

KILEY LUKE DALEY

Research Assistant Professor, Climate Change Institute
Part-Time Instructor, Ecology and Environmental Sciences Program

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SCHOLARLY INTERESTS

Water and Sanitation, Ecosystem Approaches to Health, Indigenous Health, Arctic and Rural Regions, Human Health Risk Assessment, Participatory and Community-Based Research

EDUCATION

Ph.D. in Environmental Studies and Public Health, Dalhousie University, 2020
Master of Environmental Studies, Dalhousie University, 2013
Bachelor of Applied Management with First Class Honors, University of New Brunswick, 2004

EXPERIENCE

Academic

Research Assistant Professor, Climate Change Institute, University of Maine, 2022-Present
Part-Time Instructor, Ecology and Environmental Sciences Program, University of Maine, 2021-Present
Research Associate, Margaret Chase Smith Policy Center, University of Maine, 2020-2021
Research Assistant, School of Public Health, University of Alberta, 2019-2020
Research Associate, Centre for Water Resource Studies, Dalhousie University, 2010-2020
Human Health Analyst, Polar Knowledge Canada, Government of Canada, 2014-2016

Non-Academic

Program Lead, College of Extended Learning, University of New Brunswick, 2006-2010
Management Associate, The North West Company in Gjoa Haven and Taloyoak, Nunavut, 2004-2006

SCHOLARSHIP

Peer-Reviewed Publications

1. **Daley K**, Jamieson R, Rainham D, Truelstrup Hansen L, Harper SL (2022). Microbial risk assessment and mitigation options for wastewater treatment in Arctic Canada. *Microbial Risk Analysis*, 20: 100186.

2. **Daley K**, Jamieson R, Rainham D, Truelstrup Hansen L, Harper SL (2019). Screening-level microbial risk assessment of acute gastrointestinal illness attributable to wastewater treatment systems in Nunavut, Canada. *Science of the Total Environment*, 657: 1253-1264.
3. **Daley K**, Jamieson R, Rainham D, Truelstrup Hansen L (2018). Wastewater treatment and public health in Nunavut: A microbial risk assessment framework for the Canadian Arctic. *Environmental Science and Pollution Research*, 25(33): 32860-32872.
4. **Daley K**, Truelstrup Hansen L, Jamieson R, Hayward J, Piorkowski G, Krkosek W, Gagnon G, Castleden H, MacNeil K, Poltarowicz J, Corriveau E, Jackson A, Lywood J, Huang Y (2018). Chemical and microbial characteristics of municipal drinking water supply systems in the Canadian Arctic. *Environmental Science and Pollution Research*, 25(33): 32926-32937.
5. **Daley K**, Castleden H, Jamieson R, Furgal C, Ell L (2015). Water systems, sanitation, and public health risks in remote communities: Inuit resident perspectives from the Canadian Arctic. *Social Science and Medicine*, 135: 124-135. Designated as one of the *Most Impactful Articles* of 2015.
6. **Daley K**, Castleden H, Jamieson R, Furgal C, Ell L (2014). Municipal water quantities and health in Nunavut households: An exploratory case study in Coral Harbour, Nunavut, Canada. *International Journal of Circumpolar Health*, 73: 23843.
7. Castleden H, **Daley K**, Sloan Morgan V, Sylvestre P (2013). Settlers unsettled: Using field schools and digital stories to transform geographies of ignorance about Indigenous Peoples in Canada. *Journal of Geography in Higher Education*, 37(4): 487-499.

Invited Book Chapter

1. Castleden H, **Daley K**, Sloan Morgan V, Sylvestre P (2019). Settlers unsettled: Using field schools and digital stories to transform geographies of ignorance about Indigenous Peoples in Canada. *Out There Learning: Critical Reflections on Off-Campus Study Programs*. D Curran, C Owens, H Thorson, E Vibert (Eds). Toronto, Ontario: University of Toronto Press.

