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Appointments

- August 2021 - Present: Lester and Judith Lave Professor of Economics, Engineering, and Public Policy. Department of Engineering and Public Policy, Tepper School of Business, Carnegie Mellon University.
- July 2017 - July 2021: Lester and Judith Lave Associate Professor of Economics, Engineering, and Public Policy. Department of Engineering and Public Policy, Tepper School of Business, Carnegie Mellon University.
- July 2019 - July 2024: Associate Department Head for Graduate Affairs, Department of Engineering and Public Policy, Carnegie Mellon University.
- September 2014 - Present: National Bureau of Economic Research, Environment and Energy Working Group, Research Associate.
- January 2022 - Present: National Bureau of Economic Research, Conference on Research in Income and Wealth, Member.
- January 2020 - December 2023: Co-Editor Journal of the Association of Environmental and Resource Economists.
- April 2018 - Present: Fellow, Wilton E. Scott Institute for Energy Innovation, Carnegie Mellon University, Pittsburgh, PA.
- January 2015 - August 2017: United States Environmental Protection Agency, Science Advisory Board, Panel on the Economy-Wide Modeling of the Benefits and Costs of Environmental Regulation.
- July 2014 - June 2017: Middlebury College: Associate Professor (with tenure) in the Department of Economics.

- July 2015 - January 2016: Carnegie Mellon University: Visiting Associate Professor of Economics, Scott Institute, Heinz School of Public Policy, Tepper School of Business, Department of Engineering and Public Policy.
- April 2012 - September 2014: National Bureau of Economic Research, Environment and Energy Working Group, Faculty Research Fellow.
- July 2007 - July 2014: Middlebury College: Assistant Professor in the Department of Economics and the Environmental Studies Program.

Education

- 2007 Doctor of Philosophy, Environmental and Natural Resource Economics, School of Forestry and Environmental Studies, Yale University, New Haven, CT 06511.
- 2002 Master of Public Affairs, Environmental Policy & Public Financial Administration, School of Public and Environmental Affairs, Indiana University, Bloomington, IN 47401.
- 1996 Bachelor of Science (Honors), Public Policy, Planning, and Management, School of Architecture and Allied Arts, University of Oregon, Eugene, OR, 97403.

Research

Books

- 2024 N.Z. Muller, E. Fenichel, M. Bohman, editors. *Measuring and Accounting for Environmental Public Goods: A National Accounts Perspective.* National Bureau of Economic Research. University of Chicago Press.
- 2012 N.Z. Muller and R. Mendelsohn. *Using Marginal Damages in Environmental policy: A Study of Air Pollution in the United States.* The American Enterprise Institute Press. Washington, D.C., USA.

Publications

1. 2026 "Climate Policy, Air Pollution Impacts, and the Distribution of Income." N.Z. Muller, P. Adams, L.R. Dennin, P. Jaramillo, K. Jordan. *Climate Change Economics.* Vol. 17, No. 03, Article No. 2640006. https://doi.org/10.1142/S2010007826400063.

2. 2025 "The Real Effects of Mandatory CSR Disclosure on Emissions: Evidence from the Greenhouse Gas Reporting Program." Lavender Yang, N.Z. Muller, Pierre Liang. *Journal of Accounting, Auditing, and Finance.* DOI: 10.1177/0148558X251413807

3. 2025 "Polluting Public Funds: The Effect of Environmental Regulations on Municipal Bonds." Akshaya Jha, Steven Karolyi, N.Z. Muller. *Management Science: https://doi.org/10.1287/mnsc.2023.02340.*

4. 2025 "Modeling wildland fire smoke damages in the U.S. and unpacking impact disparities by social vulnerability." Luke Dennin, Destenie Nock, N.Z. Muller, Medinat Akindele, Peter Adams. *Nature Communications: Earth and Environment.* 6(190): 1 - 19.

5. 2025 "The Role of Hydrogen in Decarbonizing US Iron and Steel Production" Jordan, Katherine; Jaramillo, Paulina; Karplus, Valerie J.; Adams, Peter; N.Z. Muller. *Environmental Science & Technology. 59: 4915 - 4925*

6. 2025 "Marginal abatement cost for greenhouse gas emissions in the United States using an energy systems approach." Michael Blackhurst, Aranya Venkatesh, Katherine Jordan, N.Z. Muller, Cameron Wade, Jeremiah X. Johnson, Paulina Jaramillo. *Environmental Research: Energy.* https://iopscience.iop.org/article/10.1088/2753-3751/adb588/pdf

7. 2024 "Productivity and the Environmental Accounts." N.Z. Muller. In *The Measure of Economies.* M.B. Reinsdorf and L. Sheiner, eds. University of Chicago Press, Chicago, IL, USA.

8. 2024 "Climate Policy Reduces Racial Disparities in Air Pollution from Transportation and Power Generation." Jordan, Katherine; Dennin, Luke; Adams, Peter; Jaramillo, Paulina; N.Z. Muller. *Environmental Science & Technology. 58(49) 21510 - 21522*

9. 2024 "Funding a just transition away from coal in the U.S." Luke R. Dennin, N.Z. Muller. *Journal of Benefit-Cost Analysis. https://doi.org/10.1017/bca.2024.20.*

10. 2024 "Measuring global monetary damages from particulate matter and carbon dioxide emissions to tracking sustainable growth." Aniruddh Mohan, N.Z. Muller, Akshay Thyagarajan, Randall V. Martin, Melanie S. Hammer, Aaron van Donkelaar. *Nature Communications: Earth and Environment. 5, 264.* https://doi.org/10.1038/s43247-024-01426-3

11. 2023 "Closing the Gap: Achieving U.S. Climate Goals Beyond the Inflation Reduction Act." K. Jordan, P. Adams, P. Jaramillo, N.Z. Muller. *Renewable and Sustainable Energy Transition: https://doi.org/10.1016/j.rset.2023.100065.*

12. 2023 "The Impact of the Clean Air Act on Particulate Matter in the 1970s." Maureen Cropper, N.Z. Muller, Yongjoon Park, Victoria Perez-Zetune. *The Journal of Environmental Economics and Management.* 121: 102867

13. 2022 "The hidden value of trees: Quantifying the ecosystem services of tree lineages and their major threats across the contiguous US." Cavender-Bares, Jeannine; Nelson, Erik; Meireles, Jose Eduardo; Lasky, Jesse R; Miteva, Daniela A; Nowak, David; Pearse, William D; Helmus, Matthew; Zanne, Amy E; Fagan, William; Mihiar, Christopher; Muller, Nicholas Z; Kraft, Nathan; Polasky, Stephen. *PLOS Sustainability and Transformations.* 1(4): e0000010.

14. 2021. "Greenhouse Gas Estimates of LNG Exports Must Include Global Market Effects." S. Smillie, N.Z. Muller, W.M. Griffin, J. Apt. *Environmental Science and Technology.* https://pubs.acs.org/doi/10.1021/acs.est.1c04753

15. 2021 "Heterogeneous Solar Capacity Benefits, Appropriability, and the Costs of Suboptimal Siting." Steven E. Sexton, A. Justin Kirkpatrick, Robert Harris, Nicholas Z. Muller. *The Journal of the Association of Environmental and Resource Economists.* 8(6): 1209-1244.

16. 2021 "Expected Health Effects of Reduced Air Pollution from COVID-19 Social Distancing" S. Cicala, S. Holland, E. Mansur, N.Z. Muller, A. Yates. *Atmosphere.* 12(8) 951. https://doi.org/10.3390/atmos12080951

17. 2021 "Mortality Risk from $PM_{2.5}$: A Comparison of Modeling Approaches to Identify Disparities Across Ethnic Groups in Policy Outcomes." E. Spiller, J. Proville, A. Roy, N.Z. Muller. *Environmental Health Perspectives.* 129(12): 127004-1 - 127004-12.

