

LUCIJA ANNA MUEHLENBACHS

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EDUCATION

- Ph.D. Agricultural and Resource Economics, University of Maryland, 2004-2009
“Internalizing Production Externalities: A Structural Estimation of Real Options in the Upstream Oil And Gas Industry,” Committee: John Rust (Co-Chair), Marc Nerlove (Co-Chair), Andreas Lange, Lars Olson, Steven Gabriel.
- M.S. Agricultural and Resource Economics, University of Maryland, 2008
- B.S. Physical Sciences and Japanese, University of Alberta, 2002, Dean’s Honor Roll

EMPLOYMENT

- Associate Professor, University of Calgary, Department of Economics, July 2018-present
- Assistant Professor, University of Calgary, Department of Economics, January 2014-2018
- Fellow, Resources for the Future, Washington, D.C., July 2010-January 2014

OTHER POSITIONS

- University Fellow, Resources for the Future, Washington, D.C., 2017-present
- Visiting Faculty Member, Columbia University, Center on Global Energy Policy, 2023
- Research Fellow, University of Calgary, School of Public Policy, 2018-present
- Affiliate Researcher, Swiss Federal Institute of Technology (ETH Zurich), 2014-present
- Visiting Fellow, London School of Economics, Grantham Research Institute, 2017
- Visiting Fellow, Resources for the Future, Washington, D.C., 2014-2017
- Editor, Tribune Media Services, Glens Falls, NY, 2002-2004

EDITORIAL POSITIONS

- Editorial Council, *Journal of the Association of Environmental and Resource Economists*, 2024-present
- Editorial Board, *Review of Environmental Economics and Policy*, 2021-present
- Editorial Council, *Land Economics*, 2021-present
- Co-Editor, *Journal of Environmental Economics and Management*, 2019-2023
- Editorial Advisor, *Canadian Journal of Economics*, 2018-2023
- Co-Editor, *Resource and Energy Economics*, 2019-2022
- Editorial Council, *Journal of Environmental Economics and Management*, 2016-2019

PUBLICATIONS

- Bakkensen, L., L. Ma, L. Muehlenbachs, and L. Benitez, “Cumulative Impacts in Environmental Justice: Insights from Economics and Policy,” *Regional Science and Urban Economics*, Forthcoming.

- Campa, P., and L. Muehlenbachs, 2024, "Addressing Environmental Justice through In-Kind Court Settlements," *American Economic Journal: Economic Policy*, 16(1).
- Muehlenbachs, L., S. Staubli and, Z. Chu, 2021. "The Accident Externality from Trucking: Evidence from Shale Gas Development," *Regional Science and Urban Economics*, 88.
- Swiedler, E., L. Muehlenbachs, Z. Chu, J. Shih, A. Krupnick, 2019, "Should Solid Waste from Shale Gas Development be Regulated as Hazardous Waste?" *Energy Policy*, 129:1020-1033
- Hausman, C. and L. Muehlenbachs, 2019, "Price Regulation and Environmental Externalities: Evidence from Methane Leaks," *Journal of the Association of Environmental and Resource Economists*, 6(1): 73-109.
- Linn, J. and L. Muehlenbachs, 2018, "The Heterogeneous Impacts of Low Natural Gas Prices on Consumers and the Environment," *Journal of Environmental Economics and Management*, 89: 1-28.
- Ho, J, J. Shih, L. Muehlenbachs, C. Munnings, and A., Krupnick, 2018, "Managing Environmental Liability: An Evaluation of Bonding Requirements for Oil and Gas Wells in the United States," *Environmental Science & Technology*, 52(7): 3908-3916.
- Muehlenbachs, L., Staubli, S., and M.A. Cohen. 2016. "The Impact of Team Inspections on Enforcement and Deterrence," *Journal of the Association of Environmental and Resource Economists*, 3(1): 159-204.
- Muehlenbachs, L., E. Spiller, and C. Timmins. 2015. "The Housing Market Impacts of Shale Gas Development," *American Economic Review*, 105(12): 3633-59.
- Shih, J., J.E. Saiers, S.C. Anisfeld, Z. Chu, L. Muehlenbachs, and S. Olmstead. 2015. "Characterization and analysis of liquid waste from Marcellus Shale gas development," *Environmental Science & Technology*, 49(16): 9557-9565.
- Muehlenbachs, L. 2015. "A Dynamic Model of Cleanup: Estimating Sunk Costs in Oil and Gas Production," *International Economic Review*, 56(1): 155-185.
- Mason, C., L. Muehlenbachs, and Olmstead, S. 2015. "The Economics of Shale Gas Development," *Annual Review of Resource Economics*, 7(1).
- Graham, J., X. Tang, J. Irving, S. Sellers, J. Crisp, D. Horwitz, D. Carey, L. Muehlenbachs, A. Krupnick. 2015. "Increased Traffic Accident Rates Associated with Shale Gas Drilling in Pennsylvania," *Accident Analysis & Prevention*, 74: 203-209.

