd, S., Brander, M. and Matthews, H. D. (2022) Renewable energy certificates threaten the integrity of corporate science-based targets. *Nature Climate Change*, 12, 539-546.

29. Luers, A., Yona, L., Field, C. B., Jackson, R. B., Mach, K. J., Cashmore, B., Elliott, C., Gifford, L., Honigsberg, C., Klaassen, L., Matthews, H. D., Peng, A., Stoll, C., Van Pelt, M., Virginia, R. A. and Joppa, L. (2022) Towards reliable and interoperable greenhouse gas accounting. *Nature*, 607, 653-656.
30. **Dickau, M.**, Matthews, H. D. and Tokarska, K. B. (2022) The role of remaining carbon budgets and net-zero CO₂ targets in climate mitigation policy. *Current Climate Change Reports*, 1-13.
31. Chuard, P., Garard, J., Schulz, K., Kumarasinghe, N., Rolnick, D., and Matthews, H. D. (2022) A portrait of the different configurations between digitally-enabled innovations and climate governance. *Earth System Governance*, 13, 100147.
32. **Hadziosmanovic, M.**, Lloyn, S., Bjørn, A., Paquin, R., Mengis, N. and Matthews, H. D. (2022) Using cumulative carbon budgets and corporate carbon disclosure to inform ambitious corporate emissions targets and long-term mitigation pathways. *Journal of Industrial Ecology*, 1-13.
33. Matthews, H. D., Zickfeld, K., **Dickau, M.**, MacIsaac, A., Mathesius, S., **Nzotungicimpaye, C.-M.** and Luers, A. (2022) Temporary nature-based carbon removal can lower peak warming in a well-below 2°C scenario. *Communications Earth and Environment*, 3, 1-8.
34. **Bjørn, A.**, Lloyd, S. and Matthews, H. D. (2022) Reply to Comment on ‘From the Paris Agreement to corporate climate commitments: Evaluation of seven methods for setting “science-based” emission targets’. *Environmental Research Letters*, 17, 038001.
35. Martin, M. A. et al. (2021) Ten new insights in climate science 2021 – a horizon scan. *Global Sustainability*, 4, 1-20. (Matthews, H. D., co-author)
36. Jackson, R. B., Abernathy, S., Canadell, J. G., Cargnello, M., Davis, S. J., Féron, S., Fuss, S., Heyer, A. J., Hong, C., Jones, C. D., Matthews, H. D., O’Connor, F. M., Pisciotta, M., Rhoda, H. M., de Richter, R., Solomon, E. I., Wilcox, J. and Zickfeld, K. (2021) Atmospheric methane removal: a research agenda. *Philosophical Transactions of the Royal Society A*, 379, 20200454.
37. Reed, G., **Gobby, J.**, Sinclair, R., Ivey, R., and Matthews, H. D. (2021) Indigenizing climate policy in Canada: a critical examination of the Pan-Canadian Framework and the ZéN RoadMap. *Frontiers in Sustainable Cities*, 3, 644675.
38. **Bjørn, A.**, Lloyd, S. and Matthews, H. D. (2021) From the Paris Agreement to corporate climate commitments: Evaluation of seven methods for setting “science-based” emission targets. *Environmental Research Letters*, 16, 054019.
39. Zickfeld, K., Azevedo, D., Mathesius, S. and Matthews, H. D. (2021) Asymmetry in the climate-carbon cycle response to positive and negative CO₂ emissions. *Nature Climate Change*, 11, 613-617.
40. Matthews, H. D., Tokarska, K. B., Rogelj, J., Forster, P., Hausteiner, K., Smith, C. J., MacDougall, A. H., **Mengis, N.**, Sippel, S. and Knutti, R. (2021) An integrated approach to quantifying uncertainties in the remaining carbon budget. *Communications Earth and Environment*, 2, 1-11.
41. Matthews, H. D., Tokarska, K. B., Nicholls, Z. R. J., Rogelj, J., Canadell, J. G., Friedlingstein, P., Frölicher, T. L., Forster, P. M., Gillett, N. P., Ilyina, T., Jackson, R. B., Jones, C. D., Koven, C., Knutti, R., MacDougall, A. H., Meinshausen, M., **Mengis, N.**, Séférian, R., and Zickfeld, K. (2020) Opportunities and challenges in using carbon budgets to guide climate policy. *Nature Geoscience*, 13, 769-779.
42. Goodwin, P., **Leduc, M.**, **Partanen, A.-I.**, Matthews, H. D. and Rogers, A. (2020) A computationally efficient model for probabilistic spatial warming projections constrained by history matching and pattern scaling. *Geoscientific Model Development*, 13, 5389-5399.
43. MacDougall, A. H., Frölicher, T., Jones, C. D., Rogelj, J., Matthews, H. D., Zickfeld, K., Arora, V. K., Barrett, N. J., Brovkin, V., Burger, F. A., Eby, M., Eliseev, A. V., Hajima, T., Holden, P. B., Jeltsch-Thömmes, A., Koven, C., Menviel, L., Michou, M., Mokhov, I. I., Oka, A., Séférian, R., Shaffer, G., Sokolov, A., Schwinger, J., Tachiiri, K., Tjiputra, J., Wiltshire, A., and Ziehn, T.

- (2020) Is there warming in the pipeline? A multi-model analysis of the zero emission commitment from CO₂. *Biogeosciences*, 17, 2987-3016.
44. **Mengis, N.**, Keller, D. P., MacDougall, A., Eby, M., Wright, N., Meissner, K. J., Oschlies, A., Schmittner, A., **MacIsaac, A. J.**, Matthews, H. D. and Zickfeld, K. Evaluation of the University of Victoria Earth System Climate Model version 2.10 (UVic ESCM 2.10). *Geoscientific Model Development*, 13, 4183-4204.
 45. **Stewart, B. M.**, Turner, S. E. and Matthews, H. D. (2020) Global warming impacts on potential future ranges of non-human primate species. *Climatic Change*, 162, 2301-2318.
 46. **Mengis, N.** and Matthews, H. D. (2020) Non-CO₂ forcing changes will likely decrease the remaining carbon budget for 1.5°C. *npj Climate and Atmospheric Science*, 3, 19.
 47. **Horen Greenford, D.**, Crownshaw, T., Lesk, C., Stadler, K. and Matthews, H. D. (2020) Shifting economic activity to service sectors will not reduce global environmental impacts. *Environmental Research Letters*, 15, 064019.
 48. **Dickau, M.**, **Guertin, É.**, **Seto, D.** and Matthews, H. D. (2020) Projections of declining outdoor skating availability in Montreal due to global warming. *Environmental Research Communications*, 2, 051001.
 49. Mattauch, L., Matthews, H. D., Millar, R., Solomon, S. and Venmans, F. (2020) Steering the climate system: using inertia to lower the cost of policy: Comment, *American Economic Review*, 110, 1231-1237.
 50. Tokarska, K. B., Schlessner, C.-F., Rogelj, J., Stolpe, M., Matthews, H. D., Pfeiferer, P. and Gillett, N. P. (2019) Recommended temperature metrics for carbon budget estimates, model evaluation and climate policy, *Nature Geoscience*, 12, 964-971.
 51. Jones, C, Frölicher, T., Koven, C., MacDougall, A., Matthews, H. D., Zickfeld, K., Rogelj, J., Tokarska, K., Gillett, N., Ilyina, T., Meinshausen, M., **Mengis, N.**, Seferian, R. and Eby, M. (2019) The Zero Emissions Commitment Model Intercomparison Project (ZECMIP) contribution to C4MIP: Quantifying committed climate changes following zero carbon emissions. *Geoscientific Model Development*, 12, 4375-4385.
 52. **Chavaillaz, Y.**, Roy, P., **Partanen, A.-I.**, Da Silva, L., Bresson, É, Mengis, N., Chaumont, D. and Matthews, H. D. (2019) Exposure to excessive heat and impacts on labour productivity linked to cumulative CO₂ emissions. *Scientific Reports*, 9, 13711.
 53. Teufel, B., Sushama, L., Huziy, O., Diro, G. T., Jeong, D. I., Winger, K., Garnaud, C., de Elia, R., Zwiers, F. W., Matthews, H. D. and Nguyen, V.-T.-V. (2019) Investigation of the mechanisms leading to the 2017 Montreal flood. *Climate Dynamics*, 52, 4193-4206.
 54. **Mengis, N.**, **Partanen, A.-I.**, Jalbert, H. and Matthews, H.D. (2018) 1.5°C carbon budget dependent on carbon cycle uncertainty and future non-CO₂ forcing. *Scientific Reports*, 8, 5831.
 55. Millar, R. J., Fuglestedt, J. S., Grubb, M., Rogelj, J., Skeie, R. B., Friedlingstein, P., Forster, P. M., Frame, D., Matthews, H. D. and Allen, M. R. (2018) Reply to 'Interpretations of the Paris climate target'. *Nature Geoscience*, 11, 222.
 56. Hienola, A., **Partanen, A.-I.**, Pietikainen, J.-P., O'Donnell, D., Korhonen, H., Matthews, H. D. and Laaksonen, A. (2018) The impact of aerosol emissions on the 1.5°C pathways. *Environmental Research Letters*, 13, 044011.
 57. **Partanen, A.-I.**, **Landry, J.-S.** and Matthews, H. D. (2018) Climate and health implications of future aerosol emission scenarios. *Environmental Research Letters*, 13, 024028.
 58. Matthews, H. D., Zickfeld, K., Knutti, R. and Allen, M. R. (2018) Focus on cumulative emissions, global carbon budgets and the implications for climate mitigation targets. *Environmental Research Letters*, 13, 010201.

