



## Dr. Graham McDowell Curriculum Vitae

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### EDUCATION

**University of British Columbia** 2015-2020

- PhD - Resources, Environment, and Sustainability (Vanier Scholar)
- Dissertation - Adaptation to glacio-hydrological change in high mountains

**University of Oxford** 2011-2012

- MSc - Environmental Change and Management (with Distinction)
- Thesis - The role of bridging organizations in facilitating socio-ecological transformation: A case study of the Great Northern Landscape Conservation Cooperative

**McGill University** 2008-2011

- BA Hons - Geography, International Development Studies (Honours 1<sup>st</sup> class)
- Thesis - The human dimensions of climate change in the Khumbu Region of Nepal: Implications of hydrological modification

### PROFESSIONAL APPOINTMENTS

**University of Calgary** 2020-2024

- Project Leader - Canadian Mountain Assessment (Postdoctoral Associate)

**University of Zurich** 2020-2022

- Banting Postdoctoral Fellow, Department of Geography

### PUBLICATIONS

*Total peer-reviewed publications = 34, Total citations = 3,495, i100 = 9, i10-index = 22*

#### Peer-Reviewed Journal Articles

27. Hanly, K., **McDowell, G.**, Marshall, S. (Accepted) The Evolution of 'Riskscapes': 100 years of climate change and mountaineering activity in the Lake Louise area of the Canadian Rockies. *Climatic Change*.

26. Hanly, K., Marshall, S., **McDowell, G.** (2023) [The State of Glacier hydrology Research in Canada](https://doi.org/10.1080/07011784.2023.2289805). Canadian Water Resources Journal (75<sup>th</sup> Anniversary of Canadian Water Resources Association Special Issue). 48(4) <https://doi.org/10.1080/07011784.2023.2289805>
25. Hanly, K., **McDowell, G.**, Tricker, J. (2023) [Climbing through climate change in the Canadian Rockies: Guides' experiences of route transformation on Mt. Athabasca](https://doi.org/10.3390/tourhosp4040033). Tourism and Hospitality. 4(4) 539-558. <https://doi.org/10.3390/tourhosp4040033>
24. Baral, P., Allen, S., Steiner, J., Gurung, T., **McDowell, G.** (2023) [Climate change impacts and adaptation to permafrost change in High Mountain Asia: a comprehensive review](https://doi.org/10.1088/1748-9326/acf1b4). Environmental Research Letters. 18 <https://doi.org/10.1088/1748-9326/acf1b4>
23. Voorhis, J., **McDowell, G.**, Burakowski, E., Luneau, T (2023) [The Implications of Warmer Winters for Ice Climbing: A Case Study of the Mount Washington Valley, New Hampshire, USA](https://doi.org/10.3389/fhumd.2023.1097414). Frontiers in Human Dynamics - Environment, Politics and Society. 5 <https://doi.org/10.3389/fhumd.2023.1097414>
22. **McDowell, G.** & Hanly, K. (2022) [The state of mountain research in Canada](https://doi.org/10.1007/s11629-022-7569-1). Journal of Mountain Science. 19(10) <https://doi.org/10.1007/s11629-022-7569-1>
21. **McDowell, G.**, Stevens, M., Lesnikowski, A., Huggel, C., Harden, A., DiBella, J., Morecroft, M., Kumar, P. Joe, E.T., Bhatt, I. (2021) [Closing the adaptation gap in mountains](https://doi.org/10.1659/MRD-JOURNAL-D-21-00033.1). Mountain Research and Development. 41(3) <https://doi.org/10.1659/MRD-JOURNAL-D-21-00033.1>
20. Aggarwal, A., Frey, H., **McDowell, G.**, Drenkhan, F., Nüsser, M., Racoviteanu, A., Hoelzle, M. (2021) [Adaptation to climate change induced water stress in major glacierized mountain regions](https://doi.org/10.1080/17565529.2021.1971059). Climate and Development. 14(7) <https://doi.org/10.1080/17565529.2021.1971059>
19. **McDowell, G.** & Guo, J. (2021) [A nationally coherent characterization and quantification of mountain systems in Canada](https://doi.org/10.1659/MRD-JOURNAL-D-20-00071.1). Mountain Research and Development. 41(2) <https://doi.org/10.1659/MRD-JOURNAL-D-20-00071.1>
18. **McDowell, G.**, Koppes, M., Harris, L., Chan, KM., Price, MF., Lama, DG., Jiménez, G. (2021) [Lived experiences of 'peak water' in the high mountains of Nepal and Peru](https://doi.org/10.1080/17565529.2021.1913085). Climate and Development. 14(3) <https://doi.org/10.1080/17565529.2021.1913085>
17. Kassi, N., Humphries, M., **McDowell, G.** (2020) [The Canadian Mountain Network: Advancing innovative, solutions-based research to inform decision-making](https://doi.org/10.1659/MRD-JOURNAL-D-21-00004.1). Mountain Research and Development. 40(4) <https://doi.org/10.1659/MRD-JOURNAL-D-21-00004.1>
16. **McDowell, G.**, Harris, L., Koppes, M., Price, M., Chan, K., Lama, D (2020) [From needs to actions: Prospects for planned adaptations in high mountain communities](https://doi.org/10.1007/s10584-020-02920-1). Climatic Change. 163(2) <https://doi.org/10.1007/s10584-020-02920-1>
15. Ford, J., King, N., Galappaththi, E., Pearch, T., **McDowell, G.**, Harper, S. (2020) [The Resilience of Indigenous Peoples to Environmental Change](https://doi.org/10.1016/j.oneear.2020.05.014). One Earth. 2(6) <https://doi.org/10.1016/j.oneear.2020.05.014>

