

Susan Casper Anenberg

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EDUCATION

- 2011 Ph.D. Environmental Science and Engineering, Environmental Policy, University of North Carolina Gillings School of Global Public Health.
2008 M.S. Environmental Science and Engineering, University of North Carolina.
2004 B.A. Biology, Environmental Science, Northwestern University.

PROFESSIONAL EXPERIENCE

- 2016 - Associate Professor of Environmental and Occupational Health and of Global Health, George Washington University (2017 – current, with tenure 2021).
Co-Director of the GW Climate and Health Institute (2021 – current).
Director of the MPH in Global Environmental Health (2017 – current).
Professorial Lecturer in Environmental and Occupational Health (2016 – 2017).
2016 - 2020 Co-Founder and Principal, Environmental Health Analytics, LLC.
2014 - 2016 Deputy Managing Director for Recommendations, U.S. Chemical Safety Board.
2010 - 2014 Environmental Protection Specialist, U.S. Environmental Protection Agency.
2012 - 2013 Senior Advisor for U.S. Cookstoves Initiatives, U.S. Department of State.
2009 Science and Technology Policy Fellow, National Academy of Sciences.
2004 - 2006 Recommendations Specialist, U.S. Chemical Safety Board.

HONORS

- 2020 Arthur C. Stern Distinguished Paper Award for 2015 paper in *Journal of the Air & Waste Management Association*
2019 Reviewer of the Year 2018, *Environmental Research Letters*.
2018 Global asthma burden paper in *Environmental Health Perspectives* ranked in 99th percentile for online attention.
2018 Award for Outstanding Publication in the *Journal of Environmental and Resource Economics*.
2018 Exceptional Support to ORD Award, Multidisciplinary OAR and OGC Support for ISA Program, U.S. EPA.
2018 GW Research Days Sustainability Prize for Best Graduate Student poster (w/ Alex Lindahl).
2018 Editor's Citation for Excellence in Refereeing for *GeoHealth*.
2017 *Nature* diesel NOx article ranked in 99th percentile for online attention.
2016 Nominated to Climate and Clean Air Coalition Roster of Experts.
2015 Science and Technology Achievement Award, Level I, U.S. EPA.
2014 Science and Technology Achievement Award, Level II, U.S. EPA.
2014 Special Accomplishment Recognition Award, U.S. EPA.

2014	Director's Award for Leadership and Collaboration, U.S. EPA.
2013	Best Feature article in <i>Environmental Science and Technology</i> .
2012	Article featured in <i>Environmental Health Perspectives</i> Science Selections.
2010 - 2011	Presidential Management Fellowship, U.S. EPA.
2011	Special Act Award for Leadership and Collaboration, U.S. EPA.
2011	Academic Excellence Award, Delta Omega Honorary Society in Public Health.
2011	Harvard University Center for the Environment Fellowship (declined, 2011).
2010	Outstanding Student Paper Award, American Geophysical Union 2010 Fall Meeting.
2010	Elected to Sigma Xi.
2009	School-wide Student Travel Award, UNC School of Public Health.
2009	Student Achievement Award, UNC Environmental Science and Engineering.
2008	First place, student poster competition, 40th Annual Air Pollution Workshop.
2007 - 2008	Graduate Student Fellowship, UNC Institute for the Environment.

CONTRACTS AND GRANTS

Total costs are shown (portion managed by Anenberg in parentheses, if different from total)

Current

1. "Tiger Team Supplement - Using satellite NO₂ observations for public health surveillance and environmental policy planning at global, national, and urban scales", NASA September 1, 2021 – February 23, 2023, PI: Susan Anenberg, \$257,000.
2. "Value of GeoXO atmospheric composition data for estimating air pollution-related health impacts", NOAA August 1, 2021 – July 31, 2022, PI: Susan Anenberg, \$199,416.
3. "Using satellite NO₂ observations for public health surveillance and environmental policy planning at global, national, and urban scales", NASA January 25, 2021 – January 24, 2025, PI: Susan Anenberg, \$499,993.
4. "Data-driven forecasts of hazardous air quality events over North America", NASA January 25, 2021 – January 24, 2025, PI: Daniel Tong (Anenberg is Co-Investigator), \$499,000 (\$145,691).
5. "Inconsistent effects of social distancing on air quality in global cities: lessons for protecting near-term public health and designing longer-term urban transportation policies", NASA Rapid Response and Novel Research in Earth Sciences (RRNES)", June 1, 2020 – May 31, 2021, PI: Susan Anenberg, \$99,804.
6. "Advancing GW cross-disciplinary collaboration in climate change and public health research" George Washington University Cross-Disciplinary Research Fund, July 1, 2020 – June 30, 2022, PI: Susan Anenberg, \$49,895.
7. "Integrating satellites, ground monitoring, and modeling to estimate long-term NO₂ exposures and pediatric asthma impacts" Health Effects Institute, February 1, 2020 - January 31, 2022, PI: Susan Anenberg, \$125,000.

8. “ACRoBEAR Arctic Community Resilience to Boreal Environmental change: Assessing Risks from fire and disease” Belmont Forum, January 1, 2020 – December 31, 2023, PI: Stephen Arnold (Anenberg is Co-Investigator), \$2,182,800 (\$20,000).
9. “Methods and tools to integrate air quality and health into urban climate action planning” Wellcome Trust, November 1, 2019 – October 31, 2022, PI: Susan Anenberg, \$645,611.
10. “Using remote sensing and Earth system models to improve air quality and public health in megacities” NASA Award No. 80NSSC19K0193, September 1, 2018 – August 31, 2021, PI: Susan Anenberg, \$929,040.
11. “NASA Health and Air Quality Applied Science Team (HAQAST)”, NASA Award No. NNX16AQ26G, August 15, 2016 – August 14, 2021, PI: Daven Henze (Anenberg is Co-Investigator), \$438,143 (\$99,773).

