Margaret Insley
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Education

1997	**Ph.D. (Economics),** University of Guelph, Guelph, Ontario. Thesis Title: "The Economics of Efficient Information Acquisition for Environmental Policy Making: Sequential Decisions Under Uncertainty"
1990	**CFA (Chartered Financial Analyst)** Association for Investment Management and Research Charlottesville, Virginia
1983	**M.A. (Economics),** University of Alberta, Edmonton, Alberta, Canada Thesis Title: "Resource Rents and the Potential for Diversification of a Small Regional Economy: The Case of Alberta"
1979	**B.A. (Economics),** University of Calgary, Calgary, Alberta, Canada

Experience

August 2023 – present	**Professor Emeriti,** Department of Economics, University of Waterloo, Waterloo, Ontario
August 2023 – present	**Adjunct Associate Professor**, Department of Economics, University of Waterloo, Waterloo, Ontario
2008 – 2023	**Associate Professor,** Department of Economics, University of Waterloo, Waterloo, Ontario
January 2010-July 2011	**Associate Chair**, Graduate Studies, Department of Economics, University of Waterloo

July 2002 – June 2008	**Assistant Professor,** Department of Economics, University of Waterloo, Waterloo, Ontario
2001- 2002	**Research Associate**, Department of Agricultural Economics and Business, University of Guelph, Guelph, Ontario
2000-2001	**Principal**, Forsyth Consulting, Waterloo, Ontario
1998-2000	**Assistant Professor**, Department of Economics, Wilfrid Laurier University, Waterloo, Ontario. Definite term appointment
1997-1998	**Assistant Professor**, Department of Economics, University of Waterloo, Waterloo, Ontario. Definite term appointment.
1996-1997	**Lecturer**, School of Business and Economics, Wilfrid Laurier, University, Waterloo, Ontario
	Lecturer, Department of Economics, University of Guelph, Guelph, Ontario
1990 - 1992	**Lecturer**, School of Business and Economics, Wilfrid Laurier University, Waterloo, Ontario.
1988 – 1990	**Consulting Economist** to Brent Friedenberg Associates Ltd
1981-1987	**Economist**, Nova Corporation, Calgary, Alberta

Courses Taught

Undergraduate:

Natural resource economics (second and third year courses); Macroeconomic Theory (second year); International Finance (third year); Environmental Economics (third year); Cost-benefit analysis (third year); Microeconomic theory (second year)

Graduate

- Real options and investment under uncertainty
- Natural resource economics

Research Interests

Natural resource economics, environmental economics, decision making under uncertainty, real options, stochastic optimal control, computational economics

Research Grants

2022

Interdisciplinary Trailblazer Grant, Co-application, "Supporting water management decisions with modern economic risk assessments," $60k. PI is Andrea Brookfield, Department of Earth and Environmental Sciences, University of Waterloo.

2021

Water Institute Seed Grant, Co-applicant "Supporting decisions about groundwater extraction for irrigation with modern economic risk assessments," $17k. PI is Andrea Brookfield, Department of Earth and Environmental Sciences, University of Waterloo.

2016 – 2019

Global Risk Institute, "A multi-period mean-variance approach to risk and return in climate change policy," $120,000, Co-investigator is Peter Forsyth.

2009-2012

Social Sciences and Humanities Research Council of Canada (SSHRC), Canadian Environmental Issues, Special Call Research Grants, **"**Environmental Regulation of the Alberta Oil Sands." $124,200; Co-investigator is Alain-Désiré Nimubona.

2006/2006 – 2008/2009

Ontario Centre of Excellence (E-TECH), "Ramping Rate at Hydroelectric Dams, Knowledge and Tools for Balancing Aquatic Ecology, Power Generation, and Economics", $48,000, which includes $30,000 contributed by industry partners; Principle Investigator: Michael Power, Department of Biology, University of Waterloo.