14. Canosa, I., Ford, J., **McDowell, G.**, Jones, J., Pearce, T. (2020) [Progress in climate change adaptation in the Arctic](https://doi.org/10.1088/1748-9326/ab9be1). Environmental Research Letters. 15(9) <https://doi.org/10.1088/1748-9326/ab9be1>
13. **McDowell, G.**, Huggel, C., Frey, H., Wang, F., Cramer, R., Ricciardi, V. (2019) [Adaptation action and research in glaciated mountain systems: Are they enough to meet the challenge of climate change?](https://doi.org/10.1016/j.gloenvcha.2018.10.012) Global Environmental Change. 54 <https://doi.org/10.1016/j.gloenvcha.2018.10.012>
12. Windfeld, E., Ford, J., Berrang-Ford, L., **McDowell, G.** (2019) [How do community-level climate change vulnerability assessments treat future vulnerability and integrate diverse datasets? A review of the literature](https://doi.org/10.1139/er-2018-0102). Environmental Reviews. 27(4) <https://doi.org/10.1139/er-2018-0102>
11. Shaw, S., Rodina, L., ... **McDowell, G.** (2018) [Unpacking social-ecological transformations: Conceptual, ethical and methodological insights](https://doi.org/10.1177/2053019618817928). The Anthropocene Review. 5(3) <https://doi.org/10.1177/2053019618817928>
10. Ford, J., Pearce, T., **McDowell, G.** et al. (2018) [Vulnerability and its discontents: The past, present, and future of climate change vulnerability research](https://doi.org/10.1007/s10584-018-2304-1). Climatic Change. 151 <https://doi.org/10.1007/s10584-018-2304-1>
9. **McDowell, G.** & Koppes, M. (2017) [Robust adaptation research in high mountains: Integrating the scientific, social, and ecological dimensions of glacio-hydrological change](https://doi.org/10.3390/w9100739). Water 9: 739. (Special Issue – Global Warming Impacts on Mountain Glaciers and Communities). 9(10) <https://doi.org/10.3390/w9100739>
8. **McDowell, G.**, Ford, J., Jones, J. (2016) [25 years of community-level climate change vulnerability research: Trends, progress, and future directions](https://doi.org/10.1088/1748-9326/11/3/033001). Environmental Research Letters. 11 [DOI 10.1088/1748-9326/11/3/033001](https://doi.org/10.1088/1748-9326/11/3/033001)
7. Ford, J., **McDowell, G.**, Pearce, T. (2015) [The adaptation challenge in the Arctic](https://doi.org/10.1038/nclimate2723). Nature Climate Change. 5 <https://doi.org/10.1038/nclimate2723>
6. Ford, J., ... **McDowell, G.** et al. (2015) [Community-based adaptation research in the Arctic](https://doi.org/10.1002/wcc.376). WIREs Climate Change. 7(2) <https://doi.org/10.1002/wcc.376>
5. **McDowell, G.**, Stephenson, E., Ford, J. (2014) [Adaptation to climate change in glaciated mountain regions](https://doi.org/10.1007/s10584-014-1215-z). Climatic Change. 126 <https://doi.org/10.1007/s10584-014-1215-z>
4. Ford, J., **McDowell, G.** Jones, J. (2014) [The state of climate change adaptation in the Arctic](https://doi.org/10.1088/1748-9326/9/10/104005). Environmental Research Letters. 9 [DOI 10.1088/1748-9326/9/10/104005](https://doi.org/10.1088/1748-9326/9/10/104005)
3. **McDowell, G.** and Ford, J. (2014) [The socio-ecological dimensions of hydrocarbon development in the Disko Bay region of Greenland: Opportunities, risks, and tradeoffs](https://doi.org/10.1016/j.apgeog.2013.11.006). Applied Geography. 46 <https://doi.org/10.1016/j.apgeog.2013.11.006>
2. Ford, J., **McDowell, G.**, Shirley, J., et al. (2013) [The dynamic multi-scale nature of climate change vulnerability: An Inuit harvesting example](https://doi.org/10.1080/00045608.2013.776880). Annals of the American Association of Geographers. 103(5) <https://doi.org/10.1080/00045608.2013.776880>

1. **McDowell, G.**, Ford, J., Lehner, B., Berrang-Ford, L., Sherpa, A. (2013) [Climate-related hydrological change and human vulnerability in remote mountain regions: A case study from Khumbu, Nepal](https://doi.org/10.1007/s10113-012-0333-2). Regional Environmental Change. 13 <https://doi.org/10.1007/s10113-012-0333-2>

### Peer-Reviewed Assessment Reports

4. **McDowell, G.** Stevens, M., Marshall, S. et al. (2023) [Canadian Mountain Assessment: Walking Together to Enhance Understanding of Mountains in Canada](#). University of Calgary Press.

3. Maharjan, A., **McDowell, G.**, Panday, A., Pasakhala, B., Shrestha, S., Wang, X. (2023) [Cryospheric change, adaptation, and sustainable development in the mountain societies of the Hindu Kush Himalaya](#). In ICIMOD. Wester, P., Chaudhary, S., Chettri, N., Jackson, M., Maharjan, A., Nepal, S., Steiner, J.F. (Eds.), Water, Ice, Society, and Ecosystems in the Hindu Kush Himalaya: An Outlook (pp. 165–217). ICIMOD.

2. Adler, C., Wester, P., ... **McDowell, G.**, et al. (2022) [Intergovernmental Panel on Climate Change \(IPCC\) 6<sup>th</sup> Assessment Report. Working Group II. Cross-Chapter Paper on Mountains](#). Cambridge University Press.