59. Millar, R. J., Fuglestedt, J. S., Grubb, M., Rogelj, J., Skeie, R. B., Friedlingstein, P., Forster, P. M., Frame, D., Matthews, H. D. and Allen, M. R. (2017) Emissions budgets and pathways consistent with limiting warming to 1.5°C. *Nature Geoscience*, 10, 741-747.
60. Haustein, K., Allen, M. R., Forster, P. M., Otto, F. E. L., Mitchell, D. M., Matthews, H. D. and Frame, D. (2017) A robust real-time Global Warming Index. *Scientific Reports*, 7, 15417.
61. **Brault, M.-O.**, Matthews, H. D. and Mysak, L. A. (2017) The importance of terrestrial weathering changes in multi-millennial recovery of the global carbon cycle: a two-dimensional perspective. *Earth System Dynamics*, 8, 455-475.
62. **Partanen, A.-I.**, Leduc, M. and Matthews, H. D. (2017) Seasonal climate change patterns due to cumulative CO₂ emissions. *Environmental Research Letters*, 12, 075002.
63. Matthews, H. D., **Landry, J.-S.**, **Partanen, A.-I.**, Allen, M., Eby, M., Forster, P., Friedlingstein, P. and Zickfeld, K. (2017) Estimating carbon budgets for ambitious mitigation targets. *Current Climate Change Reports*, 3, 69-77.
64. **Landry, J.-S.**, **Partanen, A.-I.** and Matthews, H. D. (2017) Carbon cycle and climate effects of forcing from fire-emitted aerosols. *Environmental Research Letters*, 12, 025002.
65. **Brault M.-O.**, Mysak L. A. and Matthews H. D. (2017) Carbon-cycle implications of terrestrial weathering changes since the last glacial maximum. *FACETS*, 2, 267-285.
66. **Landry, J.-S.** and Matthews, H. D. (2017) The global pyrogenic carbon cycle and its impact on the level of atmospheric CO₂ over past and future centuries. *Global Change Biology*, doi:10.1111/gcb.13603.
67. **Landry, J.-S.**, Parrott, L., Price, D. T., Ramankutty, N. and Matthews, H. D. (2016) Modelling long-term impacts of mountain pine beetle outbreaks on merchantable biomass, ecosystem carbon, albedo, and radiative forcing. *Biogeosciences*, 13, 5277-5295.
68. **Partanen, A.-I.**, Keller, D. P., Korhonen, H. and Matthews, H. D. (2016) Impacts of sea spray geoengineering on marine biogeochemistry. *Geophysical Research Letters*, 43, 10.1002/2016GL070111.
69. **Leduc, M.**, Matthews, H. D. and De Elia, R. (2016) Regional estimates of the Transient Climate Response to cumulative CO₂ Emissions. *Nature Climate Change*, 6, 474-478.
70. Zickfeld, K., MacDougall, A. H. and Matthews, H. D. (2016) On the proportionality between global temperature change and cumulative CO₂ emissions during periods of net negative CO₂ emissions. *Environmental Research Letters*, 055006.
71. **Graham, T. L.**, Matthews, H. D. and Turner, S. E. (2016) Evaluating climatic changes in regions of non-human primate habitat. *International Journal of Primatology*, 37, 158-174.
72. **Landry, J.-S.** and Matthews, H. D. (2016) Non-deforestation fire vs. fossil fuel combustion: the source of CO₂ emissions affects the global carbon cycle and climate responses. *Biogeosciences*, 13, 2137-2149.
73. **Landry, J.-S.**, Price, D. T., Ramankutty, N., Parrott L. and Matthews, H. D. (2016) Implementation of a Marauding Insect Module (MIM, version 1.0) into the Integrated Biosphere Simulator (IBIS, version 2.6 b4) dynamic vegetation-land surface model. *Geoscientific Model Development*, 9, 1243-1261.
74. **Simmons, C.** and Matthews, H. D. (2016) Assessing the implications of human land-use change for the Transient Climate Response to cumulative carbon Emissions. *Environmental Research Letters*, 11, 035001.
75. **Simmons, C. T.**, Matthews, H. D. and Mysak, L. A. (2016) Deglacial climate, carbon cycle and ocean chemistry changes in response to a terrestrial carbon release. *Climate Dynamics*, 46, 1287-1299.
76. Matthews, H. D. (2016) Quantifying historical carbon and climate debts. *Nature Climate Change*, 6, 60-64.

77. Fyke, J. G. and Matthews, H. D. (2015) Probabilistic modelling of cumulative carbon emissions and long-term planetary warming. *Environmental Research Letters*, 10, 125003.
78. **Leduc, M.**, Matthews, H. D. and de Elia, R. (2015) Quantifying the limits of a linear temperature response to cumulative CO₂ emissions. *Journal of Climate*, 28, 9955-9968.
79. MacDougall, A. H., Zickfeld, K., Knutti, R. and Matthews, H. D. (2015) Sensitivity of carbon budgets to permafrost carbon feedbacks and non-CO₂ forcings. *Environmental Research Letters*, 10, 125003.
80. **Moore, T. R.**, Matthews, H. D., **Simmons, C. T.** and **Leduc, M.** (2015) Quantifying changes in extreme weather events in response to global temperature increases. *Atmosphere-Ocean*, 53, 412-425.
81. **Landry, J.-S.**, Matthews, H. D. and Ramankutty, N. (2015) Global carbon cycle and temperature impacts of future changes in fire regime. *Climatic Change*, 133, 179-192.
82. **Gignac, R.** and Matthews, H. D. (2015) Allocating a 2°C cumulative carbon budget to countries. *Environmental Research Letters*, 10, 075004.
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94. **Simmons, C.**, Matthews, H. D. and Mysak, L. (2013) Investigating the natural carbon cycle since 8 kyr BP using an intermediate complexity model. *Atmosphere-Ocean*, 51, 187-212.
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96. Matthews, H. D., Solomon, S. and Pierrehumbert, R. (2012) Cumulative carbon as a policy framework for achieving climate stabilization. *Philosophical Transactions of the Royal Society A*, 370, 4365-4379.
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Other Refereed Contributions

1. Future Earth, The Earth League, WCRP (2021). 10 New Insights in Climate Science 2021. Stockholm <https://doi.org/10.5281/zenodo.5639539> (Matthews, H. D., Lead Author, Insight 1)
2. Gulev, S. K. et al. (2021) Changing state of the climate system. In: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Masson-Delmotte, V., P. et al., (eds), Cambridge University Press, Cambridge, U.K. (Matthews, H. D., Contributing Author)
3. Canadell, J. P. et al. (2021) Global carbon and other biogeochemical cycles and feedbacks. In: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Masson-Delmotte, V., P. et al., (eds), Cambridge University Press, Cambridge, U.K. (Matthews, H. D., Contributing Author)
4. Forster, P. et al. (2021) The Earth's energy budget, climate feedbacks and climate sensitivity. Gulev, S. K. et al. (2021) Changing state of the climate system. In: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Masson-Delmotte, V., P. et al., (eds), Cambridge University Press, Cambridge, U.K. (Matthews, H. D., Review Editor)
5. Gibson, R. B., Péloffy, K., **Greenford, D. H.**, Doelle, M., Matthews, H. D., Holz, C., Staples, K., Wiseman, B. and Grenier, Frédérique (2019) *From Paris to Projects: Clarifying the implications of Canada's climate change mitigation commitments for the planning and assessment of projects and strategic undertakings*, Report to Metcalf Foundation, 233pp.
6. Potvin, C. et al. (2017) *Re-Energizing Canada: Pathways to a Low-Carbon Future*, Natural Resources Canada and Sustainable Canada Dialogues. (Matthews, H. D., lead author).
7. Matthews, H. D. and **Lamontagne, C.** (2017) Global Climate Models. In: *The International Encyclopedia of Geography: People, the Earth, Environment, and Technology*, ISBN: 9781118786352.
8. Ciais, P. and Sabine, C. et al. (2013) Chapter 6: Carbon and other biogeochemical cycles. In: *Working Group I Contribution to the IPCC Fifth Assessment Report Climate Change 2013: The Physical Science Basis*, Cambridge University Press, Cambridge, U.K. (Matthews, H. D., contributing author).
9. Bindoff, N. and Stott, P. et al. (2013) Chapter 10: Detection and attribution of climate change: from global to regional. In: *Working Group I Contribution to the IPCC Fifth Assessment Report Climate Change 2013: The Physical Science Basis*, Cambridge University Press, Cambridge, U.K. (Matthews, H. D., contributing author).
10. Collins, M. and Knutti, R. et al. (2013) Chapter 12: Long-term climate change: projections, commitments and irreversibility. In: *Working Group I Contribution to the IPCC Fifth Assessment Report Climate Change 2013: The Physical Science Basis*, Cambridge University Press, Cambridge, U.K. (Matthews, H. D., contributing author).