Olmstead, S., L. Muehlenbachs, J. Shih, J. Chu, and A. Krupnick. 2013. “Shale Gas Development Impacts on Surface Water Quality in Pennsylvania,” *Proceedings of the National Academy of Sciences*, 110 (13):4962–4967.

Muehlenbachs, L. M.A., Cohen, and T. Gerarden. 2013. “The Impact of Water Depth on Safety and Environmental Performance in Offshore Oil and Gas Production,” *Energy Policy*, 55: 699-705.

Alberini, A., A. Chiabai, and L. Muehlenbachs. 2006. “Using Expert Judgement to Assess Adaptive Capacity to Climate Change: Evidence from a Conjoint Choice Survey,” *Global Environmental Change*, 16: 123–144.

WORK IN PROGRESS

Brown, D., and L. Muehlenbachs, “The Value of Electricity Reliability: Evidence from Battery Adoption” revisions requested at *Journal of Public Economics*

Wheeler, L., and L. Muehlenbachs, “Drained Away: Oil Lost from First Nations Reserves”

OTHER PUBLICATIONS

L. Muehlenbachs “What I Wish I had Known before Starting as a PhD Student,” Thriving in Economics: PhD Student Edition, crowdsourced e-book, Deryugina, T, Ed.

Hallak, A., Jensen, A., Lybbert, G. and Muehlenbachs, L., 2021. “The Oil Production Response to Alberta’s Government-Mandated Quota,” University of Calgary, School of Public Policy Publications.

Muehlenbachs, L. “80,000 Inactive Oil Wells: A Blessing or a Curse?” University of Calgary School of Public Policy SPP Briefing Paper, 10(3), 2017.

Muehlenbachs, L. and S. Olmstead, “Hydraulic Fracturing and Water Resources,” 2014, *Choices*

PERMANENT WORKING PAPERS

Muehlenbachs, L., E. Spiller, and C. Timmins, “Shale Gas Development and Property Values: Differences across Drinking Water Sources,” NBER Working Paper No. 18390, September 2012.

Muehlenbachs, L., E. Newcomb-Sinha and N. Sinha, “Politics and the Strategic Release of News at the EPA,” RFF Discussion Paper 11-45, October 2011.

Muehlenbachs, L., E. Newcomb-Sinha and N. Sinha, “Hitting the violators where it hurts? Stock market reaction to USEPA press releases”

RESEARCH GRANTS

Principal Investigator, “Inequities in oil production,” SSHRC Insight Grant, \$67,971 (2023-2026) Co-Applicant: Laurel Wheeler.

Principal Investigator, “NO_x Budget Trading Program on ozone formation,” RFF’s Retrospective Analysis of Federal Environmental Regulation, \$20,000 (2023-2024), Co-Applicant: Lala Ma.

Co-Applicant, “Pathways to mitigating methane emissions from inactive oil and gas wells,” NSERC Alliance Missions Grant, \$746,000 (2023-2026) PI: Mary Kang.

Co-Applicant, “Closing the Gap: The Impact of Oil and Gas Regulations on Producing First Nations,” Future Energy Systems, \$67,000 (2021-2022) PI: Laurel Wheeler.