Technical Reports

1. Sorg MH, **Daley K** (January 2021). *Maine drug death report, January-September 2020*. Prepared for the Maine Office of the Attorney General.
2. Sorg MH, **Daley K** (Weekly Series 2020-2021). *Maine suspected overdoses and suicides - Weekly totals and potential COVID-19 impact*. Prepared for the Maine Office of Behavior Health.
3. Centre for Water Resources Studies, Dalhousie University including **Daley K** (March 2018). *Regulations for the discharge of non-sewage effluents to municipal wastewater facilities in the Northwest Territories*. Prepared for the Mackenzie Valley Land and Water Board.
4. Jamieson R, Greenwood M, **Daley K**, Hayward J (October 2016). *Proposed revisions to regulatory criteria for risk assessment of municipal wastewater treatment systems in Nunavut*. Prepared for the Department of Community and Government Services, Government of Nunavut.

5. Borel K, **Daley K**, Gonzalez R, Henderson M, Robson A (August 2016). *Wastewater reuse in the United States Army: A case study for greywater reuse on forward operating bases*. Prepared for the Center for Advancing Microbial Risk Assessment.
6. Truelstrup Hansen L, MacNeil K, **Daley K**, Poltarowicz J, Jamieson R (July 2015). *Drinking water quality: Source to tap monitoring in Coral Harbour, Nunavut*. Prepared for the Department of Community and Government Services, Government of Nunavut.
7. Truelstrup Hansen L, MacNeil K, **Daley K**, Poltarowicz J, Jamieson R (July 2015). *Drinking water quality: Source to tap monitoring in Iqaluit, Nunavut*. Prepared for the Department of Community and Government Services, Government of Nunavut.
8. Truelstrup Hansen L, MacNeil K, **Daley K**, Poltarowicz J, Jamieson R (July 2015). *Drinking water quality: Source to tap monitoring in Pangnirtung, Nunavut*. Prepared for the Department of Community and Government Services, Government of Nunavut.
9. Truelstrup Hansen L, MacNeil K, **Daley K**, Poltarowicz J, Jamieson R (July 2015). *Drinking water quality: Source to tap monitoring in Pond Inlet, Nunavut*. Prepared for the Department of Community and Government Services, Government of Nunavut.
10. Hayward J, **Daley K**, Centre for Water Resources Studies (March 2013). *Community report: Technical wastewater treatment and water related community health research in Coral Harbour, Nunavut*. Prepared for the Hamlet of Coral Harbour, Nunavut.
11. **Daley K**, Hayward J (September 2012). *“Go with the flow” event summary: A science and water education workshop for Coral Harbour, Nunavut youth*. Prepared for the Hamlet of Coral Harbour, Nunavut and community partners.

Policy Briefs

1. Margaret Chase Smith Policy Center including **Daley K** (March 2021). Maine Naloxone Distribution Initiative (MNDI) project-to-date totals. *MNDI Policy Brief 21-Q1*. University of Maine.
2. **Daley K** (June 2016). Alternatives and renewable energy in the North: Community-driven initiatives. *Polar Leads* 1(4). Polar Knowledge Canada.
3. **Daley K** (May 2016). Wastewater management: Northern solutions for Northern conditions. *Polar Leads* 1(2). Polar Knowledge Canada.
4. **Daley K** (April 2016). Meeting the Northern housing challenge. *Polar Leads* 1(1). Polar Knowledge Canada.
5. **Daley K** (December 2014). Arctic caribou contaminant monitoring provides important recommendations to inform Northern dietary choices. *Sustaining Arctic Observing Networks Canada Results Bulletin* 1(2). Polar Knowledge Canada.
6. **Daley K** (November 2014). Circumpolar working group assessing emerging climate-sensitive infectious diseases. *Sustaining Arctic Observing Networks Canada Results Bulletin* 1(1). Polar Knowledge Canada.

Papers in Progress

1. Sarkar PM, Camire C, Oehler B, **Daley K**, Daley A, Bell KP, Jain S. Water insecurity in the Arctic: A narrative review.
2. Reding Hoffart T, **Daley K**. Household water insecurity in the United States and Canada: A review of rural and urban geographies.