11. Solomon, S., et al. (2011) *Climate Stabilization Targets: Emissions, Concentrations and Impacts over Decades to Millennia*, The National Academies Press, Washington, D.C. (Matthews, H. D., co-author)
12. Matthews, H. D. and Keith, D. (2009) Geoengineering. *The Oxford Companion to Global Change*, Ed. David Cuff and Andrew Goudie, Oxford University Press, Oxford, U.K.
13. Meehl, G. A., Stocker, T. F. et al. (2007) Chapter 10: Global Climate Projections. In: *Climate Change 2007: The Physical Science Basis*, Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge, U.K. (Matthews, H. D., contributing author)

Non-Refereed Publications and Op-Eds

1. Garard, J. and Matthews, H. D. (2024) Honest dialogue is needed to help build consensus around solar radiation modification technology. *The Conversation*, May 2024.
2. Matthews, H. D. and Dickau, M. (2024) How global warming is reshaping winter life in Canada. *The Conversation*, February 2024.
3. Matthews, H. D. (2023) COP28: The scientific basis for a rapid fossil fuel phase out. *The Conversation*, December 2023.
4. Matthews, H. D., Koch, A., Luers, A. and Zickfeld, K. (2023) Temporary carbon storage in forests has climate value — but we need to get the accounting right. *The Conversation*, September 2023.
5. Matthews, H. D. and Galbraith, E. (2022) Ending the climate crisis has one simple solution: stop using fossil fuels. *The Conversation*, November 2022.
6. Bjørn, A., Matthews, H. D., Brander, M. and Lloyd, S. M. (2022) Most companies buying renewable energy certificates aren't actually reducing emissions. *The Conversation*, June 2022.
7. Matthews, H. D., Luers, A. and Zickfeld, K. (2022) Planting trees can help the climate, but only if we also stop burning fossil fuels. *The Conversation*, March 2022.
8. Matthews, H. D. and Peters, G. (2021) Climate clock reset show the world is one year closer to 1.5 C warming threshold. *The Conversation*, November 2021.
9. Ubalijoro, E., Matthews, H. D. and Carr, G. (2021) Digital tech could help save us from climate catastrophe – or make it worse. *CTV News*, November 2021.
10. Ubalijoro, E., Matthews, H. D. and Carr, G. (2021) Mettre les technologies numériques au service du climat, *La Presse*, October 2021.
11. Tokarska K. B. and Matthews, H. D. (2021) Refining the remaining carbon budget. Guest post in *Carbon Brief*, January 2021.
12. Matthews, H. D. and Tokarska K. B. (2021) New research suggests 1.5C climate target will be out of reach without greener COVID-19 recovery plans. *The Conversation*, January 2021.
13. Matthews, H. D., Peters, G., Allen, M. and Forster, P. (2018) Climate Clock: Counting down to 1.5°C. *The Conversation*, December 2018.
14. Matthews, H. D. and Potvin, K. (2018) Yes, there is something you can do to fight climate change. *Montreal Gazette*, November 2018.
15. Greenford, D. H. and Matthews, H. D. (2018) Canada's next budget update should include carbon. *The Conversation*, April 2018.
16. Matthews, H. D. and Greenford, D. H. (2018) Good climate policy is incompatible with expanding fossil fuel extraction. *Ricochet*, March 2018.
17. Frame, D. and Matthews, D. (2017) Keeping global warming to 1.5 degrees: really hard, but not impossible. *The Conversation*, September 2017.

18. Matthews, D. and Potvin, C. (2017) Some progress toward low-carbon economy, much more needed. *Policy Options*, June 2017.
19. Matthews, D. (2017) Le transition vers les énergies sobres en carbone est inéluctable. *La Presse*, June 2017.
20. Stoett, P. and Matthews, H. D. (2016) Paris, Marrakech and you: the battle against climate change. *Montreal Gazette*, November 2016.
21. Matthews, H. D. (2016) Montreal emissions targets for 1.5°C and 2°C global warming. *Office de Consultations Public de Montreal*, submitted to the public consultation on emissions targets, February 2016.
22. Matthews, H. D. (2015) After the Paris climate deal, change is now up to all of us. *Montreal Gazette*, December 2015.
23. Matthews, H. D. (2015) We can and should Leap into action against climate change. *Montreal Gazette*, October 2015.
24. Matthews, H. D. (2015) Climate change's big spenders. *Weather Underground Earth Day Blog*, April 2015.
25. Matthews, H. D. (2013) Emissions cuts made now fight global warming immediately. *The Conversation*, May 2013.
26. Open Letter to Minister Joe Oliver, re: Alberta tar sands development. Co-signatory, May 2013.
27. Matthews, H. D. (2013) Use less fossil fuel, save outdoor hockey. *Montreal Gazette*, Feb 2013.
28. Matthews, H. D. (2013) Adieu, les patinoires extérieurs? *Le Devoir*, February 2013.
29. Matthews, H. D. (2012) Sandy a warning about global warming. *Montreal Gazette*, Nov 6, 2012.
30. Matthews, H. D. (2012) Le monstre Sandy: étrange progéniture d'un climat en mutation? *Le Devoir*, November 2012.
31. Matthews, H. D. (2012) Le plan Harper, un développement non durable. *Le Devoir*, April 2012.
32. Matthews, H. D. (2012) Le plan Harper, un développement non durable. *La Presse*, April 2012.
33. Matthews, H. D. and Srivastava, P. (2011) Canada's complacency on climate change is an embarrassment. *Montreal Gazette*, Op-Ed, July 2011.
34. Matthews, H. D. (2009) Sommet de Copenhague - Un Climat Favorable. Op-Ed in *Le Devoir*, December 2009.

Presentations, Seminars and Workshops

INVITED PRESENTATIONS, PANELS AND SEMINARS

1. From extreme weather attribution to climate litigation: a conversation with Dr. Fredi Otto
 - Invited Panel Moderator, June 2024.
2. How digital disruptions are changing our social and environmental systems.
 - Invited Panelist, Hope and Agency: Sustainability Across Disciplines Conference, March 2024.
3. Effective TCRE and non-CO₂ forcing
 - Invited Presentation, TCRE and Committed Warming Workshop, Bristol, UK, January 2024.
4. Accounting for the climate benefit of temporary carbon storage in nature.
 - Invited Presentation, IEA Bioenergy Task 45 Workshop on temporary carbon storage, December 2023.
5. Cumulative emissions, the global carbon budget and relevance to temporary carbon storage.
 - Invited Presentation, IEA Bioenergy Task 45 Workshop on temporary carbon storage, November 2023.
6. Nature-based solutions: important contribution to climate mitigation or dangerous distraction?
 - Invited Seminar, Federal University of Rio Grande do Norte, July 2023.