Principal Investigator, “Costs and Benefits of In-kind Settlements: Evidence from Environmental Enforcement Cases,” SSHRC Insight Grant, \$54,607 (2020-2023) Collaborator: Pamela Campa.

Co-Applicant, “Penalties in Cash or In-kind?” FORMAS, 2.1 million SEK (2019-2022) PI: Pamela Campa.

Co-Applicant, “Impact of residential proximity to hydraulic fracturing sites on human reproduction and child development,” New Frontiers in Research Fund – Exploration, \$250,000 (2019-2021) PI: Amy Metcalf.

Co-Principal Investigator, “Rate of Return Regulation and Environmental Externalities: Evidence from Natural Gas,” NBER/Sloan Foundation: The Future of Energy Distribution, (2016-2018) Co-PI: Catherine Hausman.

Principal Investigator, “Rate of Return Regulation and Environmental Externalities: Evidence from Natural Gas,” SSHRC Insight Development Grant, \$30,870 (2016-2018). Collaborator: Catherine Hausman.

Co-Investigator, “Understanding the Impacts of Shale Gas and Oil Development on Local Communities,” \$308,088 (2015-2016), Smith Richardson Foundation, PI: Alan Krupnick.

Co-Investigator, “Subsurface impacts of hydraulic fracturing (including contamination, seismic sensitivity, and groundwater use and demand management),” Canadian Water Network, \$120,000 (2014-2015). PI: Cathy Ryan. Co-Investigators: Daniel Alessi, David Eaton, Bernhard Mayer, Uli Mayer, John Molson, Beth Parker.

Principal Investigator, “Inspection Group Dynamics and Deterrence,” National Science Foundation, SES-1251916, \$77,994 (2013-2015). Co-PI: Mark Cohen.

Co-Investigator, “Regulating Risks from Shale Gas Development,” Sloan Foundation, \$1,171,667 (2011- 2012). PI: Alan Krupnick; Co-Investigators: Sheila Olmstead, Juha Siikamaki, Jhih-Shyang Shih.

Co-Principal Investigator, “Analysis of BOEMRE Enforcement and Compliance Data,”
National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling,
\$50,000 (2010-2011). Co-PI: Mark A. Cohen.

RESEARCH IN THE MEDIA

Ph.D. Dissertation: *Alberta Views*

Politics and the Strategic Release of News at the EPA: *E&E News PM, The Hill, Oil and Gas Journal, Washington Post, USA today*

Shale Gas Development and Property Values: Differences across Drinking Water Sources: *Chicago Policy Review, EnergyWire, McClatchy Natural Gas Daily, Washington Post, WCPN-Cleveland Public Radio*

Shale Gas Development Impacts on Surface Water Quality in Pennsylvania: *Circle of Blue, Huffington Post, NGT News, IHS The Energy Daily, Wall Street Journal*

The Housing Market Impacts of Shale Gas Development: *Bloomberg, EnergyWire, Forbes, Reuters, SNL Financial, The Economist, BBC radio.*

Price Regulation and Environmental Externalities: Evidence from Methane Leaks: *the Conversation, E&E News, NBER digest, SNL News, Michigan Public Radio.*

80,000 Inactive Oil Wells: A Blessing or a Curse?: *CBC, CTV News, Calgary Herald, Daily Oil Bulletin, Globe and Mail, the Tyee, News Talk 770, 630 CHED.*

The Value of Electricity Reliability: Evidence from Battery Adoption: *Ergs and Equilibrium Podcast; Resources Radio Podcast*

HONORS AND AWARDS

Killam Emerging Research Leader Award, 2019

Canadian Women Economists Committee, CWEC Young Researcher Award, 2019

GREAT Supervisor Award, University of Calgary, 2018

New Scholar Research Award, Faculty of Arts, University of Calgary, 2018

Outstanding Reviewer, *Journal of Environmental Economics and Management*, 2015

Outstanding Reviewer, *Energy Policy*, 2015

Dr. and Mrs. Bill V. Lessley Dissertation Excellence Award, University of Maryland, 2010