18. 2021 "Air quality–related health damages of food." N. Domingo, S. Balasubramanian, S. Thrakar, M. Clark, P. Adams, J. Marshall, N.Z. Muller, S. Pandis, S. Polasky, A.L. Robinson, C. Tessum, D. Tilman, P. Tschofen, J. Hill. *Proceedings of the National Academy of Science. 10.1073/pnas.2013637118.*

19. 2021 "Recent Increases in Air Pollution: Evidence and Implications for Mortality." Karen Clay, N.Z. Muller. *The Review of Environmental Economics and Policy. 15(1): 154 - 162*

20. 2021 "The Environmental Benefits of Transportation Electrification: Urban Buses." Stephen P Holland; Erin T Mansur; Nicholas Z Muller; Andrew J. Yates. *Energy Policy. Volume 148, Part A, 111921.* https://doi.org/10.1016/j.enpol.2020.111921.

21. 2020 "The McKeesport Natural Gas Boom, 1919-1921." N.Z. Muller, J.A. Tarr. *The Journal of Energy History.* energyhistory.eu/en/node/225.

22. 2020 "Transboundary health damages of air pollution in the U.S." Brian Sergi, Nicholas Z. Muller, Ines Azevedo, Stephen Davis. *Environmental Research Letters. 15 (2020) 104073.* https://doi.org/10.1088/1748-9326/abb429.

23. 2020 "Optimizing emissions reductions from the U.S. power sector for climate and health benefits." Brian Sergi, Peter Adams, N.Z. Muller, Allen L. Robinson, Steven J. Davis, Julian Marshall, Inês Azevedo. *Environmental Science and Technology.* 54(12): 7513 - 7523.

24. 2020 "Decompositions and Policy Consequences of an Extraordinary Decline in Air Pollution from Electricity Generation." S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates. *American Economic Journal: Economic Policy. 12 (4), 244-74.*

25. 2020 "Reducing mortality from air pollution in the United States" Thakrar, Sumil; Balasubramanian, Srinidhi; Adams, Peter; Azevedo, Ines; Muller, Nicholas; Pandis, Spyros; Polasky, Stephen; Pope, Clive; Robinson, Allen; Apte, Josh; Tessum, Chris; Marshall, Julian; Hill, Jason. *Environmental Science and Technology: Letters.* https://pubs.acs.org/doi/10.1021/acs.estlett.0c00424.

26. 2020 "Near Term Carbon Tax Policy in the U.S. Economy: Limits to Deep Decarbonization." Roth, Michael; Adams, Peter; Jaramillo, Paulina; Muller, N.Z. *Environmental Research Communications.* 2(5), 051004.

27. 2020 "Long-Run Environmental Accounting in the United States Economy." N.Z. Muller. *Environmental and Energy Policy in the Economy, Vol. 1: 158 - 191. National Bureau of Economic Research, Cambridge, MA, USA.*

28. 2019 "Quantifying the social equity state of an energy system: Environmental and labor market equity of the shale gas boom in Appalachia" Mayfield, E., Cohon, J., Muller, N.Z., Azevedo, I., Robinson, A. L. *Environmental Research Letters.* 14(12): 124072.

29. 2019 "Cumulative air, climate, and employment impacts of natural gas systems" Erin L. Mayfield, Jared Cohon, Allen L. Robinson, Inês Azevedo, N.Z. Muller. *Nature Sustainability. DOI: 10.1038/s41893-019-0420-1.*

30. 2019 "Fine Particulate Matter Damages and Value Added in the United States Economy," P. Tschofen, I. Azevedo. N.Z. Muller. *Proceedings of the National Academy of Science. https://doi.org/10.1073/pnas.1905030116.*

31. 2019 "Does Environmental Policy Affect Income Inequality? Evidence from The Clean Air Act." Akshaya Jha, Peter H. Matthews, Nicholas Z. Muller. *American Economic Review Papers and Proceedings.* 109: 271–276

32. 2019 "An Inter-Comparison of Air Quality Social Cost Estimates from Reduced-Complexity Models" by Gilmore, Elisabeth; Heo, Jinhyok; Muller, Nicholas ; Tessum, Chris; Hill, Jason; Marshall, Julian; Adams, Peter. *Environmental Research Letters: 14(2019) 074016 https://doi.org/10.1088/1748-9326/ab1ab5.*

33. 2019 "Inequity in consumption of goods and services adds to racial-ethnic disparities in air pollution exposure" Tessum, C., Apte, J.S., Goodkind, A.L., Muller, N.Z., Mullins, K.A., Paollela, D.A., Polasky, S., Springer, N.P., Thakrar,S.K., Marshall, J.D., Hill, J.D. *Proceedings of the National Academy of Science.* 116 (13) 6001-6006.

34. 2019 "Market-based Emissions Regulation When Damages Vary Across Sources: What Are the Gains from Differentiation?" M.Fowlie. N.Z. Muller. *Journal of the Association of Environmental and Resource Economists.* 5(1): 593-632.

35. 2019 "Distributional Effects of Air Pollution from Electric Vehicle Adoption" S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates. *Journal of the Association of Environmental and Resource Economists. Vol 6, S1: 65 - 94.*

36. 2019 "The Derivation of Discount Rates with an Augmented Measure of Income." N.Z. Muller. *Journal of Environmental Economics and Management:*

    https://doi.org/10.1016/j.jeem.2019.02.007

37. 2019 "The External Costs of Shipping Petroleum Products by Pipeline and Rail: Evidence of Shipments of Crude Oil from North Dakota " Karen Clay, Akshaya Jha, N.Z. Muller, Randy Walsh. *The Energy Journal.* 40(1). 10.5547/01956574.40.1.kcla

38. 2018 "Effect of Model Spatial Resolution on Estimates of Fine Particulate Matter Exposure and Exposure Disparities in the United States" Paolella, David; Tessum, Christopher; Adams, Peter ; Apte, Joshua; Chambliss, Sarah; Hill, Jason; Muller, Nicholas; Marshall, Julian. *Environmental Science & Technology Letters.* 5 (7): 436–441. https://pubs.acs.org/articlesonrequest/AOR-xVZJ3tiESm6yuNsqbuuz

39. 2018 "The Local Air Pollution Costs of Coal Storage and Handling: Evidence from U.S. Power Plants." Akshaya Jha, N.Z. Muller. *Journal of Environmental Economics and Management.* 92: 360 - 396.

40. 2018 "The Distribution of Income is Worse Than You Think." N.Z. Muller, P.H. Matthews, V. Wiltshire-Gordon. PLoS ONE 13(3): e0192461.

41. 2018 "The Impact of Trading on the Costs and Benefits of the Acid Rain Program." H.R. Chan, B.A. Chupp, M.L. Cropper, N.Z. Muller. *Journal of Environmental Economics and Management:* 88, 180-209.

42. 2017 "Does Environmental Policy Affect Scaling Laws Between Population and Pollution? Evidence from American Metropolitan Areas." N.Z. Muller, Akshaya Jha. 09 Aug 2017 *PLOS ONE* https://doi.org/10.1371/journal.pone.0181407.

43. 2017 "Environmental Benefit-Cost Analysis and the National Accounts." N.Z. Muller. *Journal of Benefit-Cost Analysis* http://dx.doi.org/10.1017/bca.2017.15.

44. 2017 "Air and Water: Integrated Assessment Models for Multiple Media." D.A. Keiser, N.Z. Muller. *Annual Review of Resource Economics* 9: 165–184.