2004/05 – 2007/08

Social Sciences and Humanities Research Council of Canada (SSHRC), Standard Research Grant, Total value $103,500. Research program: Natural resource regulation under uncertainty: a real options approach.

2002-2005

Collaborator on a grant from the Sustainable Forest Management Network (A Network Centre of Excellence based at the University of Alberta, Edmonton Alberta,

http://sfm-1.biology.ualberta.ca/english/home/) to fund a research project entitled "Risk Management for Sustainable Forestry". Approximately $45,000 per year.

Articles published in refereed journals

- Margaret Insley. Environmental bonds and public liability for resource extraction site cleanup. *Energy Economics, December* 2025.

- Yichun Huang and Margaret Insley. The impact of water conservation regulations on mining firms: A stochastic control approach, *Water Resources and Economics*, vol 36, 2021 (October).
- Sara Aghakazemjourabbaf and Margaret Insley, Leaving your tailings behind: Environmental bonds, bankruptcy and waste cleanup, *Resource and Energy Economics*, 65, August 2021.

- Margaret Insley, Tracy Snoddon, and Peter A. Forsyth, Strategic interactions and uncertainty in decisions to curb greenhouse gas emissions, *Frontiers of Economics in China,* 16, Special Issue on the Frontiers of Environmental Economics, June 2021.

- Margaret Insley and Peter Forsyth, "Climate games: Who's on first? What's on second?" *Actualité économique*, vol. 95, no 2-3, 2019, Special issue in memory of Pierre Lasserre.

- Margaret Insley, "Resource extraction with a carbon tax and regime switching prices: Exercising your options," *Energy Economics*, 67, 1-16, 2017.

- Shilei Niu and Margaret Insley, "An options pricing approach to ramping rate restrictions at hydro power plants," *Journal of Economic Dynamics and Control,* 63, 25-52, 2016.

- Abdullah Almansour and Margaret Insley, "The impact of stochastic extraction cost on the value of an exhaustible resource: An application to the Alberta oils sands," *Energy Journal,* 37(2), 2016.

- Shilei Niu and M. Insley, "On the economics of ramping rate restrictions at hydro power plants: Balancing profitability and environmental costs," *Energy Economics*, 39, 39-52, September 2013.

- S. Chen and M. Insley, "Regime switching in stochastic models of commodity prices: An application to an optimal tree harvesting problem," *Journal of Economic Dynamics and Control,* 36(2), 201-219, February 2012.

- M. Insley and T. Wirjanto, “Contrasting two approaches in real options valuation: contingent claims versus dynamic programming,” *Journal of Forest Economics*, 16(2), 157-176, April 2010.

- M. Insley and M. Lei, “Hedges and trees: incorporating fire risk into optimal decisions in forestry using a no-arbitrage approach,” *Journal of Agricultural and Resource Economics*, 32(3): 492-514, December 2007.

- M. Insley and K. Rollins, “On solving the multi-rotational timber harvesting problem with stochastic prices: a linear complementarity approach,” *American Journal of Agricultural Economics*, **87(**3), 735-755, 2005.

- M. Insley, “On the option to invest in pollution control under a regime of tradable emissions allowances,” *Canadian Journal of Economics,* **36(**4), 860-883, 2003.

- M. Insley, “A Real Options Approach to the Valuation of a Forestry Investment,” *Journal of Environmental Economics and Management,* **44**, 471-492, 2002.

- M. Forsyth (now Insley), “On the Option Value of Preserving a Wilderness Area,” *Canadian Journal of Economics*, **33(**2), 413-434, May 2000.

- M. Forsyth (now Insley), “The Economics of Site Investigation for Groundwater Protection: Sequential Decision-Making under Uncertainty,” *Journal of Environmental Economics and Management,* **34(**1), pages 1-31, Sept. 1997.

- M. Forsyth (now Insley) and J. Van Leeuwan, “Making Trade-offs for Agroecosystem Health,” *Ecosystem Health*, **3**, (2), 82-93, June, 1997.