Completed

1. “Integrating air quality and health impacts into C40 Climate Action Planning” Children’s Investment Fund Foundation/Clean Air Fund grant to C40 Cities, May 1, 2019 – March 31, 2021, PI: Susan Anenberg, \$370,000.
2. “Local-scale air pollution health impact assessment” Environmental Defense Fund, January 22, 2019 – December 31, 2020, PI: Susan Anenberg, \$147,230.
3. “Air quality and public health in urban climate action planning” George Washington University Milken Institute School of Public Health Pilot Grants Program, September 1, 2018 – August 31, 2020, PI: Susan Anenberg, \$49,961.
4. “NASA Health and Air Quality Applied Science Team – Tiger Team 2 Supplement” NASA Award No. NNX16AQ26G, September 1, 2019 – August 31, 2020, Co-Investigator, PI: Daven Henze (Anenberg is Project PI), \$65,000 (\$65,000).
5. “NASA Health and Air Quality Applied Science Team – Tiger Team 1 Supplement” NASA Award No. NNX16AQ26G, September 1, 2018 – August 31, 2019, PI: Susan Anenberg, \$110,000 (\$110,000).
6. “Further improving the ability of the BenMAP-CE tool to quantify the impacts to human health of aeroallergens and wildfires” Subcontract to Industrial Economics, EPA Contract EP-D-14-031, March 1, 2018 – September 30, 2019, PI: Susan Anenberg, \$76,751.
7. “Expert review to Air Pollutions Solutions document” US Agency for International Development/Social Solutions International, Inc., May 9, 2019 – June 7, 2019, PI: Susan Anenberg, \$3,400.
8. “Global burden of disease from transportation-related air pollution” Contract from International Council on Clean Transportation, May 1, 2018 – April 30, 2019, PI: Susan Anenberg, \$60,000.

9. “Further improving the ability of the BenMAP-CE tool to quantify the impacts to human health of aeroallergens and wildfires” Subcontract to Industrial Economics, EPA Contract EP-D-14-031, October 1, 2017 – May 31, 2018, PI: Susan Anenberg, \$11,470.
10. “Synthesize literature on household air pollution impacts on non-communicable diseases for Bloomberg Household Air Pollution Initiative project” Subcontract to Health Effects Institute on Bloomberg Philanthropies contract, April 17, 2017 – April 15, 2018, PI: Susan Anenberg, \$70,000.
11. “NASA Health and Air Quality Applied Science Team (HAQAST) – Tiger Team Supplement”, NASA Award No. NNX16AQ26G, August 15, 2017 – August 14, 2018, PI: Daven Henze (Anenberg is Co-Investigator), \$100,000 (\$10,000).
12. “Estimate air pollution, health, climate, and crop impacts of diesel vehicle NO_x emissions and their mitigation in 11 major vehicle markets” Contract from the International Council on Clean Transportation, January 1, 2016 – June 30, 2017, PI: Susan Anenberg, \$84,000.
13. “Develop a Gold Standard Methodology to estimate and verify averted disability-adjusted life years (ADALYs) from reduced household air pollution exposure achieved by clean cookstove interventions” Contract from the Gold Standard Foundation, February 1, 2016 - December 31, 2016, PI: Susan Anenberg, \$36,625.
14. “Develop a proof-of-concept case study that uses EPA’s BenMAP-CE model to quantify and monetize impacts of climate-related changes in aeroallergen levels on respiratory health in the U.S.” Subcontractor to Industrial Economics, Inc., EPA Contract EP-D-14-032, July 11, 2016 – September 30, 2017, PI: Susan Anenberg, \$28,420.
15. “Review the health, climate, cryosphere, and environmental impacts of residential solid fuel combustion for cooking and heating, and draft white papers to inform the Combined Cooking and Heating/Coalstoves Summit” Subcontractor to International Cryosphere Climate Initiative, sponsored by Climate and Clean Air Coalition, October 1, 2016 – May 31, 2017, PI: Susan Anenberg, \$21,500.
16. “Estimate climate and health benefits of clean cookstove programs in Mozambique” Contract from World Bank, Contract No. 7179092, April 22, 2016 – June 30, 2016, PI: Susan Anenberg, \$18,750.
17. “Develop and finalize Science and Technical Advisory Panel document intended to assist GEF and implementing agencies incorporate measures that reduce black carbon in climate change mitigation projects and impact to reduce greenhouse gas emissions” Contract from United Nations Environment Programme, Contract No. 25806, November 1, 2014 – April 30, 2015, PI: Susan Anenberg, \$25,000.
18. “Develop and finalize publication on general principles for the proper conduct of air pollution health risk assessment” Contract from World Health Organization, Contract No. 201233406, May 15, 2015 – June 15, 2015, PI: Susan Anenberg, \$8,000.

19. “Develop a domestic heating component and funding proposal” Contract from the Climate and Clean Air Coalition, April 30, 2015 – September 30, 2015, PI: Susan Anenberg, \$10,200.

PUBLICATIONS

Peer-reviewed journal Articles

Name underlined = trainee of Dr. Anenberg; * = Dr. Anenberg is corresponding or senior author