1. Hock, R., Rasul, G., ... **McDowell, G.**, et al. (2019) [Intergovernmental Panel on Climate Change \(IPCC\). Special Report on the Oceans and Cryosphere in a Changing Climate \(SROCC\). High Mountain Areas chapter](#). Cambridge University Press.

### Peer-Reviewed Book Chapters

3. Carey, M., **McDowell, G.**, Huggel, C., Marshall, B., Moulton, H., Portocarrero, C., Reynolds, J., Provant, P., Vicuna, L. (2021) [A Socio-Cryospheric Systems Approach to Glacier Hazards, Glacier Runoff Variability, and Climate Change](#). In Snow and Ice-Related Hazards, Risks and Disasters (2<sup>nd</sup> Edition). Haeberli, W. & Whiteman, C. (Eds.). Elsevier.

2. **McDowell, G.**, Stephenson, E., Ford, J. (2016) [Adaptation, Adaptation Science, and the Status of Adaptation in Mountain Regions](#). In Climate Change Adaptation Strategies: An Upstream-Downstream Lens, eds. Salzmann, N., Huggel, C., Nussbaumer, S., Ziervogel, G. (Eds). Springer.

1. Carey, M., **McDowell, G.**, Huggel, C., Jackson, J., Portocarrero, C., Reynolds, J., Vicuna, L. (2014) [Integrated Approaches to Adaptation and Disaster Risk Reduction in Dynamic Socio-Cryospheric Systems](#). In Snow and Ice-Related Hazards, Risks and Disasters. Haeberli, W. & Whiteman, C. (Eds.). Elsevier.

### Book Reviews

1. **McDowell, G.** (2018) [Book Review – Mountain Ice and Water: Investigations of the Hydrologic Cycle in Alpine Environments](https://doi.org/10.1659/mrd.mm224). Mountain Research and Development. 38(3). <https://doi.org/10.1659/mrd.mm224>

## Theses/Dissertation

3. **McDowell, G.** (2020) [Adaptation to glacio-hydrological change in high mountains](#). PhD Dissertation. University of British Columbia, Institute for Resources, Environment, and Sustainability. Vancouver, BC.
2. **McDowell, G.** (2012) [The role of bridging organizations in facilitating socio-ecological transformation: A case study of the Great Northern Landscape Conservation Cooperative](#), MSc Thesis. University of Oxford, Environmental Change Institute. Oxford, UK.
1. **McDowell, G.** (2011) [The human dimensions of climate change in the Khumbu Region of Nepal: Implications of hydrological modification](#). BA Honours Thesis. McGill University, Department of Geography. Montréal, QC.

## Other Publications

4. **McDowell, G.** (2022) [The Canadian Mountain Assessment: Engaging with multiple ways of knowing to advance understanding of mountains in Canada](#). 2022 State of the Mountains Report. Alpine Club of Canada.
3. **McDowell, G.** (2020) [Why mountains matter in Canada: They sustain us, enrich our lives, and inspire us](#). *Canadian Geographic*. November/December issue.
2. Knight, M. and **McDowell, G.** (2010) [Breaking the Ice: McGill researchers work with Inuit hunters to understand and publicize the social effects of climate change](#). *McGill Daily 99*: 14-15.
1. **McDowell, G.** (2010) [Introduction](#). *Ampersand* 3: viii-ix.

## FUNDING, AWARDS, AND HONOURS

Year(s)	Name	Amount (CAD)
2024	Invited member of College of Reviewers, Canada Research Chairs program	N/A
2024	Inaugural Alice Adams and Dr. Graham Adams, Jr. Visiting Speaker (awarded by Office of the President & Department of History, Mount Allison University).	7,000
2023-2024	Food and Agriculture Institute (University of the Fraser Valley), research contract	50,000
2020-2024	Canadian Mountain Assessment project funding (Canadian Mountain Network, NSERC, University of Calgary)	\$602,000
2023	UIAA Mountain Protection Award ( <a href="#">finalist</a> )	N/A
2020-2022	Banting Postdoctoral Fellowship	\$140,000
2020	Elected Fellow of the Royal Canadian Geographical Society	N/A
2020	Sumaila-Volvo Graduate Prize in Environmental Sustainability – Awarded to “student whose peer-reviewed publications to date are expected to have the most significant impact on the field of environmental sustainability.”	\$3,850

2020	Adaptation Solutions Space project funding (University of Zurich)	\$14,500
2020	University of British Columbia Faculty of Science Graduate Award	\$3,000
2019-2020	University of British Columbia Doctoral Research stipend	\$20,000
2018	Adaptation in Mountain Systems project funding (University of Zurich)	\$13,600
2018	Himalayan Field Research stipend (University of British Columbia)	\$10,000
2017-2019	International Development Research Centre (IDRC) Doctoral Research Award	\$19,640
2017-2019	Institute of Asian Research Graduate Fieldwork Fellowship	\$3,000
2017-2019	Liu Institute for Global Issues Bottom Billion Fieldwork Award	\$1,500
2016-2020	University of British Columbia Public Scholar Award	\$8,500
2016-2019	Vanier Canada Graduate Scholarship	\$150,000
2016	McDowell et al. 2016 selected by Environmental Research Letters as one of the “most innovative and ground-breaking articles published in 2016”	N/A
2015-2020	EDGES Doctoral Flex Funds	\$6,000
2015-2019	University of British Columbia Four Year Doctoral Fellowship	\$72,800
2015	Institute for Resources, Environment, and Sustainability Student Travel Award	\$500
2015	University of British Columbia Graduate Student Travel Award	\$500
2015	University of British Columbia Faculty of Science Graduate Award	\$5,000
2014	Vermont Arts Council Artist Development Grant	\$650
2014-2015	Vulnerability systematic review project funding (McGill University – subcontract)	\$74,250
2013-2014	Arctic systematic review project funding (McGill University – subcontract)	\$13,500
2013	Mountain systematic review project funding (McGill University – subcontract)	\$12,480
2012	Greenland hydrocarbon development impacts project funding (McGill University – subcontract)	\$12,000
2012	Environmental Change Institute Research Grant	\$1,300
2012	A.C. Irvine Travel Award (Oxford University)	\$1,200
2011	Moyse Traveling Scholarship (McGill University)	\$4,300
2011	Golden Key Study Abroad Scholarship	\$1,000
2011	Most Outstanding Geography Student at McGill University (Canadian Association of Geographers)	N/A