Student Travel Award, European Economics Association Congress, Barcelona, 2009

Dennis J. O'Brien Best Student Paper Award, 32nd International Association for Energy Economics International Conference, 2009

National Capital Area Chapter, U.S. Association for Energy Economics Student Scholarship for the IAEE International Conference, 2009

Institute on Computational Economics Fellow, University of Chicago and Argonne National Laboratory, 2008

Distinguished Teaching Assistant Award, University of Maryland, 2007-2008

Canadian Economics Association Travel Grant, Vancouver, 2008

Jacob K. Goldhaber Travel Award, University of Maryland, 2007

SERVICE

Committee Member, CWEC Early Career Research Award, 2023
Committee Member, Wallace E. Oates Outstanding Doctoral Dissertation Award, 2020-2022
Equity and Diversity Committee, Faculty of Arts, 2019-2020
Vice President, Canadian Association of Energy Economics 2015-2019
Scholarship Committee, Faculty of Graduate Studies, University of Calgary, 2016
Board Member, Van Horne Institute, 2016-2018
Hiring Committee, Haskayne School of Business, 2018; Economics Department, 2014, 2015
Co-organizer of University of Calgary's Empirical Microeconomics Workshop [2014](#), [2015](#), [2016](#)

REVIEWING

Editorial boards: *Canadian Journal of Economics*; *Journal of Environmental Economics and Management*; *Land Economics*; *Resource and Energy Economics*; *Review of Environmental Economics and Policy*.

Refereeing: *Agricultural and Resource Economics Review*; *American Economic Journal: Economic Policy*; *American Economic Review*; *American Journal of Agricultural Economics*; *American Journal of Health Economics*; *Applied Economics Teaching Resources*; *Bulletin of Economic Research*; *Canadian Journal of Economics*; *C.D. Howe Institute Commentary*; *Conservation Letters*; *Economic Inquiry*; *Economic Journal*; *Economics of Energy & Environmental Policy*; *Energy Economics*; *Energy Journal*; *Energy Policy*; *Environmental Management*; *Environmental Monitoring and Assessment*; *Environmental and Resource Economics*; *Environmental Politics*; *Environmental Science & Technology*; *Health Economics*; *International Economic Review*; *Journal of Applied Econometrics*; *Journal of the Association of Environmental and Resource Economists*; *Journal of Economic Dynamics and Control*; *Journal of Environmental Economics and Management*; *Journal of Housing Economics*; *Journal of Policy Analysis and Management*; *Journal of Political Economy*; *Journal of Political Economy: Microeconomics*; *Journal of Public Economics*; *Journal of Regulatory Economics*; *Journal of Rural and Community Development*; *Land Economics*; *Nature Energy*; *Nature Sustainability*; *Oxford Encyclopedia of Environmental Economics*; *Regional Science and Urban Economics*; *Resource and Energy Economics*; *Review of Economics and Statistics*; *Review of Industrial Organization*; *Science*; *Science of the Total Environment*.

Conference Selection Committees: NBER Distributional Consequences of New Energy Policies 2023; IIPF 2021; IAEE 2019; EMEE 2020, 2024; WCERE 2018; AERE 2016, 2017; CEA 2016; CREE 2016; Calgary's Empirical Microeconomics Workshop 2014, 2015, 2016; AAEA Annual Meeting 2014.

Granting Agencies: Alfred P. Sloan Foundation Proposal; Czech Science Foundation; Michigan Sea Grant Proposal; Mitacs; Swiss National Science Foundation, US National Science Foundation.

Peer Reviewer: U.S. Environmental Protection Agency; California Council on Science and Technology.