45. 2017 "What Forces Dictate the Design of Pollution Monitoring Networks?" N.Z. Muller, Paul Ruud. *Environmental Modeling and Assessment 23(1), 1-14. DOI: 10.1007/s10666-017-9553-7.*

46. 2016 "Are There Environmental Benefits from Driving Electric Vehicles? The Importance of Local Factors." S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates. *American Economic Review* 106(12): 3700 - 3729.

47. 2016 "Reply to Comment on "Damages and Expected Deaths Due to Excess NO_x Emissions from 2009-2015 Volkswagen Diesel Vehicles." S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates. *Environmental Science and Technology.* 50(7): 4137-4138. *DOI:* 10.1021/acs.est.6b01157

48. 2016 "On the divergence between fuel and service prices: The importance of technological change and diffusion in an American frontier economy." N.Z. Muller. *Explorations in Economic History.* 60: 93 - 111.

49. 2016 "Air pollution emissions and damages from energy production in the U.S.: 2002–2011." P. Jaramillo and N.Z. Muller. *Energy Policy* 90: 202 - 211.

50. 2016 "Damages and Expected Deaths Due to Excess NO_x Emissions from 2009-2015 Volkswagen Diesel Vehicles." S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates. *Environmental Science and Technology.* 50(3): 1111-1117. DOI 10.1021/acs.est.5b05190

51. 2016 "A Comment On: Diminishing Returns or Compounding Benefits of Air Pollution Control? The Case of NOx and Ozone." R. Mendelsohn, N.Z. Muller. *Environmental Science and Technology.* 50(1): 500-501 DOI 10.1021/acs.est.5b05324

52. 2016 "Power Laws and Air Pollution." N.Z. Muller. *Environmental Modeling and Assessment:* 21(1): 31 - 52.

53. 2014 "Boosting GDP growth by accounting for the environment: Including air pollution and greenhouse gas damages increases estimated U.S. growth." N.Z. Muller. *Science.* August 22^{nd}, 2014, Vol. 345 no. 6199 pp. 873-874: DOI:10.1126/science.1253506.

54. 2014 "The Air Pollution Damages from Offshore Energy Production." N.Z. Muller. *The Energy Journal* 35(4): 39 - 60.

55. 2014 "Towards the Measurement of Net Economic Welfare: Air Pollution Damage in the United States National Accounts - 2002, 2005, 2008." N.Z. Muller. In: Measuring Economic Sustainability and Progress. Eds. Jorgensen, D.W., J.S. Landefeld, P. Schreyer. NBER Book Series in Income and Wealth Vol. 72.

56. 2013 "Using Index Numbers for Deflation in Environmental Accounting." N.Z. Muller. *Environment and Development Economics.* doi:10.1017/S1355770X1300048X.

57. 2012 "$PM_{2.5}$ Co-benefits of Climate Change Legislation Part 1: California's AB 32." C. Zapata, M. Kleeman, N.Z. Muller, *Climatic Change.* 10.1007/s10584-012-0545-y.

58. 2012 "The Design of Optimal Climate Policy with Air Pollution Co-Benefits." N.Z. Muller, *Resource and Energy Economics.* http://dx.doi.org/10.1016/j.reseneeco.2012.07.002

59. 2012 "Global air quality and health co-benefits of mitigating near-term climate change through methane and black carbon emission controls ." Susan C. Anenberg, Joel Schwartz, Drew Shindell, Markus Amann, Greg Faluvegi, Zbigniew Klimont, Greet Janssens-Maenhout, Luca Pozzoli, Rita Van Dingenen, Elisabetta Vignati, Lisa Emberson, Nicholas Z. Muller, J. Jason West, Martin Williams, Volodymyr Demkine, W. Kevin Hicks, Johan Kuylenstierna, Frank Raes, Veerabhadran Ramanathan. *Environmental Health Perspectives.* 120(6): 831 - 839.

60. 2012 "Efficient Pollution Regulation: Getting the Prices Right: Comment: Reply." N.Z. Muller, R.O. Mendelsohn. *The American Economic Review.*102(1): 608-612.

61. 2012 "Efficient Pollution Regulation: Getting the Prices Right: Mortality Rate Update (Corrigendum)." N.Z. Muller, R.O. Mendelsohn, *The American Economic Review.*102(1): 613-616.

62. 2012 "Simultaneously mitigating near-termclimate change and improving human health and food security." Drew Shindell, Johan C. I. Kuylenstierna, Elisabetta Vignati, Rita van Dingenen, Markus Amann, Zbigniew Klimont, Susan C. Anenberg, Nicholas Muller, Greet Janssens-Maenhout, Frank Raes, Joel Schwartz, Greg Faluvegi, Luca Pozzoli, Kaarle Kupiainen, Lena Höglund-Isaksson, Lisa Emberson, V. Ramanathan, Kevin Hicks, Kim Oanh N. T., George Milly, Volodymyr Demkine, Martin Williams, David Streets, David Fowler. *Science* 335, 183 - 189.

63. 2011 "Environmental Accounting: Methods with an Application to the U.S. Economy." N.Z. Muller, W.D. Nordhaus, R.O. Mendelsohn. *The American Economic Review.* 101(5): 1649-1675

64. 2011 "Linking Policy to Statistical Uncertainty in Air Pollution Damages." N.Z. Muller. *The B.E. Press Journal of Economic Analysis & Policy.* Vol. 11 : Iss. 1 (Contributions), Article 32.

65. 2011 "The Ancillary Benefits of Climate Change Policy in the United States." B. Groosman, N.Z. Muller, E. O'Neill. *Environmental and Resource Economics,* 2011, 10.1007/s10640-011-9483-9.

66. 2011 "The Social Cost of Trading? Measuring the Increased Damages from Sulfur Dioxide Trading in the United States." D.Henry, N.Z. Muller, R. Mendelsohn. *Journal of Policy Analysis and Management* 30(3):598 - 612.

67. 2011 "Climate, health, agricultural and economic impacts of adopting tighter emissions standards for on-road motor vehicles." Drew Shindell, Greg Faluvegi, Michael Walsh, Susan Anenberg, Rita Van Dingenen, Nicholas Z. Muller, Jeff Austin, Dorothy Koch, George Milly. *Nature Climate Change.* Vol 1. 59-66.

68. 2009 "Efficient Pollution Regulation: Getting the Prices Right." N.Z. Muller, R.O. Mendelsohn, *The American Economic Review.* 99(5): 1714 - 1739.

69. 2009 "Using air quality modeling to study source-receptor relationships between nitrogen oxides emissions and ozone exposures over the United States." D.Q. Tong, N.Z. Muller, H. Kan, R.O. Mendelsohn. *Environment International.* 35(8): 1109-17.

70. 2009 "Regulating NO_x and SO_2 in Atlanta." N.Z. Muller, D.Q. Tong, R.O. Mendelsohn, *The B.E. Journal of Economic Analysis & Policy: Vol. 9 : Iss. 2 (Contributions), Article 3.*

71. 2009 "Using Hedonic Property Models to Value Public Water Bodies: An Analysis of Specification Issues." N.Z. Muller. *Water Resources Research,* 45, W01401, doi:10.1029/2008WR007281.

72. 2008 "Sinusoidal Modeling Applied to Spatially Variant Tropospheric Ozone Air Pollution." N.Z. Muller, P.C.B. Phillips. *Environmetrics*; 19(6): 567 - 581.

73. 2007 "Measuring the Damages Due to Air Pollution in the United States." N.Z. Muller, R.O. Mendelsohn. *Journal of Environmental Economics and Management*; 54: 1-14.