2010	Nominated member of Sigma Xi Scientific Research Society	N/A
2010	1 <sup>st</sup> Place McGill Undergraduate Research Conference	\$300
2010	1 <sup>st</sup> Place Excellence in Geographic Photography	N/A
2009-2011	Climate Change Adaptation Fieldwork Award (Climate Change Adaptation Research Group, McGill University)	\$20,000
2009	McGill Science Undergraduate Research Award	\$5,500
2009	McGill Honours Research Fellowship	\$1,000
2001	Philip Otis Memorial Scholarship (National Outdoor Leadership School)	\$1,000
	<b>TOTAL</b>	<b>\$1,279,870</b>

## CONFERENCE ACTIVITIES

### Conference Organization

**McDowell, G.**, Stevens, M., Marshall, S. (May 23-28, 2022) Canadian Mountain Assessment Indigenous Peoples Learning Circle & Author Meeting. Banff, Canada.

**McDowell, G.**, Shaw, S., Rodina, L. (May 15, 2017) [Environmental Change and Transformations workshop](#). Liu Institute for Global Issues. Vancouver, Canada.

### Conference Session Organization

**McDowell, G.** (September 14, 2022 - Plenary Event) [Recent Advancements in Canadian Mountain Research: Insights from Research Partnerships that Draw on Indigenous and Western Ways of Knowing](#). 2<sup>nd</sup> International Mountain Conference, Innsbruck, Austria.

**McDowell, G.** & Marshall, S. (September 13, 2022 - Plenary Event) [Approaches to Assessing Mountain Systems Knowledge](#). 2<sup>nd</sup> International Mountain Conference, Innsbruck, Austria.

Hanley, K., **McDowell, G.**, Rushton, B., Knowles, N. (September 12, 2022 - Special Session) [The Future of Winter Recreation in an Era of a Rapidly Changing Climate](#). 2<sup>nd</sup> International Mountain Conference, Innsbruck, Austria.

**McDowell, G.** & Price, M. (September 9, 2019 - Special Session) [Integrative Approaches to Adaptation and Transformation Research in mountain systems workshop](#). 1<sup>st</sup> International Mountain Conference, Innsbruck, Austria.

**McDowell, G.** & Shen, X. (2017-2018) [IRES Seminar Series](#). Institute for Resources, Environment, and Sustainability (IRES), Vancouver, Canada.

### Conference Presentations

**McDowell, G.** (September 27, 2023) The Canadian Mountain Assessment: Reflections on the first formal assessment of mountain systems knowledge in Canada. Canadian Mountain Network Knowledge Sharing Summit. Parksville, Canada

**McDowell, G.** (March 17, 2023 - Keynote Speaker) Mountains under pressure: From climate disruption to desirable mountain futures. 60th annual Geography Department Conference, University of Calgary. Calgary, Canada.

Voorhis, J., **McDowell, G.**, Burakowski, E., Luneau, T (February 6, 2023) The Implications of Warmer Winters for Ice Climbing: A Case Study of the Mount Washington Valley, New Hampshire, USA. Mount Washington Valley Ice Festival (panel discussion). North Conway, NH, USA.

**McDowell, G.**, Voorhis, J., Burakowski, E., Luneau, T. (October, 29 2022) [The implications of warmer winters for ice climbing guides: A case study from the Mount Washington Valley, USA.](#) UIAA General Assembly, Climate Change Summit. Banff, Canada.

Hanly, K., & **McDowell, G.** (September 14, 2022) The State of Mountain Research in Canada. 2<sup>nd</sup> International Mountain Conference, Innsbruck, Austria.

**McDowell, G.** & Stevens, M. (September 12, 2022) Conceptualizing, Characterizing, and Closing Adaptation Gaps in Mountains. 2<sup>nd</sup> International Mountain Conference, Innsbruck, Austria.

Aggarwal, A., Frey, H., **McDowell, G.**, et al. (September 12, 2022) Adaptation to climate change induced water stress in major glacierized mountain regions. 2<sup>nd</sup> International Mountain Conference, Innsbruck, Austria.

Voorhis, J., Burakowski, E., **McDowell, G.**, Luneau, T. (September 12, 2022) The Shrinking Season: Observations of Warming Winters, and Impacts and Adaptations by Ice Climbing Guides in the Northeastern United States. 2<sup>nd</sup> International Mountain Conference, Innsbruck, Austria.

**McDowell, G.** (June 7, 2022) The Canadian Mountain Assessment: Engaging with multiple ways of knowing to advance understanding of mountains in Canada. Canadian Mountain Network Knowledge Sharing Summit. Banff, Canada.

Hanly, K., & **McDowell, G.** (June 7, 2022) What we know, don't know, and need to know: A systematic review of mountain research in Canada. Canadian Mountain Network Knowledge Sharing Summit. Banff, Canada.