Submitted

- Laughner, J.L., J.L. Neu, D.S. Schimel, P.O. Wennberg, K. Barsanti, K.W. Bowman, A. Chatterjee, B. Croes, H. Fitzmaurice, D.K. Henze, J. Kim, E.A. Kort, Z. Liu, K. Miyazaki, A.J. Turner, S. **Anenberg**, J. Avise, H. Cao, D. Crisp, J.A. de Gouw, A. Eldering, J.C. Fyfe, D.L. Goldberg, K.R. Gurney, S. Hasheminassab, F. Hopkins, C. Ivey, D.B.A. Jones, J. Liu, N.S. Lovenduski, R.V. Martin, G.A. McKinley, L. Ott, B. Poulter, M. Ru, S.P. Sander, N. Swart, Y.L. Yung, Z.-C. Zeng (2021) Societal shifts due to COVID-19 reveal large-scale complexities and feedbacks between atmospheric chemistry and climate change. Under review.
- Badr, H.S., B.F. Zaitchik, G.H. Kerr, N.-L.H. Nguyen, Y.-T. Chen, P. Hinson, J.M. Colson, M.N. Kosek, E. Dong, H. Du, A. Mohegh, D.L. Goldberg, S.C. **Anenberg**, L.M. Gardner (2021) Unified real-time environmental-epidemiological data for multiscale modeling of the COVID-19 pandemic. Under review.
- Castillo, M.D., P.L. Kinney, V. Southerland, A. Arno, K. Crawford, A. van Donkelaar, M. Hammer, R.V. Martin, S.C. **Anenberg*** (2021) Estimating intra-urban inequities in PM_{2.5}-attributable health impacts: A case study for Washington, DC. Under review.
- Apte, J.S., S. Seraj, S.E. Chambliss, M. Hammer, S.C. **Anenberg**, A. van Donkelaar, R.V. Martin, M. Brauer (2021) Air inequality: Global divergence in urban fine particulate matter. Under review.
- Nawaz, O., S. **Anenberg**, D. Goldberg, D. Jo, B. Nault, J. Jimenez, H. Cao, C. Harkins, Z. Qu (2021) Impacts of sectoral, regional, species and day-specific emissions on air pollution and public health in Washington DC. Under review.
- Southerland, V.A., S.C. **Anenberg***, M. Brauer, A. Mohegh, M. Hammer, R. Martin, A. van Donkelaar, J. Apte (2021) Global urban temporal trends in fine particulate matter (PM_{2.5}) and attributable health burdens. Under review.
- Anenberg***, S.C., A. Mohegh, D.L. Goldberg, G.H. Kerr, M. Brauer, K. Burkart, P. Hystad, A. Larkin, S. Wozniak, L. Lamsal (2021) Long-term trends in urban NO₂ concentrations and associated pediatric asthma cases: estimates from global datasets. Under review.
- Goldberg, D.L., S.C. **Anenberg**, L.N. Lamsal, Z. Lu, E.E. McDuffie, S.J. Smith, D.G. Streets (2021) Urban NO_x emissions around the world declined faster than anticipated between 2005 and 2019. Under review.
- Castillo, M.D., S.C. **Anenberg**, L.S. Johnson, M. Malik, M.L. Nelson, N.V. Pendleton, Y. Sun, P.L. Kinney (2021) Assessing the health co-benefits of urban climate mitigation actions: Where are we now?

Published or in press

1. **Anenberg***, S.C., G.H. **Kerr**, D.G. Goldberg (2021) Leveraging satellite data to address air pollution inequities. *EM Magazine*, in press.
2. Goldberg, D.G., **S.C. Anenberg**, G.H. **Kerr**, Z. Lu, D.G. Streets (2021) TROPOMI: A revolutionary new satellite instrument measuring NO_x air pollution. *EM Magazine*, in press.
3. **Kerr**, G.H., D.L. Goldberg, S.C. **Anenberg** (2021) COVID-19 lockdowns reveal persistent disparities in nitrogen dioxide pollution levels. *Proceedings of the National Academy of Sciences*, in press.
4. Malley, C.S., W.K. Hicks, J.C.I. Kuylenstierna, E. Michaelopoulou, A. Molotoks, J. Slater, C.G. Heaps, S. Ulloa, J. Veysey, D.T. Shindell, D.K. Henze, O. Nawaz, S.C. **Anenberg**, B. Mantlana, T.P. Robinson (2021) Integrated assessment of global climate, air pollution, and dietary, malnutrition and obesity health impacts of food production and consumption between 2014 and 2018. *Environmental Research Communications*, in press.
5. Gorris, M.E. S.C. **Anenberg**, D.L. Goldberg, G.H. **Kerr**, J.D. Stowell, D. Tong, B.F. Zaitchik (2021) Shaping the future of science: COVID-19 highlighting the importance of GeoHealth. *GeoHealth*, <https://doi.org/10.1029/2021GH000412>.
6. Neumann, J.E., M. Amend, S. **Anenberg**, P.L. Kinney, M. Sarofim, J. Martinich, J. Lukens, J. Xu, H. Roman (2021) Estimating PM_{2.5}-related premature mortality and morbidity associated with future wildfire emissions in the western U.S. *Environmental Research Letters*, <https://doi.org/10.1088/1748-9326/abe82b>.
7. Goldberg, D., S. **Anenberg**, G.H. **Kerr**, A. **Mohegh**, Z. Lu, D.G. Streets (2021) TROPOMI NO₂ in the United States: A detailed look at the annual averages, weekly cycle, effects of temperature, and correlation with surface NO₂ concentrations. *Earth's Future*, <https://doi.org/10.1029/2020EF001665>.
8. **Southerland**, V.A., S.C. **Anenberg***, M. Harris, J. Apte, Hystad, A. van Donkelaar, R. Martin, M. Beyers, A. Roy (2021) Assessing the distribution of air pollution health risks within cities: a neighborhood-scale analysis leveraging high resolution datasets in the Bay Area, California. *Environmental Health Perspectives*, <https://doi.org/10.1289/EHP7679>.
9. Holloway, T., D. Miller, S. **Anenberg**, M. Diao, B. Duncan, A. Fiore, D. Henze, J. Hess, P. Kinney, Y. Liu, J. Neu, S. O'Neill, R.B. Pierce, A. Russell, D. Tong, J.J. West, M. Zondlo (2021) Satellite monitoring for air quality and health. *Annual Review of Biomedical Data Science*, In press.
10. **Mohegh**, M., D. Goldberg, P. Achakulwisut, M. Brauer, P. Hystad, S. **Anenberg*** (2021) Sensitivity of estimated NO₂-attributable pediatric asthma incidence to grid resolution and urbanicity. *Environmental Research Letters*, <https://doi.org/10.1088/1748-9326/abce25>.
11. **Anenberg***, S., **Haines**, S., E. **Wang**, P. Kinney, N. Nassikas (2020) Synergistic health effects of air pollution, temperature, and pollen exposure: A systematic review of epidemiological evidence. *Environmental Health*, <https://doi.org/10.1186/s12940-020-00681-z>.
12. Hess, J.J., N. Ranadive, C. Boyer, L. Aleksandrowicz, S. **Anenberg**, K. Aunan, K. Belesova, M.L. Bell, S. Bickersteth, K. Bowen, M. Burden, D. Campbell-Lendrum, E. Carlton, G.