74. 2006 "An Integrated Assessment of the Spatial Variability of Ozone Impacts from Emissions of Nitrogen Oxides" Tong, D.Q., N.Z. Muller, D.L. Mauzerall, R.O. Mendelsohn. *Environmental Science and Technology*; 40(5): 1395-1400.

Papers in Peer Review

- 2026 "Estimating the Marginal Cost of Carbon Capture, Transport, and Storage for the U.S. Power Generation Fleet" Connor, Patrick; Harker Steele, Amanda; N.Z. Muller, Nichols, Christopher

- 2026 "Costs, CO2 Emissions, and Air Quality Impacts of CO2 Capture and Sequestration for Integrated Steel Mills in the United States." Wei Xiao, Valerie Karplus, N.Z. Muller, P.C. Pistorius. *Submitted.*

- 2026 "An Evaluation of Reduced-Complexity Models of Air Quality Over Historical, Policy-Relevant PM2.5 Concentration Changes" Johnson, K.; Hill, J.; Marshall, J.; Muller, N.Z.; Tessum, C.; Hernandez, C.; Dinkelacker, B.; Adams, P. *Submitted.*

Working Papers

- 2026 "Measuring the Impact of Data Centers in the United States Economy: Monetary Damage from Air Pollution and Greenhouse Gas Emissions." N.Z. Muller. NBER WP #35100.

- 2025 "Firewood in the American Economy: 1700 to 2010." N.Z. Muller. NBER WP #33974.

- 2025 "Geographic Resolution in Environmental Policy: EPA's Shift from Regions to Counties Under the Clean Air Act." Maureen Cropper, Mengjia Hu, Yongjoon Park, N.Z. Muller. NBER WP #33412.
- 2023 "Distributional Weights in Economic Analysis." Robert W. Hahn, N.Z. Muller. NBER WP #31475.
- 2022 "War, Influenza, and U.S. Carbon Intensity." N.Z. Muller. WP #30522.
- 2022 "The Impact of the Clean Air Act on Particulate Matter in the 1970s." Maureen Cropper, N.Z. Muller, Yongjoon Park, Victoria Perez-Zetune. NBER WP #30312.
- 2021 "Measuring Firm Environmental Performance to Inform Asset Management and Standardized Disclosure." N.Z. Muller NBER WP #29454.
- 2021 "The Real Effects of Mandatory CSR Disclosure on Emissions: Evidence from the Greenhouse Gas Reporting Program." Lavender Yang, N.Z. Muller, Pierre Liang. NBER WP #28984.
- 2021 "On the Green Interest Rate." Nicholas Z. Muller. NBER WP #28891.
- 2020 "Polluting Public Funds: The Effect of Environmental Regulations on Municipal Bonds." Akshaya Jha, Steven Karolyi, Nicholas Z. Muller. NBER WP #28210.
- 2020 "The Growth of Nations Revisited: Global Environmental Accounting from 1998 to 2018." Aniruddh Mohan, Nicholas Z. Muller, Akshay Thyagarajan, Randall V. Martin, Melanie S. Hammer, Aaron van Donkelaar. NBER WP #27398.
- 2020 "The Environmental Benefits of Transportation Electrification: Urban Buses." Stephen P Holland; Erin T Mansur; Nicholas Z Muller; Andrew J. Yates. NBER WP# 27285.
- 2020 "Expected Health Effects of Reduced Air Pollution from COVID-19 Social Distancing" S. Cicala, S. Holland, E. Mansur, N.Z. Muller, A. Yates. NBER WP# 27135.
- 2019 "Recent Increases in Air Pollution: Evidence and Implications for Mortality." Karen Clay, N.Z. Muller. NBER WP#26381.
- 2019 "The McKeesport Gas Boom: 1919 - 1921." N.Z. Muller, J.A. Tarr.
- 2019 "Time Preference and the Great Depression: Evidence from Firewood Prices in Portland, Oregon." N.Z. Muller. NBER WP #25997.
- 2019 "Hurricane Katrina Floods New Jersey: The Role of Information in the Market Response to Flood Risk." Caroline A. Hopkins and N.Z. Muller. NBER WP #25984.
- 2019 "Long-Run Environmental Accounting in the United States Economy." N.Z. Muller. NBER WP #25910.

- 2018 "Decompositions and Policy Consequences of an Extraordinary Decline in Air Pollution from Electricity Generation." S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates. NBER WP #25339.

- 2018 "Heterogeneous Environmental and Grid Benefits from Rooftop Solar and the Costs of Inefficient Siting Decisions." Steven E. Sexton, A. Justin Kirkpatrick, Robert Harris, Nicholas Z. Muller NBER WP #25241

- 2018 "Livestreaming Pollution: A New form of disclosure and a catalyst for citizen engagement?" Emiliano Huet-Vaughn, N.Z. Muller, Yen-Chia Hsu. NBER WP #24664.

- 2017 "The External Costs of Shipping Petroleum Products by Pipeline and Rail: Evidence of Shipments of Crude Oil from North Dakota " Karen Clay, Akshaya Jha, N.Z. Muller, Randy Walsh. NBER WP #23852.

- 2016 "Distributional Effects of Air Pollution from Electric Vehicle Adoption" S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates. NBER WP #22862.

- 2016 "Handle with Care: The Local Air Pollution Costs of Coal Storage" Akshaya Jha, N.Z. Muller. NBER WP #23417

- 2016 "The Derivation of Discount Rates Using an Augmented Measure of Income." N.Z. Muller. NBER WP #22579

- 2016 "An Input-Output Model of the U.S. Economy with Pollution Externality." N.Z. Muller. NBER WP #22092.

- 2016 "On cost savings from innovation with market-based pollution control." N.Z. Muller.

- 2016 "What Forces Dictate the Design of Pollution Monitoring Networks?" N.Z. Muller, Paul Ruud. NBER WP #21966.

- 2016 "What Forces Dictate the Design of Pollution Monitoring Networks?" N.Z. Muller, Paul Ruud. *CESifo Working Paper No. 5739.*

- 2015 "The Market for Sulfur Dioxide Allowances: What Can We Learn from the Grand Policy Experiment?" H.R. Chan, B.A. Chupp, M.L. Cropper, N.Z. Muller. NBER WP #21383.

- 2015 "The Net Benefits of the Acid Rain Program: What Can We Learn from the Grand Policy Experiment?" H.R. Chan, B.A. Chupp, M.L. Cropper, N.Z. Muller. Resources for the Future Discussion Paper-15-25.

- 2015 "Environmental Benefits from Driving Electric Vehicles?" S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates. NBER WP #21291.

- 2013 "Market-based Emissions Regulation When Damages Vary Across Sources: What Are the Gains from Differentiation?" M.Fowlie. N.Z. Muller. NBER WP #18801.

- 2014 "Form Versus Function: What are the Policy Implications of the Form of the PM2.5-Mortality Relationship?" N.Z. Muller

Writing Not Subject to Peer Review.

- 2024 "Introduction to 'Measuring and Accounting for Environmental Public Goods: A National Accounts Perspective." N.Z. Muller, E. Fenichel, M.Bohman, in N.Z. Muller, E. Fenichel, M. Bohman, editors. *Measuring and Accounting for Environmental Public Goods: A National Accounts Perspective.* National Bureau of Economic Research. University of Chicago Press.

- 2024 "Comment on 'Measuring for the Future Not the Past" N.Z. Muller, in N.Z. Muller, E. Fenichel, M. Bohman, editors. *Measuring and Accounting for Environmental Public Goods: A National Accounts Perspective.* National Bureau of Economic Research. University of Chicago Press.