**McDowell, G.** (May 18, 2022) Foregrounding the human dimensions of hydrological change to improve adaptation outcomes. Global Water Futures 2022 Annual Science Meeting (online due to Covid).

**McDowell, G.** (November 9, 2021) [Closing the adaptation gap in mountains.](#) UNFCCC COP 26 (online due to Covid).

**McDowell, G.** (June 24, 2021) The Canadian Mountain Assessment: Braiding scientific and Indigenous knowledge to advance understanding of mountain systems in Canada. Centre for Hydrology/Coldwater Laboratory (online due to Covid).

**McDowell, G.** (June 22, 2021) The Canadian Mountain Assessment: Why, What, and How. Canadian Mountain Network Knowledge Sharing Summit (online due to Covid).



**McDowell, G.**, Koppes, M., Harris, L., Chan, KM., Price, MF., Lama, DG., Jiménez, G., (May 18, 2021) Comparing lived experiences of ‘peak water’ in the high mountains of Nepal and Peru. Global Water Futures 2021 Annual Open Science Meeting (online due to Covid).

Aggarwal, A., Frey, H., **McDowell, G.**, Drenkhan, F., Nuesser, M., Racoviteanu, A., Hoelzle, M. (April 2021) Adaptation to climate change induced water stress in major glacierized mountain regions. European Geophysical Union General Assembly (online due to Covid).

**McDowell, G.** (February 24, 2021, Invited Delegate, Speaker, and Panelist) Session: Climate change adaptation and disaster risk reduction. [Commonwealth Science Conference – Science for a Resilient Future](#). The Royal Society, London, UK (online due to Covid).

**McDowell, G.** (September 11, 2019) Situating ‘peak water’: Lived experiences of glacio-hydrological change in the high mountains of Nepal and Peru. International Mountain Conference, Innsbruck, Austria.

**McDowell, G.** (September 11, 2019) Formal systematic review methods for tracking progress on Post-2015 UN Frameworks in mountain regions. International Mountain Conference, Innsbruck, Austria.

**McDowell, G.**, Huggel, C., Frey, H., Wang, F., Cramer, K., Ricciardi, V. (September 10, 2019) Adaptation action and research in glaciated mountain systems: Are they enough to meet the challenge of climate change? International Mountain Conference, Innsbruck, Austria.

**McDowell, G.** & Koppes, M. (September 9, 2019) Integrative approaches to adaptation research in rapidly changing high mountain watersheds. International Mountain Conference, Innsbruck, Austria.

**McDowell, G.** (March 9, 2019) Situating ‘peak water’: Lived experiences of glacio-hydrological change in the high mountains of Nepal. Western Division of the Canadian Association of Geographers. Victoria, BC, Canada.

**McDowell, G.**, Huggel, C., Frey, H., Wang, F., Cramer, K., Ricciardi, V. (October 23, 2018) Adaptation and the Challenge of Climate Change in Glaciated Mountain Regions: A Global Progress Report. World Mountain Forum. Bishkek, Kyrgyzstan (poster, which taken to Kyrgyzstan by a colleague).

**McDowell, G.** & Koppes, M. (August 3, 2017) Robust adaptation research in high mountains: Integrating the scientific, social, and ecological dimensions of glacio-hydrological change. International Forum of Social Sciences: Interdisciplinary dialogues about climate change, disasters, and governance. Cusco, Peru.

**McDowell, G.** & Koppes, M. (May 30, 2017) Principles for Successful Adaptation to ‘Peak Water’ in Glaciated Watersheds. Canadian Geophysical Union Annual Conference. Vancouver, British Columbia, Canada.

**McDowell, G.** (October 7, 2015) Towards a systematic understanding of climate change adaptation in glaciated mountain regions. Mountains of Our Future Earth Conference. Perth, Scotland.

**McDowell, G.** (May 8, 2015) [What we know, do not know, and need to know about climate change adaptation in high mountain socio-ecological systems](#). Thinking Mountains. Jasper, Canada.

**McDowell, G.** (May 23, 2014) [A systematic review of climate change adaptation in glaciated mountain regions](#). World Mountain Forum. Cusco, Peru.

**McDowell, G.,** Carey, M., Huggel, C., Kargel, J. (April 30, 2014) Social dimensions of vulnerability to glacier-hydrology hazards in Nepal and Peru. European Geosciences Union General Assembly. Vienna, Austria. (poster, which taken to Austria by a colleague).

**McDowell, G.** (December 12, 2013) The Socio-Ecological Dimensions of Hydrocarbon Development in the Disko Bay Region of Greenland: Opportunities, Risks, and Tradeoffs. ArcticNet Annual Scientific Meeting. Halifax, Canada.

**McDowell, G.** (December 5, 2012) [Social Network Analysis as an Aid to Landscape-scale Conservation](#). Great Northern Landscape Conservation Cooperative. Webinar.

**McDowell, G.** (April 15, 2011) The Human Dimensions of Climate Change in the Khumbu Region of Nepal: Implications of Hydrological Modification. American Association of Geographers Annual Meeting. Seattle, WA, USA.

**McDowell, G.** (March 4, 2011) Regional Implications of Global Environmental Change: The Case of Khumbu, Nepal. McGill Sustainability Research Symposium. Montréal, Canada.

**McDowell, G.** (October 15, 2010) The Human Dimensions of Climate Change in the Khumbu Region of Nepal: Implications of Hydrological Modification. McGill Undergraduate Research Conference. Montréal, Canada.

**McDowell, G.** (April 14, 2010) Real-time Monitoring of Climate Change Vulnerability and Adaptation of Inuit Hunters: The Iqaluit Land-Use Mapping Project. American Association of Geographers Annual Meeting. Washington D.C., USA.