- Cisse, F. Cohen, H. Dai, A. Dangour, P. Dasgupta, H. Frumkin, P. Gong, R.J. Gould, A. Haines, S. Hales, I. Hamilton, T. Hasegawa, M. Hashizume, Y. Honda, D.E. Horton, A. Karambelas, H. Kim, S.E. Kim, P.L. Kinney, I. Kone, K. Knowlton, J. Lelieveld, V.S. Limaye, Q. Liu, L. Madaniyazi, M.E. Martinez, D.L. Mauzerall, J. Milner, T. Neville, M. Nieuwenhuijsen, S. Pachauri, F. Perera, H. Pineo, J.V. Remais, R.K. Saari, J. Sampedro, P. Scheelbeek, J. Schwartz, D. Shindell, P. Shyamsundar, T.J. Taylor, C. Tonne, D. van Vuuren, C. Wang, N. Watts, J.J. West, P. Wilkinson, S.A. Wood, J. Woodcock, A. Woodward, Y. Xie, Y. Zhang, K. Ebi (2020) Guidelines for modeling and reporting health effects of climate change mitigation actions. *Environmental Health Perspectives*, doi:10.1289/EHP6745.
13. Kuylenstierna, J.C.I., C.G. Heaps, T. Ahmed, H.W. Vallack, W.K. Hicks, M.R. Ashmore, C.S. Malley, G. Wang, E.N. Lefevre, S.C. **Anenberg**, F. Lacey, D.T. Shindell, U. Bhattacharjee, D.K. Henze (2020) Using the LEAP-IBC tool to assess air quality and climate co-benefits of emission reduction strategies: A case study for Bangladesh. *Environment International*, 145, 106155, doi:10.1016/j.envint.2020.106155.
 14. Goldberg, D.L., S.C. **Anenberg**, Z. Lu, D.G. Streets, D. Griffin, C.A. McLinden (2020) Disentangling the impact of the COVID-19 lockdowns on urban NO₂ from natural variability. *Geophysical Research Letters*, doi:10.1029/2020GL089269.
 15. **Anenberg***, S.C., M. Bindl, M. Brauer, J.J. Castillo, B.N. Duncan, A.M. Fiore, R. Fuller, D.L. Goldberg, D.K. Henze, J. Hess, T. Holloway, X. Jin, I. Kheirbek, P. Kinney, Y. Liu, A. Mohegh, J. Patz, M. Pescador-Jimenez, D. Tong, K. Walker, N. Watts, J.J. West (2020) Using satellites to track indicators of global air pollution and climate change impacts: Lessons learned from a NASA-supported science-stakeholder collaborative. *GeoHealth*, doi:10.1029/2020GH000270.
 16. Filippelli, G., S. **Anenberg**, M. Taylor, A. van Geen, H. Khreis (2020) New approaches to identifying and reducing the global burden of disease from pollution. *GeoHealth*, doi:10.1029/2018GH000167.
 17. Shaffer, R.M., S.P. Sellers, M.G. Baker, R. deBuen, J. Frostad, M.K. Suter, S.C. **Anenberg**, J. Balbus, D. Bellinger, L. Birnbaum, M. Brauer, A. Cohen, K.L. Ebi, R. Fuller, P. Grandjean, J.J. Hess, P.J. Landrigan, B. Lanphear, S.J. London, A.A. Rooney, E. Setton, J.D. Stanaway, L. Trasande, K. Walker, H. Hu (2019) Improving and expanding estimates of the global burden of disease due to environmental health risk factors. *Environmental Health Perspectives*, 127(10):105001, doi:10.1289/EHP5496.
 18. **Anenberg***, S.C., J. Miller, D. Henze, R. Minjares, P. Achakulwisut (2019) The global burden of transportation tailpipe emissions on air pollution-related mortality in 2010 and 2015. *Environmental Research Letters*, 14, 094012, doi:10.1088/1748-9326/ab35fc.
 19. **Anenberg***, S.C., P. Achakulwisut, M. Brauer, D. Moran, J.S. Apte, D.K. Henze (2019) Particulate matter mortality and relationships with carbon dioxide in 250 urban areas worldwide. *Scientific Reports*, 9(1), 11552, doi:10.1038/s41598-019-48057-9.
 20. **Anenberg**, S.C., A. Dutton, C. Goulet, D. Swain, B. van der Pluijm (2019) Toward a resilient global society: Air, sea level, earthquakes, and weather. *Earth's Future*, 7, doi:10.1029/2019EF001242. (All authors contributed equally)