PRESENTATIONS

- 2024 Western University (expected); Louisiana State University (expected); Mannheim Conference on Energy and the Environment (Keynote, expected); Columbia University-Center for Global Energy Policy
- 2023 University of Queensland; University of Sydney; University of British Columbia; University of Alaska Anchorage Workshop
- 2022 Thompson Rivers University Cluster Workshop (keynote), Occasional Workshop (discussant); HEC Montreal; University of Kentucky
- 2021 Appalachian State University, University of California San Diego, Florence School of Regulation (panel), CERE-Umeå, University of Basel.
- 2020 ASSA discussant, University of Alberta, University of Manchester
- 2019 Carleton University.
- 2018 University of Pennsylvania; Stockholm School of Economics in Riga; University of British Columbia; WCERE; University of Waterloo's Current Challenges in Environmental and Resource Economics Workshop; University of Alberta's Conference on Renewable Energy and Electricity Markets (discussant); ASSAs (discussant).
- 2017 PERC Energy Workshop (discussant); University of Verona; London School of Economics-Grantham Institute; University of Tennessee; POWER Conference; University of Melbourne; ASSAs (discussant).
- 2016 HEC Montreal; Environmental Defense Fund; Carnegie Mellon University; Cornell University; ASSAs (discussant).
- 2015 Arizona State University; University of Alberta; University of Michigan; Colorado School of Mines; University of British Columbia; ASSAs (discussant); University of Oklahoma's Energy Finance Research Conference (discussant).
- 2014 Duke University (Arctic Drilling Workshop); UC Berkeley (Guest Lecture); Georgia Institute of Technology; Environmental Protection Agency (National Center for Environmental Economics); International Industrial Organization Conference; World Congress of Environmental and Resource Economists; American Society of Civil Engineers Shale Conference (panelist).
- 2013 AERE Conference Sponsored Session; ETH Zurich; Triangle Resource and Environmental Economics Seminar (Duke University, North Carolina State University, and RTI); University of Calgary.
- 2012 MIT CEEPR workshop; APPAM Conference; CREE Study Group; Pembina Shale Gas Thought Leaders Forum; World Bank Sustainable Development Forum; 1st NE workshop on Energy Policy and Environmental Economics; Empirical Methods in Energy Economics.
- 2011 2nd Annual Energy Policy Symposium, Washington DC; University of Basel, Department of Economics; Resources for the Future.
- 2010 University of Aberdeen; Resources for the Future; University of Alaska-Anchorage; University of Alberta; University of Calgary; Bank of Canada; Congressional Budget Office; Stockholm Institute of Transition Economics, Stockholm School of Economics; International Association for Energy Economics Conference.

2009 European Economics Association Congress; Department of Civil and Environmental Engineering, University of Alberta; International Association for Energy Economics Conference; ETH Zurich.

TEACHING

World Oil Markets ECON527; Natural Gas Markets ECON323; Natural Resource Economics ECON475 Energy Economics ECON627; Environmental Economics ECON377; PhD Research Workshop II, ECON 793; Research Methods I, ECON 693.

SUPERVISORY COMMITTEE MEMBER

Wojciech Fulmyk* (PhD, ongoing); Sagbo Anicet Hounton* (PhD, ongoing); Abena Darkwah* (PhD, ongoing); Arthur Novaes de Amorim (PhD, 2023), Daniel Ma (PhD, 2021); Sakib Rahman (PhD, 2023); Longzhou Wang (PhD, 2022); Mokhtar Tabari (PhD, 2020); Elham Adibnia (PhD, 2021); Chi Man Yip (PhD, 2020); Alaz Munzur (PhD, 2019); Jingchi Yan* (MA, 2020); Reinaldo Viccini* (MA, 2019); Hossein Hosseini (PhD, 2018); Blake Shaffer (PhD, 2018); Xiaoli Zheng (PhD, 2018); Naima Farah (PhD, 2017); Yuan Wen (PhD, 2015); Grant Freudenthaler (MA, 2016); Younes Ahmadi (PhD Candidacy Committee, 2014).

*Supervisor

External examiner: Eric Adebayo (SFU PhD, 2020)

PERSONAL INFORMATION

Citizenships: Canada, Latvia, United States

Languages: English (Native); Spanish (Proficient); Japanese (Proficient); French (Proficient); Latvian (Proficient); Swiss German (Rudimentary)

Married to economist [Stefan Staubli](#)