### **Public-Facing Presentations**

**McDowell, G.** (January 26, 2024) The Canadian Mountain Assessment: Enhancing understanding of mountains through the respectful inclusion of western academic and Indigenous ways of knowing. Mount Allison University, Moncton, Canada.

**McDowell, G.** (January 25, 2024) Introduction for book launch of [Capturing Glaciers](#) (by Dr. Dani Inkpen). Mount Allison University, Moncton, Canada.

**McDowell, G.** (January 24, 2024) From climbing to climate research and back again. Mount Allison University (Climbing Society), Moncton, Canada.

**McDowell, G.** (April 20, 2023) [The implications of climate change for mountains and mountain recreation: Findings from recent UN climate reports](#). Guardians of the Ice Speaker Series (with Jim Elzinga, Barry Blanchard, Jon Walsh, Steve House, and Steve Swenson). Calgary, Canada.

**McDowell, G.,** Stevens, M., Melting Tallow, H., Marshall, S., Johnson, M.J., Lightning, K., Dicker, M., Inkpen, D. Shea, J. (November 4, 2023) [Canadian Mountain Assessment Launch Event](#). Whyte Museum of the Canadian Rockies. Banff, Canada.

**McDowell, G.** (June 30, 2022) [Closing the Adaptation Gap in Mountains](#). Inaugural talk of Mountain Research & Development Talks series (online).

**McDowell, G.** (November 24, 2021) How climate change is affecting mountain environments and communities. Protect Our Winters (POW) Bow Valley chapter launch event. Canmore, Canada.

**McDowell, G.,** et al. (December 11, 2020) Why Mountains Matter: Bringing Indigenous Knowledge and Science Together for International Mountain Day. *Reconciling Ways of Knowing: Indigenous Knowledge and Science Forum* (online due to Covid).

**McDowell, G.** et al. (June 10, 2017) [Ideas of North](#). Le Centre des arts actuels Skol. Montréal, Canada.

**McDowell, G.** (March 15, 2017) [Researching and photographing the cascading effects of glacial change in high mountains](#). PhDs Go Public – Humane Interactions with the Environment. Vancouver, Canada.

**McDowell, G.** (September 12, 2016) [Picturing High Places in the Anthropocene: Continuity and Change in High Mountains and the Arctic](#). Liu Institute for Global Issues. Vancouver, Canada.

**McDowell, G.** (November 20, 2010) [De-Abstracting Climate Change](#). TEDx. Montréal, Canada.

## MEDIA ENGAGEMENT

Interviewed by Canadian Press (story picked up by the National Post, Globe and Mail, CBC, CTV, MSN, Calgary Herald, Vancouver Sun, and more) [‘That mountain is shaking’: First-of-its-kind assessment considers Indigenous stories](#), 2023

Interviewed by CBC News [‘New collaborative publication puts mountains on the map for Canadians](#)’, 2023.

Interviewed by UToday [‘International Mountain Day: ‘Benchmark’ assessment reveals depth of Indigenous Peoples’ relationship with Canada’s mountains](#)’, 2023.

Interviewed by Jasper FitzHugh [‘Collaborative publication breaks down Canadian mountains](#)’, 2023.

Interviewed by Rocky Mountain Outlook [‘Mountains matter’: New report elevates understanding of mountain systems](#)’, 2023.

Research profiled in CBC Daybreak Alberta [‘University of Calgary study explores climate change’s effects on popular mountaineering route](#)’, 2023.

Research profiled (and also interviewed) in American Alpine Club film [Freeze // Thaw: Ice Climbing in a Changing Climate](#), 2023.

Research profiled in New York Times article '[Ice Climbing Is Having Its Moment, but How Much Longer Will the Ice Be Around?](#)', 2022.

Research profiled in Pique News article '[A mountain of knowledge - Combining academic research with Indigenous knowledge, the Canadian Mountain Assessment will change how we understand our mountains](#)', 2022.

Interviewed (with Adler, C. & Wester, P.) for '[Approaches to assessing mountain systems knowledge: A round table discussion with leaders of the Canadian Mountain Assessment, Hindu Kush Himalaya Assessment, and IPCC Mountains chapters](#)' Canadian Mountain Podcast, 2022.

Interviewed for 'Indigenous Knowledge—Naturkatastrophen: Rolle von indigenem Wissen bei der Risikoreduzierung und Resilienz' (Indigenous Knowledge—Natural Disasters: Role of Indigenous Knowledge in Risk Reduction and Resilience) (Podcast), 2021

Interviewed for '[UCalgary leads way in launch of Canadian Mountain Assessment: Project to provide comprehensive view of Canada's changing mountain systems based on western scientific and Indigenous knowledge](#)' (Online article), 2020

Interviewed for '[Why the IPCC's New Focus on Mountain Climate Change Is a Big Deal](#)', The Pacific Standard (Online article), 2019.

Interviewed for '[Vulnerability to climate change: what's happening at the community level?](#)' after my article in Environmental Research Letters was selected as one of the "most innovative ground-breaking articles published in 2016". Environmental Research Web (Online article). 2017.

Interviewed for '[What's wrong with this picture?](#)' about my use of photography in climate change research. Vermont Arts Council (Online article). 2014.

Interviewed for 'Inuit Hunters Trudging New Trails around Frobisher Bay' for primetime special about my research in Arctic Canada, CBC News (Television), 2010.

Interviewed for 'Climate change impacts on hunters in the Arctic', CBC News (Radio), 2010.

Interviewed for 'Climate Change in the Arctic – Canary in a Coal Mine', Accent (Newspaper), 2010.