Invited Presentations

1. **Daley K** (November 2021) *Water for all? Examining water insecurity and health in the United States and Canada*. Sustainability Talks Series, Senator George J. Mitchell Center for Sustainability Solutions, University of Maine. Orono, Maine.
2. **Daley K** (March 2021) *Water, sanitation, and Inuit health in Nunavut, Canada*. 28th Annual Harold W. Borns Jr. Symposium, Climate Change Institute, University of Maine. Orono, Maine.
3. **Daley K** (November 2020). *Water, sanitation, and health in the Arctic: Research and community engagement*. UMaine Arctic Fall 2020 Seminar Series, University of Maine. Orono, Maine.
4. **Daley K** (September 2019). *Wastewater treatment in Nunavut: Health risks and mitigation options*. Water Treatment in Northern Environments Workshop, Institute National de la Recherche Scientifique. Québec City, Québec.
5. **Daley K** (September 2018). *Human health risk assessment of gastrointestinal illness attributable to Arctic wastewater treatment systems: A component of the Nunavut wastewater research program*. Water Treatment in Northern Environments Workshop, Institute National de la Recherche Scientifique. Québec City, Québec.

Conference Presentations

1. **Daley K**, Sarkar PM, Camire B, Oehler M, Daley A, Bell KP, Jain S (December 2022). *Water (in)security in Arctic communities*. ArcticNet Annual Scientific Meeting. Toronto, Ontario.
2. **Daley K** (November 2019). *Northern wastewater treatment: Assessing health risks and mitigation options*. Northern Territories Water and Waste Association Annual Conference. Iqaluit, Nunavut.
3. **Daley K**, Jamieson R, Rainham D, Truelstrup Hansen L, Harper SL (November 2019). *Arctic wastewater treatment: Associated microbial health risks and mitigation options* (Poster). Dalhousie University Arctic Research Symposium. Halifax, Nova Scotia.
4. **Daley K**, Jamieson R, Rainham D, Truelstrup Hansen L, Harper SL (December 2017). *Assessing exposure pathways and human health risks attributable to wastewater treatment practices in the Canadian Arctic*. ArcticNet Annual Scientific Meeting. Québec City, Québec.
5. **Daley K**, Jamieson R, Rainham D, Truelstrup Hansen L, Harper SL (June 2016). *Wastewater treatment and public health in remote Arctic communities: Exposure pathways and risk assessment*. Canadian Association of Geographers Conference. Halifax, Nova Scotia.

6. **Daley K**, Jamieson R, Rainham D, Castleden H, Truelstrup Hansen L, Harper SL, Furgal C, Ell L (April 2016). *The social context of drinking water, sanitation and public health in the Nunavut, Canada*. International Conference on Sanitation in Cold Climate Regions. Sisimiut, Greenland.
7. **Daley K**, Jamieson R, Rainham D, Truelstrup Hansen L, Harper SL (October 2015). *Exposure pathways and human health risks associated with wastewater treatment in Nunavut communities*. Workshop on Canadian Wastewater Treatment Plants and the Persistence of Antibiotic Resistant Bacteria. Halifax, Nova Scotia.
8. **Daley K**, Jamieson R, Rainham D, Truelstrup Hansen L (December 2014). *Assessing exposure pathways and human health risks related to wastewater treatment in Inuit communities* (Poster). ArcticNet Annual Scientific Meeting. Ottawa, Ontario.
9. **Daley K** (July 2014). *Human health risk assessment of wastewater treatment systems in remote Arctic communities: Proposal development*. Annual Gathering of Graduate Students, Indigenous Health Research. Burnaby, British Columbia.
10. **Daley K**, Castleden H, Jamieson R, Furgal C, Ell L (December 2013). *Understanding municipal water and health relationships in Nunavut households: A community case study in Coral Harbour, Nunavut*. ArcticNet Annual Scientific Meeting. Halifax, Nova Scotia.
11. **Daley K**, MacNeil K, Truelstrup Hansen L, Piorkowski G, Jamieson R, Castleden H, Centre for Water Resources Studies (November 2013). *Nunavut drinking water systems: An overview of the Dalhousie University 'Nunavut Drinking Water Research Program'*. Northern Territories Water and Waste Association Annual Conference. Iqaluit, Nunavut.
12. Castleden H, **Daley K**, Jamieson R, Furgal C, Ell L (August 2013). *A community perspective of drinking water, wastewater treatment and public health in Coral Harbour, Nunavut*. Canadian Association of Geographers Conference. St. John's, Newfoundland.
13. **Daley K**, Castleden H, Jamieson R, Furgal C (October 2012). *Understanding the water and health relationship in Nunavut households: A community case study in Coral Harbour*. Atlantic Division of the Canadian Association of Geographers Conference. Halifax, Nova Scotia.
14. **Daley K**, Castleden H, Jamieson R, Furgal C (April 2012). *Understanding water and health connections in Coral Harbour, Nunavut, Canada* (Poster). International Polar Year Conference. Montréal, Québec.
15. Hayward J, **Daley K**, Castleden H, Lam B, Krkosek W, Jamieson R (November 2011). *Nunavut wastewater research - A case study of Coral Harbour, Nunavut*. Northern Territories Water and Wastewater Association Annual Conference. Iqaluit, Nunavut.
16. Maheu A, **Daley K**, Swaruk J (April 2011). *Proposed implementation of Canadian Council of Ministers of the Environment wastewater guidelines in Nunavut*. Canadian Water Network Student and Young Professionals Workshop. Halifax, Nova Scotia.