21. **Anenberg***, S.C., and C. **Kalman** (2019) Extreme weather, chemical facilities, and vulnerable communities in the U.S. Gulf Coast: a disastrous combination. *GeoHealth*, doi: 10.1029/2019GH000197.
22. **Achakulwisut**, P., S.C. **Anenberg**, J.E. Neumann, S.L. Penn, N. Weiss, A. Crimmins, N. Fann, J. Martinich, H. Roman, L.J. Mickley (2019) Effects of increasing aridity on airborne dust and health in the U.S. Southwest under climate change. *GeoHealth*, doi: 10.1029/2019GH000187.
23. **Achakulwisut**, P., M. Brauer, P. Hystad, S.C. **Anenberg*** (2019) Global, national, and urban burdens of pediatric asthma incidence attributable to ambient NO₂ pollution. *Lancet Planetary Health*, doi: 10.1016/S2542-5196(19)30046-4.
24. Neumann, J.E., S.C. **Anenberg**, K. Weinberger, M. Amend, S. Gulati, A. Crimmins, H. Roman, N. Fann (2018) Present and future asthma emergency room visits associated with exposure to oak, birch, and grass pollen in the United States. *GeoHealth*, doi:10.1029/2018GH000153.
25. Schmale, J., S. Arnold, K. Law, T. Thorp, S. **Anenberg**, W. Simpson, J. Mao, K. Pratt. (2018) Local Arctic air pollution: A neglected but serious problem. *Earth's Future*, 6, <https://doi.org/10.1029/2018EF000952>.
26. **Anenberg***, S.C., D.K. Henze, V. Tinney, P.L. Kinney, W. Raich, N. Fann, C.S. Malley, H. Roman, L. Lamsal, B. Duncan, R.V. Martin, A. van Donkelaar, M. Brauer, R. Doherty, J.E. Jonson, Y. Davila, K. Sudo, J.C.I. Kuylenstierna (2018) Estimates of the global burden of ambient PM_{2.5}, ozone, and NO₂ on asthma incidence and emergency room visits, *Environmental Health Perspectives*, 126(10):17004-1 to 17004-14, <https://doi.org/10.1289/EHP3766>.
27. Ford, B., M. Val Martin, S.E. Zelasky, E.V. Fischer, S.C. **Anenberg**, C.L. Heald, J.R. Pierce. (2018) Future fire impacts on smoke concentrations, visibility, and health in the contiguous United States. *GeoHealth*, 2, <https://doi.org/10.1029/2018GH000144>.
28. Achakulwisut, P., L. Mickley, S.C. **Anenberg**. (2018) Increasing airborne dust and health risks in the southwest US under future climate change. *Environmental Research Letters*, 13, 054025, doi:10.1088/1748-9326/aabf20.
29. Malley, C.S., D.K. Henze, J.C.I. Kuylenstierna, H.W. Vallack, Y. Davila, S.C. **Anenberg**, M.C. Turner, M.R. Ashmore (2017) Long-term ambient ozone exposure and attributable mortality in adults ≥ 30 years of age: Updated global estimates for respiratory outcomes. *Environmental Health Perspectives*, 087021.
30. **Anenberg***, S.C., J. Miller, R. Minjares, L. Du, D. Henze, F. Lacey, C. Malley, V. Franco, L. Emberson, Z. Klimont, C. Heyes (2017) Impacts and mitigation of excess diesel NO_x emissions in 11 major vehicle markets. *Nature*, doi:10.1038/nature22086.
31. **Anenberg***, S.C., K. Weinberger, H. Roman, J. Neumann, A. Crimmins, N. Fann, J. Martinich, P. Kinney (2017) Impacts of oak pollen on allergic asthma in the United States and potential influence of future climate change. *GeoHealth*, 1, doi:10.1002/2017GH000055.
32. **Anenberg***, S.C., D. Henze, F. Lacey, A. Irfan, P. Kinney, G. Kleiman, A. Pillarisetti (2017) Air pollution-related health and climate benefits of clean cookstove programs in Mozambique. *Environmental Research Letters*, 12: 025066.

33. Tinney, V., **S.C. Anenberg***, M. Kaszniak, B. Robinson (2016) Eighteen years of recommendations to prevent industrial chemical incidents: Results and lessons learned of the U.S. Chemical Safety Board, *Public Health*, DOI: 10.1016/j.puhe.2016.04.011.
34. **Anenberg***, S.C., A. Belova, J. Brandt, N. Fann, S. Greco, S. Guttikunda, M.-E. Heroux, F. Hurley, M. Krzyzanowski, S. Medina, B. Miller, K. Pandey, J. Roos, R. Van Dingenen (2015) Survey of ambient air pollution health risk assessment tools, *Risk Analysis*, DOI: 10.1111/risa.12540.
35. Sarofim, M., S. Waldhoff, S.C. **Anenberg** (2015) Valuing the ozone-related health co-benefits of methane emission controls, *Environmental and Resource Economics*, DOI: 10.1007/s10640-015-9937-6.
36. Fann, N., C. Nolte, P. Dolwick, T. Spero, A. Curry-Brown, S. Phillips, S. **Anenberg** (2014) The geographic distribution and economic value of climate change-related ozone health impacts in the United States, *Journal of Air and Waste Management Association*, 65:5, 570-580.
37. **Anenberg***, S.C., J.J. West, H. Yu, M. Chin, M. Schulz, D. Bergmann, I. Bey, H. Bian, T. Diehl, A. Fiore, P. Hess, E. Marmer, V. Montanaro, R. Park, D. Shindell, T. Takemura, F. Dentener (2014) Impacts of intercontinental transport of anthropogenic fine particulate matter on human mortality, *Air Quality, Atmosphere, and Health*, 7, 369:379.
38. West, J.J., S.J. Smith, R.A. Silva, V. Naik, Y. Zhang, Z. Adelman, M.M. Fry, S. **Anenberg**, L.W. Horowitz, J.-F. Lamarque (2013) Co-benefits of mitigating global greenhouse gas emissions for future air quality and human health, *Nature Climate Change*, 3, 885-889.
39. Silva, R.A., J.J. West, Y. Zhang, S.C. **Anenberg**, J.-F. Lamarque, D.T. Shindell, W.J. Collins, S. Dalsoren, G. Faluvegi, G. Folberth, L.W. Horowitz, T. Nagashima, V. Naik, S. Rumbold, R. Skeie, K. Sudo, T. Takemura, D. Bergmann, P. Cameron-Smith, I. Cionni, R. Doherty, V. Eyring, B. Josse, I. MacKenzie, D. Plummer, M. Righi, D. Stevenson, S. Strode, S. Szopa, G. Zeng (2013) Global premature mortality due to anthropogenic outdoor air pollution and the contribution of past climate change, *Environmental Research Letters*, 8, 034005, doi:10.1088/1748-9326/8/3/034005.
40. **Anenberg***, S.C., K. Balakrishnan, J. Jetter, O. Masera, S. Mehta, J. Moss, V. Ramanathan (2013) Cleaner cooking solutions to achieve health, climate, and economic co-benefits, *Environmental Science and Technology*, 47:3944-3952. (Invited).
41. **Anenberg***, S.C., J. Schwartz, D. Shindell, M. Amann, G. Faluvegi, Z. Klimont, G. Maenhout, L. Pozzoli, R. van Dingenen, E. Vignati, L. Emberson, N.Z. Muller, J.J. West, M. Williams, V. Demkine, W.K. Hicks, J. Kuylenstierna, F. Raes, V. Ramanathan (2012) Global air quality and health co-benefits of mitigating near-term climate change through methane and black carbon emission controls, *Environmental Health Perspectives*, 120:831-839.
42. Shindell, D., J.C.I. Kuylenstierna, E. Vignati, R. van Dingenen, M. Amann, Z. Klimont, S.C. **Anenberg**, N. Muller, G. Janssens-Maenhout, F. Raes, J. Schwartz, G. Faluvegi, L. Pozzoli, K. Kupiainen, L. Hoglund-Isakson, L. Emberson, D. Streets, V. Ramanathan, K. Hicks, K. Oanh, G. Milly, M. Williams, V. Demkine, D. Fowler (2012) Simultaneously mitigating near-term climate change and improving human health and food security, *Science*, 335:183-189.