7. Nature-based solutions: important contribution to climate mitigation or dangerous distraction?
 - Invited Keynote, 2nd Annual Environment and Sustainability Research Spring Workshop, Thompson Rivers University, May 2023.
8. Climate change across disciplines
 - Invited Panel Moderator, Research that Matters Conference, March 2023.
9. Temporary carbon storage can lower peak warming in a well-below 2°C scenario
 - Invited Seminar, UVic Model Group Seminar Series, June 2022.
10. Will technology save us? Prospects for effective and equitable responses to the climate crisis
 - Invited Panel Moderator, Sustainability in the Digital Age seminar series, June 2022.
11. Unlocking the Power of digital technologies for Nature-based Solutions
 - Invited Panelist, Global Council for Science and the Environment, June 2022.
12. Landscape analysis of carbon and water in Canada
 - Invited Panelist, Canadian Science Policy Conference, Ottawa, November 2021.
13. Extreme inequality and climate breakdown
 - Invited Panelist, Concordia Student Union Panel Series, Montreal, November 2021.
14. Climate change and the remaining carbon budget
 - Invited Lecture, Hai Study Group Lecture Series, Montreal, November 2021.
15. Sustainability in the Digital Age
 - Invited Panelist, Montreal Economic Forum of the Americas, Montreal, September 2021.
16. Key messages from the IPCC 6th Assessment Report
 - Invited Panelist, Ouranos IPCC Report Press Conference, Montreal, September 2021.
17. Implications of the remaining carbon budget for climate policy and emission targets
 - Invited Keynote Presentation, Sustainability and the Climate Crisis: Annual Sustainability Across Disciplines Conference, Montreal, March 2021.
18. Implications of the remaining carbon budget for climate targets and policies
 - Invited Seminar, School of Earth and Ocean Sciences, U. Victoria, February 2021.
19. Implications of the remaining carbon budget for climate targets and policies
 - Invited Seminar, Ouranos Research Consortium, Montreal, February 2021.
20. Climate models and Canadian scenarios – taking stock and planning for a warmer future
 - Invited Seminar, Balsillie School of International Affairs, October 2020.
21. Overview of climate change context for aviation CO₂ reductions
 - Invited Presentation, International Civil Aviation Organization (ICAO), April 2020.
22. Implications of the remaining carbon budget for climate policy and emission targets
 - Invited Keynote Presentation, Sustainability and the Climate Crisis: Annual Sustainability Across Disciplines Conference, Montreal, March 2020 (Cancelled due to COVID-19)
23. Will global warming mean the end of humanity?
 - Walrus Talks Survival, Montreal, November 2019.
24. A scientific case for fossil fuel divestment
 - Invited Presentation, Concordia University Senate, May 2019.
25. A framework for using the TCRE to estimate the remaining carbon budget
 - Invited Presentation, European Geophysical Union Conference, Vienna, Austria, April 2019.
26. The remaining carbon budget: Implications for Canada's emissions targets
 - Invited Presentation, National Climate Change Science and Knowledge Priorities Workshop, February 2019.
27. Application of the TCRE to estimating the remaining carbon budget
 - Invited Presentation, International Workshop on the Remaining Carbon Budget, Jan 2019.
28. Limiting warming to “Well below 2°C”

- Invited Presentation, Shift for Climate: Les forces vives en action vers la COP24, Montreal, December 2018.
29. A scientific case for ambitious climate action
 - Invited Seminar, CIREQ Seminar Series, Université du Québec a Montréal, November 2018.
 - Invited Seminar, Department of Physics Seminar Series, Université de Montréal, Oct 2018.
 30. Sharing the global carbon pie: Scientific and ethical challenges in international climate negotiations
 - Invited Presentation, International Environmental Agreements - Bridging the Gap Workshop, Montreal, September 2018.
 31. Extending the TCRE Framework
 - Invited Presentation, WCRP Workshop on Extending the Carbon Cycle Feedback Framework, Bern, Switzerland, April 2018.
 32. Implications du budget d'émissions mondiales sur les cibles nationales
 - Invited Presentation, Ouranos Annual Symposium, October 2017.
 33. Towards international equity in climate mitigation efforts
 - Keynote Speaker, Canadian Society for Ecological Economics Conference, Montreal, October 2017.
 - Keynote Speaker, Sustainability Across Disciplines Conference, Montreal, March 2017.
 34. Global warming and the 2-degree target
 - Invited Speaker, Moving the Shakers youth climate change event, January 2017.
 35. After the Paris talks: matching emissions targets to ambitious climate goals
 - Invited Speaker, Divest Concordia Conference, October 2016.
 - Invited Speaker, St. James Literary Society, Montreal, September 2016.
 - Invited Speaker, Dawson College Social Science Week, Montreal, February 2016.
 36. Science en support d'un budget carbone pour la Ville de Montreal
 - Invited Speaker, City of Montreal carbon budget meeting; May 2016.
 37. Au-Delà de COP21: défis et opportunités d'une cible de 1,5 degrés
 - Invited Speaker, Development and Peace, Montreal, March 2016.
 38. Countdown to 2°C
 - Invited Speaker, Climate Clock projection launch, April 2016.
 - Invited Speaker, Montreal Summit on Innovation, Montreal, November 2015.
 39. 2 degrees of climate change
 - Invited Speaker, Eco-Quartier NDG, Montreal, November 2015.
 40. Cumulative emissions, climate debts and the 2°C target
 - Invited Seminar, Dawson College, Montreal, November 2015.
 41. Cumulative emissions, climate debts and the 2°C target
 - Invited Seminar, Department of Geography, Planning and Environment, Concordia University, September 2015.
 42. Concordia climate lab research update
 - Invited Presentation, UVic ESCM Developers Workshop, Victoria, May 2015.
 43. Climate change and sustainability Science
 - Invited Presentation, Americana Conference, Montreal, March 2015.
 44. The responsibility of nations: historical contributions to observed warming
 - Invited Speaker, NCSE Energy and Climate Change Conference, Washington DC, Jan 2015.
 45. Quantifying historical climate debts among nations
 - Invited Presentation, American Geophysical Union Fall Meeting, San Francisco, Dec 2014.
 46. Cumulative carbon budgets for climate mitigation targets

- Invited Presentation, International Workshop on Risk Information for Climate Change, Yokohama, Japan, November 2014.
- 47. Global warming: Hope or Despair?
 - Invited Speaker, “Walrus Talks Climate,” Ottawa, April 2014.
- 48. National contributions to observed global warming
 - Invited Seminar, Ouranos Research Consortium, Montreal, April 2014.
- 49. Cumulative carbon as a new framework for climate mitigation
 - Invited Seminar, MIT Department of Earth and Planetary Sciences, March 2013.
 - Invited Seminar, Center for Global Change Science, U. Toronto, February 2013.
- 50. Global warming in the new millennium
 - Keynote Speaker, Concordia-Siena Globalization Conference, Montreal, March 2012.
 - Ouranos Consortium, Montreal, June 2011.
- 51. Global climate changes and impacts from ongoing greenhouse gas emissions
 - Managing Climate Change Risks for Pension Investment Funds, Montreal, October 2011.
- 52. The oceans and committed climate warming
 - National Conference on Science, Policy, and the Environment, Wash. DC, January 2011.
- 53. Cumulative carbon and the climate mitigation challenge
 - Department of Biology, Concordia University, February 2011.
 - Department of Geography, University of Montreal, January 2011.
 - Institute for Sustainable Energy, Environment and Economy, U. of Calgary, November 2010.
 - Department of Earth and Planetary Sciences, McGill University, October 2010.
- 54. Potential for mitigation via CO₂ emissions reductions
 - Royal Society discussion meeting: “Geoengineering - taking control of our planet's climate,” London, U.K., November 2010.
- 55. Geoengineering
 - Climate Change Conference 2010, Toronto, ON, August 2010.
- 56. Climate change: Science and Solutions.
 - Marionopolis College Green Week Speaker Series, Montreal, QC, October 2009.
- 57. What does it take to stabilize climate? Insights from Earth system models
 - Department of Geography, McGill University, April 2009.
 - Institute for Atmospheric and Climate Science, ETH Zurich, March 2009.
 - Department of Geography, University of Toronto, November 2008.
- 58. Solving the climate problem
 - AlumNights Panel Series, Montreal, Quebec, November 2008.
- 59. Quantifying carbon sinks and feedbacks to climate using Earth system models
 - CIFAR Oceans Nitrogen Workshop, Toronto, Ontario, November 2008.
- 60. Solving the climate problem
 - AlumNights Panel Series, Montreal, Quebec, November 2008.
- 61. What does it take to stabilize climate?
 - Cutting Edge Lectures, McGill University, October 2008.
- 62. Carbon-cycle feedbacks increase the likelihood of a warmer future
 - 10th International Workshop on Next Generation Climate Models for Advanced High Performance Computing Facilities, Waikiki, Hawaii, February 2008.
- 63. Climate change: Science and solutions
 - Department of Geography, Planning and Environment Seminar Series, Concordia University, Montreal, QC, March 2008.
 - Montreal Inter-University Seminar on the History and Philosophy of Science, Montreal, QC, November 2007.

64. Transient climate-carbon simulations of planetary geoengineering
 - American Geophysical Union 2007 Fall Meeting, San Francisco, CA, December 2007.
 - NASA/AMES Workshop on Managing Solar Radiation, Moffet Field, CA, November 2006.
65. Geoengineering
 - Earth and Environmental Systems Institute Seminar Series, Penn State University, University Park, PA, November 2007.
66. Coupled climate-carbon cycle simulations using the UVic ESCM
 - Coupled Climate Carbon Cycle Model Intercomparison Project (C⁴MIP) Workshop, Exeter, U.K., October, 2006.
67. Coupling climate and the carbon cycle: Implications for future climate change.
 - Geosciences Department, Penn State University, University Park, PA, September 2006.
 - College of Oceanic and Atmospheric Sciences, Oregon State U., Corvallis, OR, April 2006.
 - Department of Global Ecology, Carnegie Institution, Stanford, CA, March 2006.
 - Department of Geography, Planning and Environment, Concordia University, Montreal, QC, February 2006.
68. Modeling terrestrial carbon cycle dynamics and feedbacks to climate.
 - Department of Atm. and Oceanic Sciences, McGill University, Montreal, QC, April 2005.
69. The terrestrial carbon cycle and the role of historical land cover change in the UVic Earth System Climate Model.
 - American Geophysical Union/Canadian Geophysical Union 2004, Montreal, QC, May 2004.