I have also contributed photographs to various media outlets (e.g. Vice, Seattle Times, The Scientist)

## TEACHING

### Teaching Experience

Year(s)	Position	Institution
2022	Invited lecturer - NUTR 0256, Climate Change: Risk and Adaptation in Food Systems and Beyond	Tufts University
2022	Invited lecturer - Foundations in Collaborative Research. Lecture topic: Good Practices in Bringing Together Knowledge Systems	University of Saskatchewan/The Resilience Institute
2022	Course Instructor – Pluralistic Assessment Approaches ( <a href="#">Mentoring and Training in IPCC Processes for Early Career Mountain Researchers from Developing Countries</a> )	University of Zurich
2022	Invited Lecturer - Adaptation to climate change in the Andes and Himalayas	University of Engineering and Technology (Peru)
2019	Course Instructor - Systematic Review: The Science and Practice of Formal Literature Synthesis ( <a href="#">Mentoring and Training in IPCC Processes for Early Career Mountain Researchers from Developing Countries</a> )	University of Zurich
2019	Teaching Assistant - GEOB 408 Our Changing Cryosphere	University of British Columbia
2019	Guest Lecturer, GEOB 408, Our Changing Cryosphere, University of British Columbia, Vancouver, October 30, 2019	University of British Columbia
2019	Invited Lecturer - RES 510 Socio-Ecological Systems	University of British Columbia
2018	Invited Lecturer - The Grand Challenge of Climate Change: Causes, Consequences, and Adaptation (Vancouver Summer Program)	University of British Columbia
2014	Invited Lecturer - GEOG 540 Advanced Topics in Climate Change Vulnerability and Adaptation	McGill University
2013	Teaching Assistant - GEOG 290 Local Geographical Excursion	McGill University
2012	Invited Lecturer - GEOG 200 Geographical Perspectives on World Environmental Problems	McGill University
2010	Invited Lecturer - GEOG 200 Geographical Perspectives on World Environmental Problems	McGill University
2007-2008	Course Instructor - Ice climbing and winter mountaineering skills	University of Vermont
2007-2008	Ice Climbing Guide	Eastern Mountain Sports Climbing School

## Teaching Credentials

Year(s)	Credential	Institution
2019-2020	Centre for Teaching, Learning and Technology (CIRTL) Associate	University of British Columbia
2019	Instructional Skills Workshop certificate of completion	University of British Columbia
2008	Foundations of Education course completed	Community College of Vermont
2001	Outdoor education and leadership course completed	National Outdoor Leadership School

## Supervision and Mentorship Activities

Year(s)	Activity	Institution
2024 – 2027	PhD committee member (Samiullah Sofizada) – Project focused on community adaptation to changing climate, snowpacks, and geohazards in the Robson Valley, British Columbia	University of Northern British Columbia
2021 – 2025	PhD student co-supervisor (Kate Hanly) – Project focused on mountain guides' adaptation to cryospheric changes in the Canadian Rockies.	University of Calgary
2019-2023	Prashant Baral, Anubha Aggarwal, Zarina Saidaliyeva, Estefania Quenta Herrera, Ana Ochoa Sánchez - <a href="#">Mentoring and Training in IPCC Processes for Early Career Mountain Researchers from Developing Countries</a> . Throughout the course of this three-year program, participants gained professional development through mentoring and training, strengthened their expert contributions on mountains and climate change, and enhanced their eligibility to participate as authors in future Intergovernmental Panel on Climate Change (IPCC). In addition to lecturing and on-going mentorship, I published two peer-reviewed articles with mentees.	University of Zurich
2019 – 2023	Madison Stevens – Project assistant for work on IPCC chapter and Canadian Mountain Assessment. Various supervision and mentorship activities related methodology, analysis, and project logistics. Engagement with this mentee led to co-authored peer-reviewed publications and conference presentations.	University of British Columbia
2020 – 2021	Aditya Gandhi - Volunteer for Canadian Mountain Assessment. Mentorship in project organization.	University of Manitoba
2019	Anna Kaveney - BS student in Geography. I mentored this student in planning and implementing an analysis of hydrometeorological change in the Himalayas and Andes and	University of British Columbia

	determining the societal implications of climate-related changes.	
2017-2019	Nathan Bendriem - MS student Resources, Environment, and Sustainability. I was this student's departmental mentor and assisted him with needs and questions from his arrival until his graduation.	University of British Columbia
2012-2016	Knut Kitching - MA student in Geography. I mentored this student as he became involved with a community-based project I had been leading in Arctic Canada as well as through a challenging time he faced in completing his master's thesis. Engagement with this student led to a co-authored peer-reviewed publication.	McGill University
2013	Aviaq Fly - Indigenous research assistant from Disko Bay, Greenland. I mentored this research assistant in various field research and interview methods as well as research ethics during Arctic field work in Greenland.	McGill University
2011-2012	Diana King - BA (Hons) student in Geography. I mentored this student in conducting a follow up study based on my earlier work in the Mount Everest region of Nepal. I worked closely with her to refine her study idea, organize research logistics, coordinate fieldwork, and evaluate her study findings. Upon the completion of her project, she applied successfully to Oxford for her master's degree.	McGill University
2011	Sara Statham - MA student in Geography. I mentored this student in the development and on-the-ground implementation of her community-based master's research project in Arctic Canada, a project that ultimately led her to a job with the Government of Nunavut working on food security issues in the context of climate change. Engagement with this student led to co-authored peer-reviewed publications.	McGill University
2010	Dawa Sherpa – Indigenous research assistant from Namche Bazar, Nepal Himalayas. I mentored this research assistant in various field research and interview methods as well as research ethics during two months of high elevation field work. Engagement with this research assistant led to a co-authored peer-reviewed publication.	McGill University
2008	Maueen Beck - BA student. I mentored this student in building solid climbing foundations and applying new skills in a mindful and safe manner. She went on to become a <a href="#">National Geographic Adventurer of the Year</a> .	University of Vermont
2008	Jared Drapala - BA student. I mentored this student in building solid climbing foundations and applying new skills in a mindful and safe manner. He went on to become an AMGA Certified Rock and Alpine Guide.	University of Vermont