43. **Anenberg, S.C.**, K. Talgo, S. Arunachalam, P. Dolwick, C. Jang, J.J. West (2011) Impacts of global, regional, and sectoral black carbon emission reductions on surface air quality and human mortality, *Atmospheric Chemistry and Physics*, 11:7253-7267.
44. Fann, N., A. Lamson, S.C. **Anenberg**, K. Wesson, D. Risley, B.J. Hubbell (2011) Estimating the national public health burden associated with exposure to ambient PM_{2.5} and ozone, *Risk Analysis*, 32:81-95.
45. Shindell, D., G. Faluvegi, M. Walsh, S.C. **Anenberg**, R. Van Dingenen, N.Z. Muller, J. Austin, D. Koch, G. Milly (2011) Climate, health, agricultural and economic impacts of tighter vehicle emissions standards, *Nature Climate Change*, 1:59-66.
46. **Anenberg, S.C.**, L.W. Horowitz, D.Q. Tong, J.J. West (2010) An estimate of the global burden of anthropogenic ozone and fine particulate matter on premature human mortality using atmospheric modeling, *Environmental Health Perspectives*, 118(9):1189-1195.
47. **Anenberg, S.C.**, J.J. West, A.M. Fiore, D.A. Jaffe, M.J. Prather, D. Bergmann, C. Cuvelier, F.J. Dentener, B.N. Duncan, M. Gauss, P. Hess, J.E. Jonson, A. Lupu, I.A. MacKenzie, E. Marmer, R.J. Park, M. Sanderson, M. Schultz, D.T. Shindell, S. Szopa, M. Garcia Vivanco, O. Wild, and G. Zeng (2009) Intercontinental impacts of ozone pollution on human mortality, *Environmental Science and Technology*, 43(17):6482-6487.
48. Gomez M., S. **Casper**, E.A. Smith (2007) The CSB Incident Screening Database: Description, summary statistics, and uses, *Journal of Hazardous Materials*, 159(1):119-129.

Other peer-reviewed publications

Arctic Monitoring and Assessment Program (AMAP), 2021 (chapter lead author). “Health and Ecosystem Impacts” Chapter 8 in: AMAP 2021 Assessment: Arctic climate, air quality, and health impacts from short-lived climate forcers (SLCFs). Tromsø, Norway.

Anenberg, S.C., J. Miller, D. Henze, R. Minjares, 2019 (lead author). A global snapshot of the air pollution-related health impacts of transportation sector emissions in 2010 and 2015. International Council on Clean Transportation, Washington, DC.

Health Effects Institute, 2018 (lead author). HEI Communication 18: Household air pollution and non-communicable disease. Boston, MA.

U.S. Environmental Protection Agency, 2017 (contributor). Multi-Model Framework for Quantitative Sectoral Impacts Analysis: A Technical Report for the Fourth National Climate Assessment. Washington, DC.

International Council on Clean Transportation, 2017 (contributing author). Shifting gears: The effects of a future decline in diesel market share on tailpipe CO₂ and NO_x emissions in Europe. Berlin, Germany.

Gold Standard Foundation, 2017 (lead author). Methodology to Estimate and Verify Averted Mortality and Disability Adjusted Life Years (ADALYs) from Cleaner Household Air. Geneva, Switzerland.

World Bank, 2016 (lead author). Air pollution-related health and climate benefits of clean cookstove programs in Mozambique: A scoping analysis. Washington, DC.

World Health Organization, 2016 (lead author). Health risk assessment of air pollution – general principles for policy makers. Bonn, Germany.

Sims, R., V. B. Gorsevski, and S. **Anenberg**, 2015 (lead author). Developing Projects That Address Black Carbon at the Global Environment Facility: A Science and Technical Advisory Panel Advisory Document. United Nations Environment Program, Global Environment Facility, Washington, D.C.

U.S. Global Change Research Program, 2015 (lead author). National Climate Assessment Special Report on Climate Change and Human Health. U.S. Global Change Research Program.

New Climate Economy, 2015 (lead author). Air Pollution Benefits of Climate Policies. The Global Commission on the Economy and Climate.