- 2021 "Closing Cheswick Generating Station Will Produce Benefits." N.Z. Muller, L.R. Dennin. Pittsburgh Post-Gazette. https://www.post-gazette.com/opinion/Op-Ed/2021/06/27/Other-Voices-Closing-Cheswick-Generating-Station-will-produce-benefits-Nicholas-Z-Muller-and-Luke-R-Dennin/stories/202106270021

- 2020 "Monetary Damages - A Better Measure of Sustainability than Emissions?" A. Mohan, N.Z. Muller. United Nations Principles for Responsible Investment Blog https://www.unpri.org/pri-blogs/monetary-damages-a-better-measure-of-sustainability-than-emissions/6633.article

- 2020 "Growth, Sustainability, and the Measurement of Global Gross Product." A. Thyagarajan, A. Mohan, N.Z. Muller. VOXEu.

  https://voxeu.org/article/growth-sustainability-and-measurement-global-gross-product?qt-quicktabs_cepr_policy_research=0

- 2019 "Carnegie Mellon Did Not Say No or Yes to Shale Gas." J. Cohon, I. Azevedo, E. Mayfield, N.Z. Muller, A. Robinson.

  https://www.post-gazette.com/opinion/letters/2019/12/22/

  Carnegie-Mellon-did-not-say-no-or-yes-to-shale-gas/stories/201912220073

- 2019 "Why a GDP Adjustment for Damage to Our Air Makes Good Sense." N.Z. Muller, P. Tschofen, I. Azevedo. Pittsburgh Post-Gazette.

  https://www.post-gazette.com/opinion/Op-Ed/2019/12/11/

  Research-study-recommends-GDP-adjustment-for-pollution-damage/stories/201912050128

- 2018 "Pittsburgh: Think twice about allowing more rail traffic to roll through the city." K. Clay, A. Jha, N.Z. Muller, R. Walsh. Pittsburgh Post Gazette.

  http://www.post-gazette.com/opinion/Op-Ed/2018/07/29/

  Pittsburgh-Think-twice-about-allowing-more

  -rail-traffic-to-roll-through-the-city/stories/201807290012

- 2018 "Livestreaming Polluters to Enforce Environmental Policy: Evidence from a Natural Experiment in Pittsburgh." Emiliano Huet-Vaughn, N.Z. Muller, Yen-Chia Hsu. Pro-Market: The Blog of the Stigler Center at the University of Chicago, Booth School of Business. https://promarket.org/

  livestreaming-polluters-enforce-environmental-policy-evidence-natural-experiment-pittsburgh/

- 2018 "'Rightly Valuing' Baseload Power Must Include Risks to Health" N.Z. Muller. Pittsburgh Post Gazette Letter to the Editor.

  http://www.post-gazette.com/opinion/letters/2018/07/12/

  Rightly-valuing-baseload-power-must-include-risks-to-health/stories/201807120031

- 2018 "Breathing Inequality: Air Pollution Widens the Gap Between the Two Pittsburghs" N.Z. Muller, P.H. Matthews.

  http://www.post-gazette.com/opinion/Op-Ed/2018/05/19/

  Breathing-inequality-Air-pollution-widens-gap-between-the-two-Pittsburghs/stories/201805170048

- 2017 "Why electric cars aren't always environmentally sound" S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates. LSE Business Review.

- 2017 "Environmental Accounting" N.Z. Muller. Emerging Trends in the Social and Behavioral Sciences: An Interdisciplinary, Searchable, and Linkable Resource. John Wiley & Sons, Inc.

- 2017 "The Deadly 90-Day Rule." N.Z. Muller, A. Jha, J. Apt. http://www.post-gazette.com/opinion/Op-Ed/2017/11/02/The-deadly-90-day-rule-will-help-coal-barons-not-coal-miners-And-kill-people/stories/201711020013

- 2017 "The Constant Risk from the Bruce Mansfield Plant." N.Z. Muller http://www.post-gazette.com/opinion/Op-Ed/2017/09/11/The-constant-risk-from-the-Bruce-Mansfield-plant/stories/201709110013

- 2016 "A Letter on Divestment of the Vermont State Pension Fund." N.Z. Muller. State of Vermont Public Investment Committee.

- 2015 "DTE makes poor arguments for continued pollution." N.Z. Muller. Pittsburgh Post-Gazette. Letter to the Editor. December 10, 2015.

- 2015 "Public Policy Evaluation in the Face of Strong Prior Beliefs: The Case of Electric Cars." S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates. CATO Institute. Research Briefs in Public Policy NO. 34

- 2015 "Analyzing environmental benefits from driving electric vehicles." S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates. Vox. August, 2015

  http://www.voxeu.org/article/measuring-environmental-benefits-electric-vehicles

- 2015. "Pittsburgh's Air Quality is Complicated." N.Z. Muller. Pittsburgh Post-Gazette. Letter to the Editor. August 2, 2015.

- 2011 "Damage Assessment." N.Z. Muller. *The Environmental Forum*, March-April.

- 2010 "Efficient Pollution Control: Weighing the Value of a Ton" N.Z. Muller, R.O. Mendelsohn. *Regulation* 33(2): 20-24.

- 2007 "What Do the Damages Caused by U.S. Air Pollution Cost?" R.O. Mendelsohn, N.Z. Muller, Resources for the Future, Policy Commentary, December 17th, 2007.

Grants

- 2024 The Heinz Endowments. "An Index for the Measurement of a Sustainable Economy." Grant #G1692. $93,000. PI

- 2023 U.S. Department of Energy, National Energy Technology Laboratory. "Modeling and Analysis of Carbon Capture and Storage in the U.S. Economy." Grant# 5000-016. $154,000. PI

- 2023 U.S. Department of Energy, National Energy Technology Laboratory. "Empirical Extension of AP4 Model to Include Industrial Sources." $67,000. PI

- 2022 U.S. Department of Energy, National Energy Technology Laboratory. "Modeling and Analysis of Carbon Capture and Storage in the U.S. Economy." Grant# 5000-016. $125,000. PI

- 2022 Toyota Research Institute. "Consumer Preferences, Policy Options, and Firm Strategy in the Context of Alternative Vehicle Choice and Transportation Mode Shift." $540,000. Co-PI with Baruch Fischhoff.

- 2022 Niskanen Center. "Analysis of Carbon Tax Policies in the United States." $55,735. PI.

- 2021 U.S. Department of Energy, National Energy Technology Laboratory. "Research on Modeling Daily Pollution Distributions." Total Award: $95,000. PI

- 2020 Carnegie Mellon University and Tepper School of Business Alumni. "Research on the Design and Implementation of an "E" Index for ESG Investing." Combined Award: $295,000. PI.

- 2020 The Heinz Endowments. "An Index for the Measurement of a Sustainable Economy." Grant #E7565. $200,000. PI
- 2020 U.S. Department of Energy, National Energy Technology Laboratory. "Reduced Form Air Quality Modeling Support and Maintenance." Grant#FP00004527. Total Award: $125,000. PI
- 2019 U.S. Department of Energy, National Energy Technology Laboratory. "Coal-Fired Power Plants – Modeling A Role For Clean and Reliable Electric Power Generation." Total Award: $125,000. PI
- 2019 The Heinz Endowments. "An Index for Economy and the Environment." Grant #E1268. Total Award: $42,000. PI
- 2018 The Heinz Endowments. "An Index for Economy and the Environment." Grant #E5548. Total Award: $40,000. PI
- 2018 Alfred P. Sloan Foundation, U.S. Department of Energy. "Effects of On-Demand Ridesourcing on U.S. Vehicle Ownership, Travel Patterns, and Energy Use Externalities." Total Award: $12,500. Co-I
- 2018 Alfred P. Sloan Foundation, U.S. Department of Energy. "Environmental Benefits from Transportation Electrification." Total Award: $12,500. Co-I
- 2014 United States Environmental Protection Agency: EPA-G2014-STAR-J1. Center for Air, Climate, and Energy Solutions (CACES). Total Award: $10,000,000. Co-I
- 2014 United States Environmental Protection Agency: EPA-G2014-STAR-G. Optimal Energy Portfolios to Sustain Economic Advantage, Achieve GHG Targets, and Minimize PM2.5. Total Award: $790,000. Co-I
- 2013 Resources for the Future, Retrospective Program Initiative. Joint with: Maureen Cropper, Andrew Chupp, Ron Chan. Total Award: $37,500. Co-I
- 2009 United States Environmental Protection Agency: EPA-OPEI-NCEE-08-02. Announcement: "Design of Policies for Pollution Control Using Market Mechanisms." 2009 - 2013. Total award: $295,000. Co-I.