- K. Rollins, M. Forsyth (now Insley), S. Bonti-Ankomah, B. Amoah, “A Financial Analysis of a White Pine Improvement Cut in Ontario,” *Forestry Chronicle*,**71**, no. 4, pages 466-472 (1995).

Recent conference presentations

“Environmental bonds and public liability for resource extraction site cleanup” presented at

- European Association of Environmental and Resource Economists (EAERE) annual conference, June 16-19, 2025, Bergen, Norway.
- Canadian Resource and Environmental Economics Conference, October 2024, Kelowna BC.
- Canadian Economics Association Annual Conference, June 2024.
- International Conference on Computational Finance —ICCF24, Amsterdam, April 2024.

"Conditional value at risk for decision-making under uncertainty" presented at:

- Association of Environmental and Resource Economists Workshop, Virtual conference held June 3-5, 2020.

"Climate Change and Conditional Value at Risk" presented at:

- Montreal Environmental and Resource Economics Workshop, November 2019

"Climate Games: Who's on first? What's on second?" presented at:

- Canadian Economics Association Annual Conference, June 2019, Banff, Alberta.
- European Association of Environmental and Resource Economists 24th Annual Conference, June 2019, Manchester, U.K.
- International Conference on Computational Finance 2019, A Coruna, Spain, July 2019.

"Strategic interactions and uncertainty in decisions to curb greenhouse gas emissions" presented at:

- Shanghai University of Finance and Economics, Conference on "Frontiers of environmental and resource economics", December 9 – 10, 2019.
- Canadian Economics Association Annual Conference, June 2018, Montreal, Canada.
- World Congress of Environmental and Resource Economists, June 2018, Gothenburg, Sweden.
- 14th Viennese Conference on Optimal Control and Dynamic Games, Vienna University of Technology, July 2018, Vienna, Austria.

"Timing of climate change policies: a differential game under uncertainty" presented:

- Montreal Workshop in Environmental and Resource Economics in Memory of Pierre Lasserre, October 2017, Montreal, Canada.
- European Association of Environmental and Resource Economists, Annual Conference, June 2017, Athens, Greece.

Graduate Student Supervision

- **PhD supervision**
  - Xinyuan Yang, 2022
  - Yichun Huang, 2020
  - Sara Aghakazemjourabbaf, 2019
  - Shilei Niu, 2014, co-supervisor with Dr. Tony Wirjanto
  - Abdullah Almansour, 2012, co-supervisor with Dr. Tony Wirjanto

- Shan Chen, 2010, co-supervisor with Dr. Tony Wirjanto
- Shirra Freeman, 2010, University of Haifa, Department of Geography and Environmental Studies, co-supervisor with Dr. Deborah Shmueli

- **Ongoing PhD supervision and advisory committees**
  - Boyao Tian, Department of Earth and Environmental Sciences, University of Waterloo, Advisory Committee
  - Khusro Mir, Advisory Committee

- **PhD Examining and Advisory Committees**
  - Khusro Mir, 2025, Advisory Committee, Supervisor: Roy Brower.
  - Greg Galay, 2017, University of Guelph, External examiner
  - Mauricio Zelaya, 2014, Supervisors: Joel Blit and Anindya Sen
  - Chao Qiu, Actuarial Science, External Examiner, January 2013
  - Soonyoung Yu, Department of Earth and Environmental Science, University of Waterloo, 2009
  - Qian Wang, Systems Design Engineering, University of Waterloo, 2011
  - Skander Ben Abdallah, Department of Economics, Université du Québec à Montréal (UQAM), 2009

- **Masters**
  - Ghazal Memartoluie, 2010, MA
  - Sara Rohany Tabatabaei, 2010, MA
  - Sarah McFalls, 2009, MA
  - Bryan Icyk, 2006, MSc in Faculty of Environmental Studies, co-advising with Dr Ian Rolands
  - Mehdi Beyhaghi, 2006, MA
  - Ninga Liao, 2005, MA
  - Narisa Jotiban, 2003, MA