The World Bank and the International Cryosphere Climate Initiative, 2013 (contributing author). On Thin Ice: How Cutting Pollution Can Slow Warming and Save Lives. The World Bank, Washington, DC.

United Nations Environment Programme (UNEP), 2012 (contributing author). “Atmosphere.” Chapter 2, Global Environmental Outlook 5, UNEP, Nairobi.

U.S. EPA, 2012 (lead author). Report to Congress on Black Carbon. U.S. EPA Office of Air Quality Planning and Standards, RTP, NC.

United Nations Environment Programme (UNEP), 2011 (contributing author). Near-Term Climate Protection and Clean Air Benefits: Actions for Controlling Short-Lived Climate Forcers, UNEP, Nairobi.

United Nations Environment Programme (UNEP) and World Meteorological Organization (WMO), 2011 (lead author). Opportunities to Limit Near-Term Climate Change: An Integrated Assessment of Black Carbon and Tropospheric Ozone, and its Precursors, UNEP, Nairobi.

United Nations Economic Commission for Europe (UNECE), 2011 (contributing author). “Impacts on Health, Ecosystems, and Climate.” Chapter 5, Hemispheric Transport of Air Pollution 2010, UNECE, Geneva.

EPA Regulatory Documents

U.S. EPA, 2014 (contributing author). Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills. Advanced Notice of Proposed Rule. Office of Air Quality Planning and Standards, RTP, NC.

U.S. EPA, 2014 (contributing author). Standards of Performance for Municipal Solid Waste Landfills. Proposed Rule. Office of Air Quality Planning and Standards, RTP, NC.

U.S. EPA, 2014 (lead author for national risk assessment). Ozone Risk and Exposure Assessment, Second Draft Technical Support Document for 2014 Review of National Ambient Air Quality Standard for Ozone. Office of Air Quality Planning and Standards, RTP, NC.

U.S. EPA, 2012 (contributing author). Regulatory Impact Analysis for Final New Source Performance Standards and Amendments to the National Emissions Standards for Hazardous Air Pollutants for the Oil and Natural Gas Industry. Final Report. Office of Air Quality Planning and Standards, RTP, NC.

U.S. EPA, 2011 (lead author for health benefits assessment). Regulatory Impact Analysis of the Mercury and Air Toxics Standards for Power Plants, Final Report. Office of Air Quality Planning and Standards, RTP, NC.

Correspondence and Commentary

Achakulwisut, P., L. Mickley, S. **Anenberg** (2018) Increased deaths and illnesses from inhaling airborne dust: An understudied impact of climate change. *The Conversation*, June 11, 2018. Available at <https://theconversation.com/increased-deaths-and-illnesses-from-inhaling-airborne-dust-an-understudied-impact-of-climate-change-96625>.

Fann, N., A.D. Lamson, S.C. **Anenberg**, B.J. Hubbell (2013) Letter in response to Fraas & Lutter article: “Uncertain benefits estimates for reductions in fine particle concentrations,” *Risk Analysis*, 33:755-756.

Anenberg, S.C., J. Moss, J. Jetter, V. Ramanathan (2012) Clean stoves benefit climate and health, *Nature*, 490:343.

Fann, N., A. Lamson, S.C. **Anenberg**, K. Wesson, D. Risley, B.J. Hubbell (2012) Response to Cox letter: “Miscommunicating risk, uncertainty, and causation: Fine particle air pollution and mortality risk as an example”, *Risk Analysis*, 32:768-770.

Anenberg, S.C., J.J. West, L.W. Horowitz, D.Q. Tong (2011) The global burden of air pollution on mortality: Anenberg et al. respond, *Environ Health Perspect.* 119(4):A158-A159.

Anenberg, S.C., J.J. West, L.W. Horowitz, D.Q. Tong (2010) The global burden of air pollution on mortality: Anenberg et al. respond, *Environ Health Perspect.* 118(10):A424-A425.

Other Publications

Anenberg, S. and D. Goldberg (2020) The cars are parked. Can we breathe safely now? Blog post on Medium, published May 28, 2020, available at: <https://medium.com/gwpublichealth/the-cars-are-parked-can-we-breathe-safely-now-f7bf93e72ce8>.

Descari, S. et al. (2019) Alaskan Layered Pollution And Chemical Analysis (ALPACA) White Paper. Available at: <https://alpaca.community.uaf.edu/files/2019/05/ALPACA-whitepaper.pdf>.

Anenberg, S.C. (2017) Impacts of oak pollen on allergic asthma in the USA and potential effect of future climate change: a modelling analysis, *Lancet Planetary Health Abstracts*.

West, J.J., Y. Zhang, S. Smith, R. Silva, J. Bowden, V. Naik, Y. Li, D. Gilfillan, Z. Adelman, M. Fry, S. **Anenberg**, L. Horowitz, J.-F. Lamarque (2017) Co-benefits of global and domestic greenhouse gas emissions for air quality and human health, *Lancet Planetary Health Abstracts*.

Climate and Clean Air Coalition (2017) Addressing black carbon and other emissions from combined cooking+heating and coal heating stoves, White Paper #4: Solutions – technological, policy, financing. Paris, France. Available at: <http://warsawstovesummit.org/>.

Climate and Clean Air Coalition (2017) Addressing black carbon and other emissions from combined cooking+heating and coal heating stoves, White Paper #3: Health, climate, and environmental impacts. Paris, France. Available at: <http://warsawstovesummit.org/>.

Climate and Clean Air Coalition (2017) Addressing black carbon and other emissions from combined cooking+heating and coal heating stoves, White Paper #2: Problem definition – coal heating. Paris, France. Available at: <http://warsawstovesummit.org/>.

Climate and Clean Air Coalition (2017) Addressing black carbon and other emissions from combined cooking+heating and coal heating stoves, White Paper #1: Problem definition – combined cooking and heating. Paris, France. Available at: <http://warsawstovesummit.org/>.