Professional Activities

- 2018 New York State Attorney General. A Report on the Damages in New York, Massachusetts, and Connecticut from Power Plants in Midwestern States. Prepared for the New York State Attorney General. Contract: T104646.

- 2016 Industrial Economics, Incorporated, Contractor to: State of Minnesota Public Utilities Commission. IN THE MATTER OF THE FURTHER INVESTIGATION INTO ENVIRONMENTAL AND SOCIOECONOMIC COSTS UNDER MINNESOTA STATUTE 216B.2422, SUBDIVISION 3. MPUC Docket No. E999/CI-14-643 OAH Docket No. 80-2500-31888. Served as expert witness for the State of Minnesota.

- 2012 United States et al., v. Louisiana Generating, LLC. Civil Action NO. 09-100-RET-CN, Served as expert witness for Plaintiff, the United States of America.

- 2011 Industrial Economics Incorporated, Contractor to Bureau of Ocean Energy Management, Regulation and Enforcement. Contract: MMS M09PC00036. Project: Offshore Environmental Cost Model (OECM).

- 2011 United Nations Environment Programme. Project: Global Assessment of Black Carbon and Tropospheric Ozone. Contributing author on chapters 4 & 5 covering economic analysis and policy recommendations of Assessment.

- 2010 Industrial Economics Incorporated, Contractor to USEPA. Contract: EP-D-09-054. Project: Materials Damage Assessment.

- 2009 National Academy of Science, National Research Council. Contract: DELS-F290142. Project: Hidden Costs of Energy.

- 2009 Industrial Economics Incorporated, Contractor to USEPA. Contract: EP-W-04-023. Project: ECONOMIC IMPACT OF ACHIEVING NAAQS WITH AND WITHOUT CAIR EPA Innovations Contract

Awards

- 2022. Recipient: Richard M. Cyert Excellence in Teaching Award for the Undergraduate Economics Program. Tepper School of Business, Carnegie Mellon University.

- 2013. United States Environmental Protection Agency Scientific and Technological Achievement Award, Level II. Awarded for: 2012 "Global air quality and health co-benefits of mitigating near-term climate change through methane and black carbon emission controls ." Susan C. Anenberg, Joel Schwartz, Drew Shindell, Markus Amann, Greg Faluvegi, Zbigniew Klimont, Greet Janssens-Maenhout, Luca Pozzoli, Rita Van Dingenen, Elisabetta Vignati, Lisa Emberson, Nicholas Z. Muller, J. Jason West, Martin Williams, Volodymyr Demkine, W. Kevin Hicks, Johan Kuylenstierna, Frank Raes, Veerabhadran Ramanathan. *Environmental Health Perspectives.* 120(6): 831 - 839.

Invited Lectures and Presentations

- 2026 "On Reverse Auctions to Retire Polluting Capital." N.Z. Muller, Oberlin College, Oberlin, Ohio, USA.
- 2025 "Integrated Assessment Models for Air Pollution: What have we learned since the 1970s?" N.Z. Muller. Integrated Assessment: Connecting Natural Science and Economics to Answer Policy Questions. Yale University, New Haven, CT, USA.
- 2025 "Firewood in the American Economy: 1645 to 1900." N.Z. Muller. Rodgers Brothers, Inc. 40th Anniversary Event, Harmony, PA.
- 2025 "The Local and National Cost of Air Pollution: A (Local) Economist's Perspective." N.Z. Muller. Cancer and Environmental Network of Southwestern Pennsylvania.
- 2025 "Modeling Environmental Pollution Cost: Implications for the Measurement of Firm and Economy-Wide Value." N.Z. Muller. Google Modeling Talk Series.
- 2024 "Productivity and the Environmental Accounts." N.Z. Muller. Measuring Producitivity in an Age of Technological Change. Brookings Institution. Washington D.C.
- 2024 "On Reverse Auctions to Retire Polluting Capital." N.Z. Muller, University of Tennessee, Haslam School of Business, Knoxville, Tennessee, USA.
- 2024 "Distributional Weights in Economic Analysis." Robert W. Hahn, N.Z. Muller (presenter). McCourt School of Public Policy Seminar Series, Georgetown University, Washington D.C., USA.
- 2023 "Yale Climate, Environment, and Economic Growth Conference." Panelist. New Haven, CT, USA.
- 2023 "Environmental-Economic Accounts and Statistics Beyond Benefit-Cost Analysis." Panelist. AERE Virtual Workshop. Frontiers in Natural Capital and Green Accounting.
- 2023 "Polluting Public Funds: The Effect of Environmental Regulation on Municipal Bonds." A. Jha, S. Karolyi, N.Z. Muller (presenter). UT Environmental & Energy Economics Workshop, Austin, Texas, USA.
- 2022 "Integrated Assessment Models for Air Pollution: Methods, Challenges, and Applications." N.Z. Muller. Workshop on Atmospheric Transport and Economic Valuation of Air Pollution. Univ. of Mannheim, Germany.
- 2022 "Measuring Firm Environmental Performance to Inform ESG Investing." N.Z. Muller. Seminar in Environmental Economics and Policy. Economics and Public Policy Seminar, Imperial College London. U.K.

- 2022 "Measuring Firm Environmental Performance to Inform ESG Investing." N.Z. Muller. Seminar in Environmental Economics and Policy. Harvard University, Cambridge, MA, USA.
- 2022 "Air Pollution, Premature Mortality, and Natural Gas Extraction." N.Z. Muller. Environmental Health Project. Shale Gas and Public Health: Translating Science into Policy. Pittsburgh, PA.
- 2022 "Modeling the Effects of Natural Gas Extraction." N.Z. Muller. Protect PT. Pittsburgh, PA.
- 2021 "The Real Effects of Mandated CSR Disclosure on Firm Behavior: Evidence from the GHGRP." L. Yang, N.Z. Muller (presented), P. Liang., National Center for Environmental Economics, USEPA Seminar, Washington D.C., USA.
- 2021 "On the Green Interest Rate." N.Z. Muller. E-Axes Webinar. E-Axes Forum, Council on Economic Policies. Zurich, Switzerland, New York, USA.
- 2021 "Pollution Damage and the National Accounts." N.Z. Muller. U.S. Department of Commerce, Bureau of Economic Analysis' Cross-Directorate Seminar Series. Washington, D.C., USA.
- 2021 "Sustainability and the Economy." N.Z. Muller. Invited Lecture at Allderdice High School, Pittsburgh, PA.
- 2021 "Environmental Pollution: Implications for the Measurement of Firm and Economy-Wide Value." N.Z. Muller. Amazon Tech Talk.
- 2021 "The Real Effects of Mandated Carbon Disclosure on Firm Behavior: Evidence from the GHGRP." L. Yang, N.Z. Muller (presented), P. Liang., SEEK Workshop, Mannheim, Germany.
- 2020 "Modeling the "E" in ESG for Firms in the U.S. and Global Economy." Wolfe Research QES ESG Webinar, NY, NY, USA.
- 2019 "Recent Increases in Air Pollution: Evidence and Implications for Mortality." N.Z. Muller, K. Clay. Group Against Smog and Pollution Seminar, Pittsburgh, PA.
- 2019 "On the Relationship Between Environmental and Macroeconomic Policy." N.Z. Muller. Federal Reserve Bank of San Francisco. The Economics of Climate Change. San Francisco, CA.
- 2019 "On the Relationship Between Environmental and Macroeconomic Policy." N.Z. Muller. U.S. Environmental Protection Agency. Washington, D.C.
- 2019 "On the Relationship Between Environmental and Macroeconomic Policy." N.Z. Muller. Federal Reserve Board. Washington, D.C.