## EMPLOYMENT HISTORY

Year(s)	Position	Institution
2020-2024	Project Leader - Canadian Mountain Assessment	University of Calgary
2020-2022	Banting Postdoctoral Fellow - Department of Geography	University of Zurich
2020	Research Assistant - Department of Geography	University of Zurich
2019-2020	Research Assistant - Department of Geography	University British Columbia
2019	Research Assistant - Institute for Resources, Environment, and Sustainability	University British Columbia
2018	Research Consultant - Department of Geography	University of Zurich
2017-2020	Photographer	N/A - Freelance
2012-2015	Owner-Operate & Lead Researcher	McDowell Environmental LLC
2009-2011	Research Assistant - Climate Change Adaptation Research Group	McGill University
2007-2008	Ice Climbing Guide	Eastern Mountain Sports Climbing School

## AFFILIATIONS

Organization	Role
Canadian Mountain Assessment	Project Leader
Department of Geography (University of Calgary)	Postdoctoral Associate
UN International Year of Glacier Preservation	National Steering Committee Member
Intergovernmental Panel on Climate Change (IPCC)	Contributing Author (2x)
Royal Canadian Geographical Society	Fellow
Canadian Association of Geographers	Member
Mountain Research Initiative	Affiliated Researcher
Mountain Partnership	Canadian Representative
Coldwater Laboratory (Global Water Futures Program)	Affiliated Researcher
American Alpine Club – Climate Task Force	Lead Social Scientist
Guardians of the Ice	Scientific Advisor



Alpinist Magazine	Scientific Advisor
Research Group on Environment and Climate: Impacts, Risks and Adaptation (ECLim) (University of Zurich)	Alumnus (Postdoc)
Institute for Resources, Environment, and Sustainability (University of British Columbia)	Alumnus (PhD)
Environmental Change Institute (University of Oxford)	Alumnus (MSc)
Department of Geography (McGill University)	Alumnus (BA)
Climate Change Adaptation Research Group (McGill University)	Lab Member (Alumnus)
Climate and Cryosphere Lab (University of British Columbia)	Lab Member (Alumnus)
Connecting Human and Natural Systems Lab (CHANS Lab) (University of British Columbia)	Lab Member (Alumnus)
Environment and Development: Gender, Equity, and Sustainability (EDGES) (University of British Columbia)	Lab Member (Alumnus)
Liu Institute for Global Issues (University of British Columbia)	Liu Scholar (Alumnus)
Public Scholar's Initiative (University of British Columbia)	Public Scholar (Alumnus)
Banff Centre for Arts and Creativity	Affiliated researcher (Alumnus)
Oxford University Mountaineering Club	Affiliated Climber (Alumnus)

## SCHOLARLY SERVICE

**Contributions to Major Initiatives:** I currently serve as the Project Leader for the Canadian Mountain Assessment, a national scale assessment of mountains systems in Canada based on both Indigenous and western academic knowledge. I have also served as a Contributing Author for the IPCC Special Report on the Oceans and Cryosphere in a Changing Climate ('High Mountain Areas' chapter) as well as the IPCC 6<sup>th</sup> Assessment Report ('Cross Chapter Paper on Mountains'). In addition, I am a member of the National Steering Committee (Canada) for the UN's upcoming International Year of Glacier Preservation, an advisor for Guardians of the Ice, and a member of the American Alpine Club's Climate Task Force. I was the co-founder of the Environmental Change and Transformations Network at the Liu Institute for Global Issues, and coordinator a weekly environmental research and policy speaker series at the University of British Columbia.

**Editorial Service:** I serve on the International Editorial Board of the journal Mountain Research and Development.

**Peer-Review:** I have served as a peer-reviewer for Cambridge University Press, Nature Sustainability, Annals of the American Association of Geographers, Transactions of the Institute of British Geographers, One Earth, Climatic Change, Climate and Development, Environmental Research Letters, Environment and Planning A, Environment and Planning E, Regional Environmental Change, Current Opinion in Environmental Sustainability, Frontiers in Ecology and the Environment, Global and Planetary Change, PLOS One, the Journal of Mountain Science,

and Mountain Research and Development. I have also served as an Expert Reviewer for the Intergovernmental Panel on Climate Change (IPCC), and a book proposal reviewer for Springer.

### ADDITIONAL INTERESTS

**Climbing** - I have been involved in rock, ice, and alpine climbing for two decades; have climbed in most major mountain ranges in North America as well as overseas destinations such as the French Alps, Norway, and the UK; and have worked professionally as an ice climbing guide. This background underpins my recent work on issues related to climbing and climate change.

**Visual Methods** - I believe that compelling images from the frontlines of climate change provide a strong complement to text-based communication approaches. To this end, I have been actively involved in the use of photography-based science communication methods for many years, including through several [photography exhibitions](#), publishing photos in popular and academic outlets (e.g. Nature Climate Change, VICE), and giving a [TEDx talk](#) that aimed to ‘de-abstract’ climate change by combining my photography with personal narratives from climate-affected communities. I received formal training in visual methods at the Banff Centre for Arts and Creativity.

### ACADEMIC REFERENCES

**Prof. Shawn Marshall**  
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