OTHER CONFERENCE PRESENTATIONS AND SEMINARS

1. Temporary nature-based carbon removal can lower peak warming in a well-below 2°C scenario
 - European Geophysical Union Annual General Assembly (virtual), May 2022.
2. A new framework for understanding and quantifying uncertainties in the remaining carbon budget
 - European Geophysical Union Annual General Assembly (virtual), May 2020.
3. Carbon budget estimates for the 1.5 degree target
 - 1.5 Degrees: Meeting the challenges of the Paris Agreement, Oxford, September 2016.
4. Impact of future climate change on non-human primate species
 - Annual Meeting of the International Primatological Society, Chicago, August 2016.
5. Allocating a 2°C carbon budget to nations
 - American Geophysical Union Fall Meeting, San Francisco, December 2014.
6. National climate footprints: country contributions to observed global warming
 - Canadian Meteorology and Oceanography Society Meeting, Saskatoon, SK, June 2013.
7. Identifying regional vulnerabilities of primate populations to continued global warming
 - International Primatology Society Meetings, Cancun, Mexico, August 2012.
8. Climate response to cumulative greenhouse gas and aerosol emissions
 - Canadian Meteorology and Oceanography Society Meeting, Montreal, QC, June 2012.
9. Cumulative carbon as a policy framework for achieving climate stabilization
 - Canadian Meteorology and Oceanography Society Meeting, Victoria, BC, June 2011.
 - European Geophysical Union Annual General Assembly, Vienna, Austria, April 2011.
10. Impacts of climate change on non-human primates
 - International Primatology Society Meetings, Kyoto, Japan, September 2010
11. Cumulative carbon emissions and committed climate warming
 - CMOS-CGU Joint Assembly, Ottawa, ON, June 2010.
12. Climate-carbon sensitivity: a new measure of the climate response to carbon emission

- IAMAS-IAPSO-IACS Joint Assembly, Montreal, QC, July 2009.
- 13. Sensitivity of ocean acidification to geoengineered climate stabilization
 - IARU International Climate Change Congress, Copenhagen, Denmark, March 2009.
- 14. Stabilizing climate requires near-zero emissions
 - European Geophysical Union Annual General Assembly, Vienna, Austria, April 2008.
- 15. Coupling climate and the carbon cycle: Implications for future climate change.
 - Department of Atmospheric Physics, Oxford University, Oxford, U.K., March 2006
 - Hadley Centre for Climate Prediction and Research, Exeter, U.K., March 2006.
 - Dialogues in Geography Series, University of Calgary, Calgary, AB, November 2005.
- 16. Modeling terrestrial carbon cycle dynamics and feedbacks to climate.
 - Topics in Atmospheric and Oceanic Sciences Seminar Series, Canadian Centre for Climate Modelling and Analysis, Victoria, B.C., May 2005.
 - Frontier Research Centre for Global Change, Yokohama, Japan, May 2005.
- 17. Primary productivity control of simulated carbon cycle-climate feedbacks.
 - European Geophysical Union Annual General Assembly, Vienna, Austria, April 2005.
- 18. Simulating carbon-cycle feedbacks with the UVic Earth System Climate Model.
 - Coupled Climate Carbon Cycle Model Intercomparison Project (C⁴MIP) Workshop, Berkeley, CA, December 2004.
- 19. Terrestrial carbon cycle dynamics under recent and future climate change.
 - Climate Variability and Predictability Workshop, Victoria, BC, February 2004.
- 20. Natural and anthropogenic climate change: Incorporating historical land cover change, vegetation dynamics and the global carbon cycle
 - International Union of Geodesy and Geophysics General Assembly, Japan, July 2003.
- 21. The UVic Earth System Climate Model: A tool for model-based integrated assessment?
 - Coupling Climate and Economic Dynamics, Montreal, QC, May 2003.
- 22. Natural and anthropogenic climate change over the past 300 years: The role of historical land cover change
 - Canadian Geophysical Union Conference, Banff, AB, May 2003.
 - Canadian Meteorological and Oceanographic Society Congress, Victoria, BC, April 2003.
- 23. Equilibrium and transient simulations of land-use and CO₂ forcing of climate.
 - European Geophysical Society XXVII General Assembly, Nice, France, April 2002.

POSTER PRESENTATIONS

1. When will we reach 1.5°C of global warming?
 - American Geophysical Union Fall Meeting, New Orleans, December 2017
 - Canadian Meteorological and Oceanographic Society Meeting, Ottawa, July 2017
2. Allocating a 2°C carbon budget to countries
 - American Geophysical Union Fall Meeting, San Francisco, December 2014.
3. Climate response to cumulative emissions of greenhouse gases and aerosols
 - Planet Under Pressure (PLAN) Conference, London, England, March 2012.
4. Climate response to carbon emissions
 - IARU International Climate Change Congress, Copenhagen, Denmark, March 2009.
5. Climate commitment and the 2 degree temperature target
 - American Geophysical Union 2008 Fall Meeting, San Fransisco, CA, December 2008.
6. Transient climate-carbon simulations of planetary geoengineering
 - European Geophysical Union Annual General Assembly, Vienna, Austria, April 2008.
7. Climate sensitivity to carbon emissions

- American Geophysical Union 2007 Fall Meeting, San Francisco, CA, December 2007.
- 8. Carbon cycle feedbacks increase the likelihood of a warmer future
 - American Geophysical Union 2006 Fall Meeting, San Francisco, CA, December 2006.
- 9. Carbon cycle feedbacks amplify effect of climate sensitivity uncertainty on future warming
 - European Geophysical Union Annual General Assembly, Vienna, Austria, April 2006.
- 10. Allowable emissions for CO₂ stabilization are determined by future carbon cycle changes
 - European Geophysical Union Annual General Assembly, Vienna, Austria, April 2006.

Research Funding

Research Grants Awarded

1. NSERC Discovery Grant
 - Granting Agency: Natural Sciences and Engineering Research Council of Canada
 - Title: Assessing the climate and policy implications of temporary nature-based carbon storage
 - Principal Investigator: H. Damon Matthews
 - Value: \$375,000 (\$75,000 / year) Period Held: 2024-2028.
2. Volt-age Seed Project Funding
 - Granting Agency: Concordia University, Canadian First Excellence Research Fund
 - Title: Building a data collaborative for tracking aggregate GHG emissions in Greater Montréal
 - Principal Investigator: H. Damon Matthews
 - Value: \$200,000 (\$100,000 / year) Period Held: 2024-2026.
3. Climate Action and Awareness Fund (co-applicant)
 - Granting Agency: Environment and Climate Change Canada
 - Title: Quantifying the climate benefit of nature-based solutions in Canada
 - Principal Investigator: Andrew MacDougall
 - Value: \$1,557,149 (25%) Period Held: 2022-2026.
4. NSERC Alliance Grant (co-applicant)
 - Granting Agency: Natural Sciences and Engineering Research Council of Canada
 - Title: Meeting 30 x 30 and the Paris Agreement: An inclusive framework leveraging digital solutions for effective nature-based solutions in Canada
 - Principal Investigator: Eliane Ubalijoro
 - Value: \$256,623 (15%) Period Held: 2022-2023.
5. Research Contract
 - Granting Agency: Microsoft Corporation
 - Title: Climate impacts of temporary land-based carbon storage
 - Principal Investigator: H. Damon Matthews
 - Value: \$216,000 Period Held: 2021-2023.
6. Research Contract (co-applicant)
 - Granting Agency: Microsoft Corporation
 - Title: Landscape analysis of carbon and water in Canada
 - Principal Investigator: Eliane Ubalijoro
 - Value: \$300,000 (15%) Period Held: 2021-2022.
7. NSERC Collaborative Research and Training Experience
 - Granting Agency: Natural Sciences and Engineering Research Council of Canada