- 2019 "Long Run Environmental Accounting in the United States Economy." N.Z. Muller. Environmental and Energy Policy in the Economy, National Press Club, Washington, D.C.

- 2019 "Long Run Environmental Accounting in the United States Economy." N.Z. Muller. TREE Seiminar, Research Triangle Park, North Carolina.

- 2019 "An Index for Economic and Environmental Performance: Methods with an Application to Pittsburgh." N.Z. Muller. Metro21 Lunch and Learn Seminar. Pittsburgh, PA.

- 2018 "The Remarkable Decline in Air Pollution from the US Electricity Sector from 2010-2017" S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates (Muller presented.) Carnegie Mellon Electricity Industry Center Board Meeting. Pittsburgh, PA.

- 2018 "Boosting Growth by Accounting for the Environment." N.Z. Muller. Carnegie Mellon University, Tepper School of Business. Alumni Webinar.

- 2018 "The Remarkable Decline in Air Pollution from the US Electricity Sector from 2010-2017" S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates (Muller presented.) EPRI Electrification Conference. Long Beach, CA.

- 2018 "Reduced Complexity Models: Methods and Policy Applications." EPA ACE Center Meetings, Pittsburgh, PA.

- 2018 "Time Preference and The Great Depression: Evidence from Firewood Prices in Portland, Oregon." N.Z. Muller Northeast Workshop on Energy Policy and Environmental Economics, New York, NY.

- 2018 "Time Preference and The Great Depression: Evidence from Firewood Prices in Portland, Oregon." N.Z. Muller EEEP Seminar. Penn State University, State College, PA.

- 2018 "Reduced Complexity Models: Methods and Policy Applications." Society for Benefit-Cost Analysis. Washington, DC, USA.

- 2018 "Time Preference and The Great Depression: Evidence from Firewood Prices in Portland, Oregon." N.Z. Muller National Bureau of Economic Research, EEE Spring Meetings. Cambridge, MA.

- 2017 "Livestreaming Pollution: A New form of disclosure and a catalyst for citizen engagement?" Emiliano Huet-Vaughn, N.Z. Muller, Yen-Chia Hsu. EEEP Seminar. Penn State University, State College, PA.

- 2017 "The Environmental Consequences of Coal Storage and Delivery." Akshaya Jha, N.Z. Muller. Carnegie Mellon Electricity Industry Center Advisory Committee Meeting. Carnegie Mellon University, Pittsburgh, PA.

- 2017 "Pollution, Mortality Risk, and the Distribution of Income." N.Z. Muller, P.H. Matthews, V. Wiltshire-Gordon. Iowa State University Economics Department Seminar. Ames, IA.

- 2017 "Pollution Damage, Output, and Growth in the United States." N.Z. Muller. Environmental Defense Fund. Applied Economics Seminar. New York, NY.

- 2016 "The Distribution of Air Pollution from Electric Vehicle Adoption." S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates (Holland presented.) Energy Policy Tradeoffs between Economic Efficiency and Distributional Equity Conferece. Durham, NC. Sponsored by NBER and the Sloan Foundation.

- 2016 "Deriving Discount Rates with an Augmented Measure of Income." School of Economics Seminar, University of East Anglia, Norwich, U.K. N.Z. Muller

- 2016 "Social Costs of Power Production: Unanticipated Impacts on Measures of Output and Growth." Tyndall Centre for Climate Change Research Seminar, University of East Anglia, Norwich, U.K. N.Z. Muller

- 2016 "Air Pollution, Health, Policy, and Progress." N.Z. Muller. Stockholm Environmental Institute, York Environment and Sustainability Institute, York University Seminar and Panel Discussion. York, U.K. N.Z. Muller

- 2016 "The Distribution of Environmental Benefits and Costs Associated with the Federal Subsidy on the Purchase of Electric Vehicles." S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates (Yates presented.) NBER Meeting on Energy Policy Tradeoffs between Economic Efficiency and Distributional Equity.

- 2016 "Economics and Externalities of Moving Crude Oil by Pipelines and Railroads: Evidence from the Bakken Formation" K. Clay, A. Jha, N. Muller, R. Walsh. (Clay presented.) NBER Spring Meetings.

- 2016 "Deriving Discount Rates with an Augmented Measure of Income." University of Michigan, Environmental Economics Seminar. Ann Arbor, Michigan. N.Z. Muller

- 2016 "Carbon Management." Testimony to the State of Vermont House Committee on Natural Resources and Energy. Montpelier, VT. N.Z. Muller.

- 2016 "Deriving Discount Rates with an Augmented Measure of Income." University of Minnesota, Applied Economics Seminar. St. Paul, Minnesota. N.Z. Muller

- 2015 "Are there environmental benefits from driving electric vehicles? The importance of local factors." Carnegie Mellon University, Tepper School of Business Applied Micro Seminar.S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates. (Muller presented.)

- 2015 "The Social Costs of Energy Production and Use in the United States: Consequences for Measures of Output and Growth." University of Texas-Austin Energy Symposium. Austin, TX.

- 2015 "Environmental Benefit-Cost Analysis and the National Accounts." United States Association of Energy Economics Conference, Pittsburgh, PA.
- 2015 "Social Costs of Power Production: Unanticipated Impacts on Measures of Output and Growth." Carnegie Mellon Electricity Industry Center Advisory Committee Meeting. Carnegie Mellon University, Pittsburgh, PA.
- 2015 "Implications of Pollution Damage for Measures of Output, Growth, and Policy Analysis." Climate and Energy Decision Making Center Seminar, Carnegie Mellon University, Pittsburgh, PA.
- 2015 "Direct and Indirect Environmental Externalities in Oil Production: Evidence from the Bakken Formation." NBER Hydrocarbon Infrastructure and Transportation Meetings. Karen Clay, Akshaya Jha, N.Z. Muller. (Jha Presented.)
- 2015 "The AP2 Model" Minnesota Department of Commerce. St. Paul, Minnesota.
- 2015 "Measuring Spatial Heterogeneity in Environmental Externalities from Driving: A Comparison of Gasoline and Electric Vehciles." NBER Energy and Environment Working Group Spring Meetings. S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates. (Yates presented.)
- 2015 "Measuring Spatial Heterogeneity in Environmental Externalities from Driving: A Comparison of Gasoline and Electric Vehciles." ASSA and AEA Meetings, Boston, MA. S.P. Holland, E.T. Mansur, N.Z. Muller, A.J. Yates. (Yates presented.)
- 2014 "Environmental Benefit-Cost Analysis and the National Accounts." Workshop on Recent Advances and Challenges in Benefit-Cost Analysis, Toulouse School of Economics, Toulouse, France.
- 2014 "Environmental Benefit-Cost Analysis and the National Accounts." Sustainable Development Seminar, Columbia University, New York, New York.
- 2014 "The Net Benefits of the Acid Rain Program: What Can We Learn from the Grand Policy Experiment?" Resources for the Future, Washington, DC., with Maureen Cropper, Andrew Chupp, Ron Chan.
- 2014 "Environmental Benefit-Cost Analysis and the National Accounts." Heinz College Applied Micro Seminar, Carnegie Mellon University, Pittsburgh, Pennsylvania.
- 2014 "The Impact of Air Pollution Damage on Growth in the United States.", Engineering and Public Policy, Carnegie Mellon University, Pittsburgh, Pennsylvania.
- 2013 "The Impact of Air Pollution Damage on Growth in the United States.", Georgia Institute of Technology, School of Economics, Atlanta, Georgia.
- 2013 "Retrospective Study of the Acid Rain Program: How Large Were the Net Benefits of the ARP?" Resources for the Future, Washington, DC., with Maureen Cropper, Andrew Chupp, Ron Chan.