GRANTS AND AWARDS

Research/Training Grants

Partnering with Farming Communities of South Greenland to Evaluate Changing Arctic Freshwater Resources (\$1,758,642; Co-Principal Investigator). Navigating the New Arctic, National Science Foundation. Submitted February 2023, In Review.

Convergence Working Group Early Career Fellow (\$10,000; Principal Investigator). Navigating the New Arctic Community Office, National Science Foundation. Submitted January 2023, In Review.

Collaborative Research: Identifying and Overcoming Barriers to Climate Change Adaptation and Mitigation across Northern New England (\$1,281,346; Co-Principal Investigator). Track-2 Focused EPSCoR Collaborations, National Science Foundation. Submitted January 2023, In Review.

Collaborative Research: Deciphering Climate-Lake Linkages in South Greenland with Paleolimnology, Remote Sensing and Indigenous Knowledge (\$1,053,999; Co-Principal Investigator). Arctic Natural Sciences, National Science Foundation. Submitted January 2023, In Review.

Greenland Water Quality in a Warming World (\$2,987,078; Senior Personnel). Navigating the New Arctic, National Science Foundation. Submitted December 2022, In Review.

A Pilot Study of Household Water Insecurity and Human Health in the Arctic (\$24,989; Co-Principal Investigator). UMaine Arctic Seed Grant, University of Maine. Awarded 2021.

Participatory Approach to Foster Arctic Food and Water Security in a Changing Climate (\$24,996; Co-Principal Investigator). UMaine Arctic Seed Grant, University of Maine. Awarded 2021.

Selected Awards

Research Stipend (\$201,000), Northern Wastewater Research Program, Dalhousie University, 2010-2020

Northern Scientific Training Program Grant (\$2,500), Canadian Polar Commission, 2018-2019

Ph.D. Scholarship (\$33,600), Faculty of Graduate Studies, Dalhousie University, 2015-2018

Nova Scotia Graduate Scholarship (\$15,000), Dalhousie University, 2016-2017

Travel Award (\$2,500), International Conference on Sanitation in Cold Climate Regions, Technical University of Denmark, Sisimiut, Greenland, 2016

Research Fellowship (\$20,000), Population Intervention for Chronic Disease Prevention, Canadian Institutes for Health Research, 2014-2015

Northern Scientific Training Program Grant (\$7,500), Aboriginal Affairs and Northern Development Canada, 2011-2015

Ph.D. Scholarship (\$40,000), Nasivvik Centre for Inuit Health and Changing Environments, Institute of Aboriginal Peoples' Health, Canadian Institutes of Health Research, 2012-2014

TEACHING

Undergraduate and Graduate Courses

Instructor, *Critical Issues in Ecology and Environmental Sciences* (EES 489, Senior Capstone), University of Maine, Fall 2021 and Fall 2022

Co-Instructor, *Arctic Complex Systems* (EES 590), University of Maine, Spring 2022

Co-Instructor, *Arctic Interdisciplinary Research Seminar* (EES 598), University of Maine, Spring 2022

Instructor, *One Health and the Environment Convergent Practice* (EES 598), University of Maine, Fall 2021

Guest Lectures and Other Teaching Experience

Guest Lecture, *Arctic Research Forum* (EES 598), University of Maine, Fall 2021 and Fall 2022

Co-instructor, *Greenland Field Experience* (Systems Approaches to Understanding and Navigating the New Arctic, National Science Foundation Research Traineeship Program), University of Maine, Summer 2022

Guest Lecture, *Water and Sanitation in Developing Communities* (JP151A), Colby College, Spring 2022