- Principal Investigator: H. Damon Matthews
 - Value: \$20,000 Period Held: 2012
25. FQRNT Regroupement Strategique (co-applicant)
- Granting Agency: Fonds Québécois de la Recherche sur la Nature et les Technologies
 - Title: Global Environmental and Climate Change Center (GEC3)
 - Principal Investigator: Gail Chmura (McGill)
 - Value: \$300,000 (5%) Period Held: 2011-2012
26. CFCAS Project Grant
- Granting Agency: Canadian Foundation for Climate and Atmospheric Sciences
 - Title: Probabilistic forecasts of the viability of future Canadian carbon sinks
 - Principal Investigator: H. Damon Matthews
 - Value: \$190,780. Period Held: 2008-2009
27. NSERC Discovery Grant
- Granting Agency: Natural Sciences and Engineering Research Council of Canada
 - Title: Quantifying uncertainties in future carbon cycle feedbacks
 - Principal Investigator: H. Damon Matthews
 - Value: \$110,000 Period Held: 2007-2011
28. FQRNT Nouveaux Chercheurs
- Granting Agency: Fonds Québécois de la Recherche sur la Nature et les Technologies
 - Title: Probabilistic assessment of future terrestrial carbon cycle and climate changes
 - Principal Investigator: H. Damon Matthews
 - Value: \$75,000 Period Held: 2007-2008

Leadership, Outreach and Engagement Activities

Academic Leadership Positions

1. Program Director, NSERC CREATE in Leadership in Environmental and Digital Innovation for Sustainability (LEADS), Concordia University 2020 – Present
2. Science Director, Sustainability in the Digital Age, Future Earth and Concordia University 2021 – Present
3. Institutional Representative for Concordia, Global Council for Science and the Environment (GCSE) 2021 – 2022
4. Interim Global Hub Director, Future Earth Canadian Global Hub 2020
5. Chair, Climate Action Plan Development Committee, Concordia University 2018 – 2019
6. Scientific Liaison for Concordia, Future Earth Montreal Consortium 2016 – 2020

Science Communication Initiatives

1. Co-founder and Science Lead, Climate Clock Project (climateclock.net) 2015 – Present

- Online science visualization of the time remaining until we reach 1.5°C of global warming
- 2. Founder and Science Lead, Pledge to Lead Project (pledgetolead.ca) 2018 – 2021
 - Online platform to track individual carbon footprints and motivate climate actions

Advisory Board Memberships

1. Member, Climate Change Advisory Board, TD Insurance 2019 – Present
2. Scientific Advisor, Rapid Decarbonization Group, Montreal, QC 2018 – Present
3. Member, Comité Scientifique, Le Pacte pour la Transition, Montreal, QC 2018 – 2021

Media Activities

OP-EDS

- 30+ Op-Eds published in *The Conversation* (14), *The Montreal Gazette* (7), *Le Devoir* (4), *La Presse* (3), *Ricochet* (1), *Policy Options* (1) and *CTV News* (1)
(See Non-Refereed Publications for full list)

MEDIA INTERVIEWS AND RESEARCH COVERAGE (SELECTED)

1. 100+ media interview related to general climate science and climate policy developments
 - “Canada in the year 2060” in *MacLean’s Magazine*, August 2023
 - “N.L. says its waters are home to ‘low-carbon’ oil. Scientists say that doesn’t exist, in *CBC News*, March 2023
 - “Amid rising emissions, could congressional republicans help the US reach its climate targets?” in *Inside Climate News*, January 2023
 - “Canadians are in continuing denial of climate change” in *The Hill Times*, November 2022
 - “Objectif 1,5 degré: difficile mais pas impossible” in *La Presse*, July 2022
 - “We must accept we won’t meet 1.5°C climate target” in *New Scientist*, June 2022
 - “La Jour de la Terre en six résolutions” in *La Presse*, April 2022
 - “Can we stop Canada’s thawing permafrost from releasing huge volumes of greenhouse gases? The solution could be wild” in *The Globe and Mail*, November 2021
 - “Ten years to 1.5°C: how climate anxiety is affecting young people around the world – podcast” in *The Conversation*, December 2021
 - “Majority of the world’s oil and gas must stay in the ground, study says” in *The Weather Network*, November 2021
 - “No federal party offers clear path on how to wind down fossil fuel production” in *The Narwhal*, September 2021
 - “Good news: Some climate change impacts are ‘reversible.’ Here’s what that means” in *CBC News*, August 2021
 - “Turning our attention from one crisis to another” in *The Montreal Gazette*, August 2023
 - “Climate Change Is Very Real. But So Much of It Is Uncertain” in *WIRED*, July 17, 2019.
 - “A Green New Deal for Canada: What it means” in *CBC News*, May 10, 2019.
 - “How climate change will have a major impact on hockey’s future” in *The Athletic*, December 7, 2018

- “Earth CO₂ levels: Have we crossed a point of no return?” in *Christian Science Monitor* (and other online news), September 29, 2016.
- Feature interview: “Le comptable de l'atmosphère” (the atmospheric accountant), in *La Presse Plus*, December 30, 2013.
- “‘It's not too late’ to stop climate spiral, Montreal scientist says,” in *The Montreal Gazette*, September 27, 2013.
- Live radio call-in show on “Radio Noon”, *CBC Radio Montreal*, December 2009.

2. 150+ media interviews and journal highlights related to research findings

- New framework for estimating the remaining carbon budget (Matthews et al., 2021), covered by *Concordia NOW*, *La Presse* and others
- Environmental impacts of shifting economic activity to services (Horen Greenford et al, 2020) covered in *Concordia NOW*, *Resilience.org* and other online media
- Annual updates of the Climate Clock (2016 – 2021), covered in *The Weather Network*, *Globe and Mail*, *CTV Montreal*, *City TV*, *Le Monde* and other national and international news
- Economic impacts of extreme heat due to climate change (Chavaillaz et al. 2019), covered in *Le Devoir*, *CTV*, *Science Daily* and others
- New estimate of the remaining carbon budget (Millar et al. 2017), covered by dozens of news networks around the world
- “Fair Shares?”, *Nature News and Views* highlight of Matthews (2016) in *Nature Climate Change*
- Quantifying historical carbon and climate debts among nations (Matthews 2016), covered in *New Scientist*, *Inside Climate News*, *VICE Motherboard* (and other international news)
- Regional climate response to cumulative CO₂ emissions (Leduc et al. 2016), covered in *Ici Radio Canada*, *Métro Montréal*, *VICE Canada* and others
- Climate change impacts on non-human primates (Graham et al. 2016) in *Science Daily* and other online news
- “Are the December emissions pledges up to scratch?”, *Environmental Research Web* highlight Gignac and Matthews (2015) in *Environmental Research Letters*.
- “Climate change: who's the biggest emitter of them all?”, *Environmental Research Web* highlight Matthews et al. (2014) in *Environmental Research Letters*.
- National contributions to historical global warming (Matthews et al. 2014), covered in *New Scientist*, *Bloomberg Business Week*, *the Huffington Post*, *the U.K. Times* (and others)
- Irreversible does not mean unavoidable (Matthews and Solomon, 2013), covered in *Climate Central* and *Huffington Post*
- “Warming climate is bad news for Canadian outdoor skating”, *Environmental Research Web* highlight of Damyanov et al (2012) in *Environmental Research Letters*.
- Effect of climate change on outdoor skating (Damyanov et al., 2012), covered in *New York Times*, *The Guardian*, *Le Monde*, *Toronto Star*, *Globe and Mail*, *National Post*, *PBS Newshour*, *Météo Média* (and other national/international news)
- Infrastructural Emissions Commitment (Davis et al., 2010), covered by *Le Monde*, *CBC News*, *Canwest News* and other international news
- “Of mongooses and men: why aerosol geoengineering could prove risky”, *Environmental Research Web* highlight of Matthews and Turner in *Environmental Research Letters*.
- Carbon Emissions for 2-Degrees Warming (Matthews et al., 2009), covered in *Montreal Gazette*, *Canwest News*, *CBC Radio*, *CBC Television*, *Radio Canada*

- “Stabilizing climate requires near-zero emissions”, AGU Journal Highlight of Matthews and Caldeira (2008) in *Geophysical Research Letters*.
- Climate stabilization requires near-zero emissions (Matthews and Caldeira, 2008), covered in *The Washington Post* (page A1), *New Scientist Environment*, *The Montreal Gazette*, *The Victoria Times Colonist*
- “Evaluating a technological fix for climate”, by Peter G. Brewer, commentary highlighting Matthews and Caldeira (2007) in *Proceedings of the National Academy of Sciences*.
- “A decrease of emission is required to stabilize atmospheric CO₂”, AGU journal highlight of Matthews (2005) in *Geophysical Research Letters*.