- 2013 "Using Marginal Damages in Environmental Policy." American Enterprise Institute, Washington, DC.
- 2013 "Towards the Measurement of Net Economic Welfare: Air Pollution Damage in the United States National Accounts - 2002, 2005, 2008." Congressional Budget Office,Washington, DC.
- 2012 "Towards theMeasurement of Net EconomicWelfare: Intertemporal Environmental Accounting in the United States." Department of Agricultural and Development Economics, Environmental Policy Initiative, Columbus, OH.
- 2012 "Towards the Measurement of Net Economic Welfare: Intertemporal Environmental Accounting in the United States." National Bureau of Economic Research Conference on Research on Income and Wealth, Cambridge, MA.
- 2012 "Towards the Measurement of Net Economic Welfare: Intertemporal Environmental Accounting in the United States." Association of Environmental and Resource Economists, 2nd Summer Conference, Asheville, NC.
- 2012 "The Air Pollution Damages from Offshore Energy Production." Association of Environmental and Resource Economists, 2nd Summer Conference, Asheville, NC.
- 2012 "Towards the Measurement of Net Economic Welfare: Intertemporal Environmental Accounting in the United States."1st Northeast Workshop on Energy Policy and Environmental Economics, Cornell University, Ithaca, NY.
- 2011 "The Air Pollution Emissions Experiments and Policy Model." United States Department of Justice, Environmental and Natural Resources Division, Washington, D.C.
- 2011 "Green Accounting: Air Pollution Damages by American Industry." Yale University, School of Forestry and Environmental Studies, New Haven, VT.
- 2011 "Optimal Climate Policy with Air Pollution Co-Benefits." University of Vermont, Economics Department Seminar, Burlington, VT.
- 2011 "Optimal Climate Policy with Air Pollution Co-Benefits." APPAM Fall Conference, Washington, DC.
- 2011 "Optimal Climate Policy with Air Pollution Co-Benefits." AERE Sessions, AAEA, NAREA, Joint Meetings, Pittsburgh, PA.
- 2011 "Optimal Climate Policy with Air Pollution Co-Benefits." Harvard School of Public Health Seminar, Boston, MA.
- 2011 "Optimal Climate Policy with Air Pollution Co-Benefits." UM Agricultural and Resource Economics Seminar, College Park, MD.
- 2010 "The Impact of Ozone Air Pollution on Livestock Mortality in the United States." AERE Sessions, SEA Joint Meetings, Atlanta, GA.

- 2010 "Optimal Climate Policy with Air Pollution Co-Benefits." UMASS-Amherst College Seminar Series, Amherst, MA.
- 2010 "The Impact of Ozone Air Pollution on Livestock Mortality in the United States." AERE Sessions, AAEA, WAEA, CAEA Joint Meetings, Denver, CO.
- 2010 "Environmental Accounting: Methods with an Application to the U.S. Economy." United States Environmental Protection Agency, National Center for Environmental Economics Seminar Series, Washington, D.C.
- 2010 "Environmental Accounting: Methods with an Application to the U.S. Economy." Executive Office of the President, The White House Council on Environmental Quality, Washington, D.C.
- 2010 "The Ancillary Benefits of Climate Change Policy in the United States." Yale University Environmental Economics Seminar, New Haven, CT.
- 2009 "Environmental Accounting: Methods with an Application to the U.S. Economy." National Bureau of Economic Research, Summer Institute, Cambridge, MA.
- 2009 "The Ancillary Benefits of Climate Change Policy in the United States." University of Southern California, Los Angeles, CA.
- 2009 "Environmental Accounting: Methods with an Application to the U.S. Economy." Harvard University Environmental Economics Seminar, Cambridge, MA.
- 2009 "Environmental Accounting: Methods with an Application to the U.S. Economy." Yale University Environmental Economics Seminar, New Haven, CT.
- 2008 "The Dirty Dozen: Measuring the Impacts of Air Pollution on the U.S. Economy." Howard E. Woodin Colloquium Series, Middlebury College, Middlebury, VT.

- 2007 "Efficient Pollution Regulation: Getting the Prices Right." National Bureau of Economic Research, Summer Institute, Cambridge, MA.
- 2007 "Price-Based Regulation of Air Pollution with Spatially-Variant Marginal Damages." Harvard University Environmental Economics Seminar. Cambridge, MA.
- 2006 "Price-Based Regulation of Air Pollution with Spatially-Variant Marginal Damages." Yale University Environmental Economics Seminar. New Haven, CT.
- 2006 "Towards Efficient Regulation of Air Pollution in the United States." Harvard Center for Risk Analysis Seminar Series. Harvard University, Cambridge, MA.
- 2006 "Measuring the Damages of Air Pollution in the United States." Camp Resources XIV. Wilmington, NC.
- 2006 "Measuring the Damages of Air Pollution in the United States." (Research Sketch). National Bureau of Economic Research, Summer Institute. Cambridge, MA.

Teaching

- AY 2025 - 2026: Sustainability, Energy, and Environmental Economics, The Sustainable Business, Energy Policy and Economics, Microeconomic Analysis.
- AY 2024 - 2025: Sustainability, Energy, and Environmental Economics, The Sustainable Business, Energy Policy and Economics, Microeconomic Analysis.
- AY 2023 - 2024: Sustainability, Energy, and Environmental Economics, The Sustainable Business, Energy Policy and Economics, Microeconomic Analysis.
- AY 2022 - 2023: Sustainability, Energy, and Environmental Economics, The Sustainable Business, Energy Policy and Economics, Microeconomic Analysis.
- AY 2021 - 2022: Sustainability, Energy, and Environmental Economics, Benefit-Cost Analysis, Energy Policy and Economics, Microeconomic Analysis.
- AY 2020 - 2021: Sustainability, Energy, and Environmental Economics, Benefit-Cost Analysis, Energy Policy and Economics, Microeconomic Analysis.
- AY 2019 - 2020 and prior years: Sustainability, Energy, and Environmental Economics, Benefit-Cost Analysis, Energy Policy and Economics, Microeconomic Analysis.

  Principles of Microeconomics, EPP Projects, Environmental Economics and Policy, Climate Change Economics, Conservation and Environmental Policy.

Professional Affiliations

American Economics Association

Association of Environmental and Resource Economists.

Ad-Hoc Referee

American Economic Review, Science, Proceedings of the National Academy of Science, Climate Change Economics, Atmospheric Environment, Journal of Environmental Economics

and Management, Energy and Resource Economics, Journal of Economic Education, Water

Resources Research, Contemporary Economic Policy, Environmental Science and Technol-

ogy, Berkeley Press Journal of Economic Analysis and Policy, Review of Income and Wealth, Review of Economic Statistics, Climatic Change.