Co-Instructor, Scientific writing module of the *Accelerating New Environmental Workskills* Research Experiences for Undergraduates Program (Sponsored by National Science Foundation), University of Maine, Summer 2021

Guest Lecture, *One Health Science and Policy* (EES 590), University of Maine, November 2020

ADVISING AND MENTORING

Amanda Gavin, Ph.D. Ecology and Environmental Sciences, Climate Change Institute, University of Maine (Committee)

James Greenwood, B.S. Ecology and Environmental Sciences, University of Maine (Honors Committee)

Tegwin Taylor, Ph.D. Ecology and Environmental Sciences, University of Maine (Committee)

Tess Reding Hoffart, *Accelerating New Environmental Workskills* Research Experiences for Undergraduates Program (Sponsored by National Science Foundation), University of Maine, Summer 2021 (Research Mentor)

Václava Hazuková, Ph.D. Ecology and Environmental Sciences, Climate Change Institute, University of Maine (Committee)

SERVICE

Service to Profession and University

Session Co-Facilitator (Convergence Cohort: Deepening Cross-Institution Missions and Commitments to Meaningful, Coordinated Arctic Research), National Science Foundation Navigating the New Arctic Annual Meeting, 2022

Session Co-Chair (Inuit Health, Education, and Adaptation), ArcticNet Annual Scientific Meeting, 2022

Service in Reviewing Papers: Australian and New Zealand Journal of Public Health; Environment International; Environmental Challenges; Environmental Science and Pollution Research; International Journal of Environmental Health Research; Social Science and Medicine

Student Symposium Judge, Center for Undergraduate Research, University of Maine, 2021

Planning Committee for Research Retreat, Population Intervention for Chronic Disease Prevention, Canadian Institutes for Health Research, 2015

Session Chair (Community Adaptation and Vulnerability), ArcticNet Annual Scientific Meeting, 2013

Public Service

Advised local governments on water-health issues in Nunavut, Canada, 2010-2020

Organized youth science camps and school presentations in Nunavut, Canada, 2010-2020

MEDIA AND POPULAR SCIENCE MENTIONS

IMPACT UMaine Research Newsletter (February 2023) *Learning and growing through UMaine Research* by President Joan Ferrini-Mundy.

Northern Territories Water and Waste Association Trade Magazine (November 2020). *Water quantity and health in Coral Harbour households.*

Environmental Science and Engineering Magazine (February 2016). *Water and wastewater treatment challenges in Canada's North.*

CBC News North (April 2014). *In Coral Harbour, overcrowded homes run out of water.*

Coral Harbour, Nunavut Community Radio (March 2012). *Water and community health.*

AFFILIATIONS AND MEMBERSHIPS

Other Affiliations at University of Maine

Systems Approaches to Understanding and Navigating the New Arctic, National Science Foundation Research Traineeship Program, Senior Faculty

Canadian-American Center, Affiliate
Initiative for One Health and the Environment, Faculty Participant
UMaine Arctic, Network Member

Professional Memberships

Association for Polar Early Career Scientists
Community of Practice in Ecosystem Approaches to Health
Maine Water Environment Association
Northern Territories Water and Waste Association

PROFESSIONAL DEVELOPMENT AND SPECIALIZED TRAINING

Professional Development

Grants Academy, Office of Research Development, University of Maine, 2022-2023
Creating Connections, Alan Alda Center for Communicating Science, Stony Brook University, 2022
Science Communication with Arctic Communities, National Science Foundation Navigating the New Arctic Learn and Connect Series, 2022
Transparent and Inclusive Assignments, Center for Innovation in Teaching and Learning, University of Maine, 2022
Introduction to Brightspace, Center for Innovation in Teaching and Learning, University of Maine, 2021
Introduction to Successful Teaching Strategies, Center for Innovation in Teaching and Learning, University of Maine, 2021
Research Impact Challenge, Raymond H. Fogler Library, University of Maine, 2020

Specialized Training

Quantitative Microbial Risk Assessment, Michigan State University (Sponsored by United States National Institutes of Health), 2016
Population Intervention for Disease Prevention, University of Waterloo (Sponsored by Canadian Institutes for Health Research), 2014-2015
Ecosystem Approaches to Health, University of Northern British Columbia (Sponsored by Public Health Agency of Canada), 2013