Training of Highly Qualified Personnel

Summary of Current and Past Supervision

	Current		Completed		Total
	Supervised	Co-supervised	Supervised	Co-supervised	
Honours students			8	5	13
Masters students	3	3	13	5	24
PhD students	3		3	3	8
Post-docs	2	1	6	6	16
Total	8	4	30	19	61

Current Graduate Students and Post-docs

1. Yisa Ginath Yuh (Post-doctoral Researcher) September 2023 –
 - Co-supervised with Sarah Turner
 - Topic: Climate impacts on Great Ape distribution and behaviour
2. Camilo Edgar Monroy (Post-doctoral Researcher) March 2023 –
 - Horizon Postdoctoral Fellowship
 - Topic: Monitoring effectiveness of nature-based solutions in Canada
3. Rebecca Evans (Post-doctoral Researcher) February 2022 –
 - MITACS Elevate Postdoctoral Fellowship
 - Topic: Modelling the effectiveness of nature-based climate solutions
4. Olivier Chalifour (Ph.D. Student) September 2023 –
 - Topic: Earth-system effects of nature-based climate solutions
5. Mitchell Dickau (Ph.D. Student) September 2020 –
 - NSERC PhD Scholarship
 - Topic: Climate response to fuel-specific greenhouse gas emissions
6. Étienne Guertin (Ph.D. Student) January 2018 –
 - Topic: Modelling climate-socioeconomic feedbacks in a global climate model
7. Anthony Garafoulis-Auger (M.Sc. Student) September 2024 –
 - Topic: Equitable allocation of global and national carbon budgets to cities
8. Alexandria Schmitz (M.Sc. Student) September 2024 –
 - Topic: Implementing carbon and biodiversity credits for tree micro-nurseries

9. Meagan Oxley (M.Sc. Student) September 2023 –
 - Co-supervised with Ursula Eicker
 - Topic: Energy independence in decarbonization / electrification scenarios
10. Faye Sun (M.Sc. Student) September 2022 –
 - Topic: Identifying leverage points for societal change
11. Alana-Dawn Phillips (M.Sc. Student) September 2022 –
 - Co-supervised with Jen Gobby
 - Topic: Indigenous perspectives on nature-based climate solutions
12. Miles Barette-Duckworth (M.Sc. Student) September 2018 –
 - Co-supervised with Leonard Sklar
 - Topic: Effect of weathering of gravel road networks on carbon sequestration.

Completed Graduate Students and Post-docs

POST-DOCTORAL RESEARCHERS

1. Daniel Horen Greenford (Post-doctoral Researcher) 2023
 - Co-supervised with Shannon Lloyd
 - Topic: Climate tests for energy supply projects
2. Seth Wynes (Post-doctoral Researcher) 2020 – 2023
 - SSHRC post-doctoral fellowship
 - Topic: Public understanding of climate change and other global risks
3. Claude-Michel Nzotungicimpaye (Post-doctoral Researcher) 2021-2023
 - Horizon Postdoctoral Fellowship
 - Topic: Quantifying observable climate impacts as a function of cumulative CO2 emissions
4. Alex Koch (Post-doctoral Researcher) 2022
 - Co-supervised with Kirsten Zickfeld, Simon Fraser University
 - Topic: Modelling the effectiveness of nature-based climate solutions
5. Anders Bjørn (Post-doctoral Researcher) 2021 – 2022
 - Topic: Alignment of corporate climate targets with global climate goals
6. Jen Gobby (Post-doctoral Researcher) 2019 – 2021
 - SSHRC post-doctoral fellowship; Co-supervised with Bengi Akbulut
 - Topic: Mechanisms of social change leading to climate action
7. Nadine Mengis 2017 – 2019
 - Horizon post-doctoral fellowship
 - Topic: Carbon budgets for ambitious climate mitigation targets.
8. Yann Chavaillaz 2017 – 2019
 - Co-supervised with Philippe Roy (Ouranos)
 - Topic: Extreme weather and abrupt climate events.
9. Antti-Ilari Partanen 2016 – 2019
 - Emil-Altonen Foundation and FRQNT post-doctoral fellowships
 - Co-supervised with Martin Leduc (Ouranos)
 - Topic: Climate and health effects of aerosol mitigation scenarios.

10. Jean Sébastien Landry 2015 – 2016
 - NSERC post-doctoral fellowship
 - Topic: Modelling disturbances in the climate system.
11. Christopher Simmons 2014 – 2015
 - Topic: Deglacial climate changes, terrestrial carbon cycling and human land-use change.
12. Martin Leduc: 2013 – 2015
 - Co-supervised with Ramon de Elia (Ouranos)
 - Topic: Assessing uncertainties and limits associated with the climate response to cumulative greenhouse gas emissions.

PHD STUDENTS

13. Travis Moore Completed June 2024
 - Topic: Framing extreme precipitation in the context of cumulative emissions
14. Yisa Ginath Yuh Completed September 2023
 - Co-supervised with Sarah Turner
 - Topic: Effect of climate and land-use on great ape distribution and behaviour
15. Maida Hadziosmanovic Completed August 2023
 - SSHRC PhD Scholarship
 - Topic: Corporate contributions to and responsibility for global warming
16. Daniel Horen Greenford Completed September 2022
 - Topic: Climate responsibility and ethics.
17. Marc-Olivier Brault (McGill University) Completed April 2017.
 - Co-supervised with Lawrence Mysak (McGill)
 - Topic: Effect of terrestrial weathering on long-term climate and carbon cycle changes.
18. Christopher Simmons (McGill University) Completed October 2013.
 - Co-supervised with Lawrence Mysak
 - Topic: Carbon cycle dynamics since the last glacial maximum.

MASTER'S STUDENTS

19. Graham Clyne Completed July 2023
 - Topic: Applying machine learning to understand forest carbon stocks in Canada
20. Samantha Mailhot Completed September 2020
 - Co-supervised with Bengi Akbulut
 - Topic: Capacities and barriers to individual climate mitigation.
21. Alexander MacIsaac Completed September 2019
 - Topic: Reversibility of warming caused by non-CO₂ greenhouse gas emissions
22. Caroline-Sophie Gauvreau Completed August 2018
 - Co-supervised with David Greene
 - Topic: Impact of climate change on plant phenology.
23. Tanya Graham Completed January 2018
 - Topic: Quantifying mammalian vulnerability to global climate changes.

24. Étienne Guertin Completed November 2017
 • Topic: Modelling fire as a climate disturbance.
25. Maida Hadziosmanovic Completed August 2017
 • Topic: Assessing corporate responsibility for climate change.
26. Loukia Papadopoulos Completed January 2017
 • Topic: Nationally Appropriate Mitigation Strategies.
27. Trevor Smith Completed January 2017
 • Topic: Impacts of climate change on Quebec viticulture.
28. Daniel Horen Greenford Completed September 2016
 • Topic: Historical national contributions from a range of greenhouse gases and aerosols.
29. Cassandra Lamontagne Completed April 2016
 • Co-supervised with Monica Mulrennan
 • Topic: Impacts of climate change on a coastal First Nations community.
30. Travis Moore Completed September 2013
 • Topic: Quantifying extreme weather events as a function of global mean temperature change.
31. Marc-Olivier Brault (McGill University) Completed August 2012.
 • Co-supervised with Lawrence Mysak
 • Topic: Effect of Pleistocene megafauna on early Holocene climate.
32. Nikolay Damyanov (McGill University) Completed August 2011.
 • Co-supervised with Lawrence Mysak
 • Topic: Effect of winter warming on outdoor skating in Canada.
33. Andrew Pinsonneault Completed August 2011.
 • Topic: Effect of ocean acidification on the marine carbonate cycle.
34. Karen Paquin Completed April 2011.
 • Co-supervised with Jochen Jaeger
 • Topic: Potential for carbon sequestration in boreal forest woodlots.
35. Andrew Ross Completed July, 2010.
 • Title: Probabilistic assessment of the rate of future climate change.
36. Alex Matveev Completed August, 2009.
 • Title: Evaluating the land use change carbon flux and its impact on climate.

UNDERGRADUATE HONOURS STUDENTS

37. Susan Ly Completed April 2023
 • Topic: Quantifying national contributions to observed climate warming
38. Eva-Maria Hanchar (co-supervised) Completed April 2020
 • Topic: Individual carbon footprints and emissions-reduction actions.
39. Carly McGregor (co-supervised) Completed April 2019
 • Topic: Biodiversity impacts of cumulative CO₂ emissions
40. Mitchell Dickau Completed April 2018
 • Topic: Climate determinants of changing outdoor skating conditions in Montreal.

