

RYAN CALDER

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EDUCATION	Expected	ScD, Harvard University
	May 2017	Environmental Health, T.H. Chan School of Public Health. Dissertation: 'Hydroelectric Development and Indigenous Health'. Advisor: Elsie M. Sunderland.
	2012	MASc, Concordia University, Canada Civil Engineering. Thesis: 'Water Quality Modeling, Risk Analysis and Decision-Making: an Integrated Study'. Advisors: Samuel S. Li and Ketra A. Schmitt.
	2010	BEng, Concordia University, Canada Civil Engineering with distinction.
RESEARCH		Harvard University
EXPERIENCE	Since 2012	Research assistant Developed predictive model for methylmercury exposures resulting from hydroelectric flooding. Led team of 22 interviewers in dietary survey and exposure assessment of 1,145 Labrador Inuit. Biogeochemical, fluid dynamics and statistical modeling.
		Concordia University, Canada
	2009-12	Research assistant Developed a computational model for a multi-zone air-lift wastewater reactor. Risk modeling and environmental policy analysis.
TEACHING		Harvard University
	2013-14	Teaching assistant , T.H. Chan School of Public Health Supervised student projects, graded assignments and delivered select lectures. - Water Pollution - Introduction to Environmental Health
		Concordia University, Canada
	2011-12	Teaching assistant Led weekly tutorials, supervised student projects and graded assignments. - Risk Analysis in Information Systems Engineering - Mechanics of Materials
	2009-10	Tutor on duty One of two students selected by the Department of Building, Civil & Environmental Engineering to tutor core undergraduate engineering curriculum.
PROFESSIONAL		GHD , Montreal, Canada
EXPERIENCE	2012	Engineer Led industrial water quality characterizations across Quebec. Hydraulic design for stormwater and wastewater management.
	2010-12	Junior engineer Developed a decision model for wastewater treatment investment.
	2008-10	Engineering technician English-French technical translation and report-writing. Environmental sampling.
		Quebec Ministry of Environment , Sherbrooke, Canada
	2007	Analyst (intern) , environmental hydraulics Analysis of water infrastructure design plans for compliance with the Environment Quality Act and regulations.

REFEREED
PAPERS

RSD Calder and EM Sunderland. ‘Methylmercury exposures and the nutritional impacts of dietary advisories among indigenous communities’ (in prep).

RSD Calder, AT Schartup, M Li, AP Valberg, PH Balcom and EM Sunderland. ‘Future impacts of hydroelectric power development on methylmercury exposures of Canadian indigenous communities’ in *Environ Sci Technol* (in press; DOI: 10.1021/acs.est.6b04447).

AT Schartup, PH Balcom, AL Soerensen, KJ Gosnell, **RSD Calder**, RP Mason and EM Sunderland (2015). ‘Freshwater discharges drive high levels of methylmercury in Arctic marine biota’ in *Proc Natl Acad Sci*, Vol. 112 (38), pp. 11789-94.

RSD Calder and KA Schmitt (2015). ‘Decentralised drinking water regulation: risks, benefits and the hunt for equality in the Canadian context’ in *Int J Water*, Vol. 9 (2), pp. 178–93.

RSD Calder, L Yerushalmi and SS Li (2013). ‘Computational Fluid Dynamics Model of a BioCAST Multi-environment Air-lift Bioreactor’ in *J Environ Eng*, Vol. 139 (6), pp. 849-63.

RSD Calder and KA Schmitt (2010). ‘The Role of Detection Limits in Drinking Water Regulation’ in *Environ Sci Technol*, Vol. 44 (21), pp. 8008-14.

POLICY REPORTS

AT Schartup, **RSD Calder**, M Li, PH Balcom, AP Valberg, J Ewald and EM Sunderland (2016). ‘Methylmercury’ in A Durkalec, T Sheldon and T Bell (Eds.), *Lake Melville: Avativut, Kanuittailinnivut. Scientific Report* (pp. 49–61). Nain, Canada: Nunatsiavut Government.

KA Schmitt and **RSD Calder**. ‘Keeping Drinking Water Safe and Economically Sustainable: Understanding the Drivers of Regulatory Change to Create Anticipatory Drinking Water Policy’ in *Engineering Dimensions*, Jan/Feb 2011, pp. 27–30.

LETTERS

RSD Calder; J Liddie; EM Sunderland; S Shankar; K Tian; G Touloumes and C Wagner (2015). Re: US EPA Science Advisory Board review of the Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources. Hydraulic Fracturing Review Advisory Panel. Docket ID EPA-HQ-OA-2015-0245.

KA Schmitt and **RSD Calder**. Response to Comment on “Role of Detection Limits in Drinking Water Regulations” in *Environ Sci Technol*, Vol. 45 (2), p. 836.

CONFERENCE
PRESENTATIONS

RSD Calder, AT Schartup, M Li, AP Valberg, PH Balcom and EM Sunderland (2016). ‘Future impacts of hydroelectric power development on methylmercury exposures of Canadian indigenous communities’, Society of Environmental Toxicology and Chemistry, 2016, Orlando FL.

RSD Calder and KA Schmitt (2011), ‘Decision model for management of sewage plumes in a tidal environment’, Society for Risk Analysis, Charleston SC.

RSD Calder and KA Schmitt (2011), ‘Probabilistic risk assessment for management of sewage plumes in a tidal environment, Canadian Association on Water Quality, Quebec City, Canada.

SELECT AWARDS & SCHOLARSHIPS

Canada Graduate Scholarship (CGS-D), Natural Sciences and Engineering Research Council of Canada (declined and accepted PGS-D for tenure outside Canada) 2014-16.

Postgraduate Scholarship (B1), Fonds de recherche du Québec – nature et technologies (ranked first in earth, atmosphere and water sciences; declined) 2014.

Horace W. Goldsmith Fellowship, Harvard University, 2012–14.

Power Corporation of Canada Graduate Fellowship, Concordia University, 2011–12.

Student Merit Award, Society for Risk Analysis Ecological Risk Assessment Specialty Group (sole winner) 2011.

Graduate Scholarship, Fondation Universitaire Pierre Arbour, 2010-12.

Steve Bonk Scholarship, Canadian Water & Wastewater Association (sole winner, national) 2009.

STUDENT MENTORSHIP

Harvard University

2015–16 **Harry Stone, SB 2016**
Supervised and provided technical assistance for senior thesis consisting of the development of a mechanistic model for mercury cycling in an artificial reservoir.

2015 **Madeleine Bartzak, MPH 2016**
Supervised master’s practicum. Quantification of risks and benefits for Inuit diet.

2013–14 **Angela Jiang, SB 2017**
Supervised summer research assistantship processing and analyzing dietary survey data.

2013 **Harvard College Global Health Review**
Graduate student mentor

SELECT MEDIA COVERAGE

“Canada’s Big Dams Produce Clean Energy, and High Levels of Mercury”, *New York Times*, Nov. 10, 2016

CBC Radio One: Labrador Morning, interview, Nov. 10, 2016

“How Dams Risk Poisoning Indigenous Diets”, *The Atlantic*, Nov. 9, 2016

“Not just Muskrat Falls: Harvard study identifies higher health risk in 11 other hydro projects”, *CBC News*, Nov. 9, 2016

Radio-Canada Première: Le 6 à 9, interview, Jul. 2, 2015

“Should Drinking Water Be Centralized or Decentralized?” *Science Daily*, Jun. 30, 2015

“Debunking the Detection Limit Myth”, *Chemical & Engineering News*, Oct. 14, 2010

PERSONAL

Citizenship: Canada

Languages: Native fluency in English and French. Working knowledge of German and Czech.