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| 41. Brogan Stewart (co-supervised) | Completed April 2018 |
| • Topic: Emergence of novel climates over habitat ranges of non-human primate species. | |
| 42. Elisa Cohen-Bucher (co-supervised) | Completed April 2018 |
| • Topic: Reflection of Indigenous peoples in government climate reports. | |
| 43. Samantha Maillot | Completed April 2017 |
| • Topic: Effect of the Climate Clock on public perception of global warming. | |
| 44. Tanya Graham (co-supervised) | Completed April 2013 |
| • Topic: Impact of climate change on primate populations. | |
| 45. Trevor Smith | Completed April 2012 |
| • Topic: Metrics for comparing the climate effect of different greenhouse gases. | |
| 46. Serge Keverian | Completed April 2011 |
| • Topic: Regional attribution of carbon emissions and climate change. | |
| 47. Kelly Nugent | Completed April, 2010. |
| • Topic: Drivers of North American continental runoff and implications for ocean circulation. | |
| 48. Andrew Pinsonneault | Completed April, 2009. |
| • Title: Climate model reliability in simulating CO ₂ -induced enhanced forest productivity | |
| 49. Andrew Ross | Completed April, 2008. |
| • Title: Impact of geoengineering on the rate of climate warming. | |

Teaching

Courses taught

- Human Environment 665: Sustainability in the Digital Age
 - Department of Geography, Planning and Environment, Concordia University.
 - Graduate-level course (16 - 18 students), Summer 2021, 2022, 2023, 2024.
- Geography 478: Climate Change Science, Impacts and Policy
 - Department of Geography, Planning and Environment, Concordia University.
 - Upper-level (fourth-year) undergraduate course (18 - 35 students), Winter 2007, 2008; Fall 2009; Winter 2011, 2016, 2017, 2018, 2019, 2020.
- Human Environment 660: Climate Change and Sustainability
 - Department of Geography, Planning and Environment, Concordia University.
 - Graduate-level course (20 students), Fall 2015; Fall 2017; Fall 2019; Fall 2021.
- Human Environment 665Q: Quantitative Research Methods
 - Department of Geography, Planning and Environment, Concordia University.
 - Graduate-level course (13 students), Fall 2012.
- Geology 440: Current Research in Environmental Earth Sciences
 - Department of Geography, Planning and Environment, Concordia University.
 - Upper-level (fourth-year) undergraduate course (20 students), Fall 2011.

6. Human Environment 615: Research Group Seminar
 - Department of Geography, Planning and Environment, Concordia University.
 - Graduate-level course (6-12 students), Winter 2009; Fall/Winter 2015.
7. Human Environment 655: Environmental Modeling
 - Department of Geography, Planning and Environment, Concordia University.
 - Graduate-level course (8-14 students), Winter 2008; 2009; 2012.
8. Geography 378: The Climate System
 - Department of Geography, Planning and Environment, Concordia University.
 - Upper-level (third-year) undergraduate course (45-60 students), Fall 2007; 2008.
9. Geography 398C: Climate Change-Science, Impacts and Policy
 - Department of Geography, Planning and Environment, Concordia University.
 - Upper-level (third-year) undergraduate course (35 students), Winter 2007.
10. Geography 305: Introduction to Weather and Climate
 - Department of Geography, University of Calgary.
 - Introductory (second-year) undergraduate course (100 students), Fall 2005.
11. Environmental Management 6130: Climate Dynamics and Modeling
 - University of the West Indies, Barbados.
 - 3-week intensive master's level course (6-7 students), April 2004; January 2005.

Service and Professional Activities

Journal Editing

1. Review Editor, Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report, Chapter 7, 2019-2021.
2. Guest Editor, Environmental Research Letters Focus Issue: Cumulative Emissions, Global Carbon Budgets and the Implications for Climate Mitigation Targets, 2014-2017.

Conference Session Organization

1. Session Convenor, "Climate Change and the Carbon Cycle," Canadian Meteorological and Oceanographic Society Congress, June 2010, 2011, 2012, 2013, 2016, 2017.
2. Session Convenor, "Historic Emissions and the Question of Responsibility for Climate Change Loss and Damage, Adaptation and Mitigation," Our Common Future under Climate Change, Paris, July 2015.
3. Session Convenor, "Fossil fuel infrastructure and climate change mitigation: emerging perspectives," Our Common Future under Climate Change, Paris, July 2015.
4. Session Convenor, "From Carbon Emissions to Climate Change," Canadian Meteorological and Oceanographic Society Congress, June 2015.

5. Session Convenor, “Historic Contributions: the Common but Differentiated Responsibility Challenge,” NCSE Energy and Climate Change conference, January 2015.
6. Session Convenor, “Connecting Climate Impacts to Cumulative Carbon Emissions and Linking Biophysical Functions to Human Values,” American Geophysical Union Fall Meeting, San Francisco, December 2014.
7. Session Convenor, “Climate Change Impacts and Stabilization III: Stabilization Prospects, Trajectories, and Uncertainties,” American Geophysical Union Fall Meeting, December 2008.

External Committees and Workshops

7. Member, NSERC Discovery Grant Evaluation Committee (Geosciences), 2019 – 2021.
8. Invited Participant, International Workshop on the Remaining Carbon Budget, Vancouver, January 2019.
9. Event Organizer Climate Clock Projection Launch on Earth Day 2016, Montreal, April 2016.
10. Workshop Organizer UVic ESCM Developers Workshop, Victoria, BC, May 2015.
11. Member, CLIVAR Working Group on Ocean Carbon Cycling in CMIP5 Models, 2009 - 2013.
12. Member, U.S. National Academy of Sciences Committee on Stabilization Targets for Atmospheric Greenhouse Gas Concentrations, Washington DC, September 2009 - April 2010.
13. Invited Participant, D.O.E. Carbon Cycling and Biosequestration Workshop, Washington DC, March 2008.
14. Invited Participant, Climate Engineering Workshop, Harvard University, October 2007.

University and Departmental Service and Committees

1. Member, Investment Risk Committee June 2024 – Present
 - Concordia University Intergenerational Fund
2. Member, Sustainability Action Plan (Research) Advisory Committee January 2022 – Present
 - Concordia University
3. Member, Sustainability Action Plan (Climate) Advisory Committee January 2022 – Present
 - Concordia University
4. Graduate Program Director (M.Sc. and Ph.D.) January 2022 – June 2024
 - Department of Geography, Planning and Environment, Concordia University
5. Member, Sustainability Action Plan Advisory Committee June 2022 – 2023
 - Concordia University
6. Member, Sustainable Development Goals Advisory Committee June 2021 – 2023
 - Concordia University

7. Member, Departmental Personnel Committee June 2021 – 2023
 - Department of Geography, Planning and Environment, Concordia University
8. Member, Part-time Faculty Hiring Committee June 2019 – 2023
 - Department of Geography, Planning and Environment, Concordia University
9. Chair, Climate Action Plan Development Committee March 2018 – December 2019
 - Concordia University
10. Graduate Program Director (M.Sc. and Ph.D.) June 2019 – December 2019
 - Department of Geography, Planning and Environment, Concordia University
11. Member, Dept. Hiring Committee (Climate Adaptation) September 2019 – November 2019
 - Department of Geography, Planning and Environment, Concordia University
12. Member, Dept. Hiring Committee (Urban Biodiversity) April 2018 – June 2018
 - Department of Biology, Concordia University
13. Member, CERC Hiring Committee (Sustainable Cities) April 2018 – June 2018
 - Canada Excellence Research Chair, Concordia University
14. Chair, Departmental Assessment Committee February 2016 – August 2018
 - Department of Geography, Planning and Environment, Concordia University
15. Member, Faculty Research Committee September 2015 – August 2018
 - Faculty of Arts and Science, Concordia University
16. Graduate Program Director (M.Sc. and Ph.D.) June 2016 - December 2016
 - Department of Geography, Planning and Environment, Concordia University
17. Member, Graduate Program Committee June 2016 - December 2016
 - Department of Geography, Planning and Environment, Concordia University
18. Member, Dept. Hiring Committee (Environmental Science) September 2015 - April 2016
 - Department of Geography, Planning and Environment, Concordia University
19. Member, Dept. Hiring Committee (Ecological Economics) June 2015 - December 2016
 - Department of Geography, Planning and Environment, Concordia University
20. Graduate Program Director (M.Sc.) June 2011 - June 2013
 - Department of Geography, Planning and Environment, Concordia University
21. Member, Graduate Program Committee June 2011 - June 2013
 - Department of Geography, Planning and Environment, Concordia University
22. Chair, Ph.D. Proposal Development Committee January 2012 - June 2013
 - Department of Geography, Planning and Environment, Concordia University
23. Member, Ph.D. Proposal Development Committee November 2009 - December 2011
 - Department of Geography, Planning and Environment, Concordia University
24. Member, Departmental Workload Committee December 2008 - April 2010
 - Department of Geography, Planning and Environment, Concordia University
25. Departmental Research Liaison September 2008 - April 2010
 - Department of Geography, Planning and Environment, Concordia University
26. Departmental Seminar Series Coordinator September 2008 - December 2009
 - Department of Geography, Planning and Environment, Concordia University

27. Member, Departmental Hiring Committee (Political Ecology) January 2008 - April 2008
 - Department of Geography, Planning and Environment, Concordia University
28. Member, Department Chair Search Committee January 2008 - April 2008
 - Department of Geography, Planning and Environment, Concordia University

Memberships in Professional Societies

1. College of New Scholars, Artists and Scientists, Royal Society of Canada: 2017-2023
2. Canadian Meteorology and Oceanography Society: 2008-present.
3. American Geophysical Union: 2004-present.