Anenberg, S.C. (2017) Estimating air pollution-related health impacts of future changes in wildfire activity. Memo to the U.S. Environmental Protection Agency Office of Air Quality Planning and Standards, Washington, DC.

Anenberg, S.C. (2011) *Using atmospheric models to estimate global air pollution mortality*, Ph.D. Dissertation, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599.

Casper, S. (2008) Using EPA’s Environmental Benefits and Mapping Analysis Program (BenMAP) for Global Health Impact Analysis, final report for NNEMS Fellowship, available at http://www.epa.gov/air/benmap/docs/BenMAP_Global.pdf.

Casper, S. (2008) *The global burden of anthropogenic ozone and fine particulate matter on premature human mortality*, M.S. Thesis, University of North Carolina, Chapel Hill, NC 27599.

RECENT MEDIA HIGHLIGHTS

- 2021 [Popular Science](#), [Chemical and Engineering News](#)
- 2020 [CityLab](#), [Scripps channels](#), [WTOP](#), [National Geographic](#), [Washington Post](#), [NPR](#), [Yale Climate Connections](#)
- 2019 [Guardian](#), [US News & World Report](#), [BBC Radio 4](#), [Press Association](#), [Popular Science](#), [Le Monde](#)
- 2018 [Earth.com](#), [Smithsonian Magazine](#), [NASA](#), [Environmental Health News](#)
- 2017 [Guardian](#), [Economic Times](#), [LA Daily News](#), [Scientific American](#), [Jakarta Post](#), [New Scientist](#)

PRESENTATIONS

Conference and Workshop Presentations

*presentation by co-author

1. **Anenberg, S.C.** (2021) Overview of the NASEM workshop on leveraging advances in remote geospatial technologies to inform precision environmental health decisions, National Institute for Environmental Health Sciences, June 15, virtual.
2. **Anenberg, S.C.** and I. Kheirbeck (2021) Methods and tools to integrate air quality and health into urban climate action planning. Wellcome Trust Our Planet Our Health Knowledge Sharing Seminar: Policy Engagement, May 21, virtual.
3. **Anenberg, S.C.** (2021) Using satellite remote sensing to estimate air pollution health impacts in cities worldwide. American Thoracic Society Annual Meeting, May 17, virtual.

4. Marwah, H., N. Rosseau, S. Mangipudi, C. Ward, H. Akselrod, R. Harold, S. **Anenberg**, A. Keswani (2021) Investigating air pollution as a contributor to health disparities during the COVID-19 pandemic. 2021 Clinical Climate Change Conference, Jan. 8.
5. **Anenberg**, S.C., M. Castillo, D. Goldberg, D. Henze, P. Kinney, D. Malashock, J. Marshall, A. Moheg, O. Nawaz, V. Southerland, C. Tessum, M. Brauer, Z. Chafe, M. Harris, C. Heaps, I. Kheirbek, G. Kleiman, J. Kuylenstierna, C. Malley, A. Roy, C. Thomas (2021) Recent Advances in Integrating Climate Change, Air Quality, and Public Health into Urban Decision-Making. American Meteorological Society, Jan. 15 (Invited Core Science Keynote)
6. Kerr, G., D. Goldberg, S.C. **Anenberg** (2021) Impact of Coronavirus Lockdowns on NO₂: Successes and Challenges for Environmental Inequality in the United States. American Meteorological Society Annual Meeting, Jan. 11.*
7. Goldberg, D., S.C. **Anenberg**, et al. (2021) Top-down NO_x Emissions Estimates for 50 Global Cities during the Last 15 Years. American Meteorological Society Annual Meeting, Jan. 11.*
8. von Salzen, K., S. C. Anenberg, S. Arnold, S. Eckhardt, A. Ekman, M. G. Flanner, M. Gauss, U. Im, Z. Klimont, S. Krishnan, K. Kupiainen, R. Mahmood, D. Olivié, N. Oshima, L. Pozzoli, S. Rao, M. Sand, M. Sigmond, K. Tsigaridis, S. Tsyro, S. Turnock, R. van Dingenen, C. Whaley, and B. Winter (2021) Synergistic and competing influences of air pollutants on air quality and Arctic climate. American Meteorological Society Annual Meeting, Jan. 11. *
9. Bowman, K.W., K. Miyazaki, S. **Anenberg**, et al. (2020) Global air quality responses to the COVID-19 pandemic. American Geophysical Union Fall Meeting, Dec. 8. *
10. Goldberg, D.L., S. **Anenberg**, D. Griffin, C.A. McLinden, G.H. Kerr, Z. Lu, D.G. Streets (2020) Using TROPOMI and re-analysis meteorology to disentangle the impact of the COVID-19 lockdowns on urban NO₂ from natural variability. American Geophysical Union Fall Meeting, Dec. 7. *
11. Castillo, M., P. Kinney, V. Southerland, R. Martin, A. van Donkelaar, S. **Anenberg** (2020) Using satellite remote sensing to estimate intra-urban PM_{2.5} health-related inequalities and environmental injustices in Washington, DC. American Geophysical Union Fall Meeting, Dec. 16. *
12. Malashock, D., S. **Anenberg**, M. DeLang, J. Becker, M.L. Serre, J.J. West, K-L Chang, O.R. Cooper (2020) Evaluating ozone trends and attributable mortality in urban areas worldwide. American Geophysical Union Fall Meeting, Dec. 16. *
13. **Anenberg**, S., D.L. Goldberg, G.H. Kerr, Z. Lu, D. Griffin, C.A. McLinden, B.N. Duncan, J. Miller, R.J. Minjares, J. Dreessen (2020) Inconsistent NO₂ drops during COVID-19 lockdowns: lessons for protecting near-term public health and designing longer-term environmental policies. American Geophysical Union Fall Meeting, December 10. (Invited)
14. Nawaz, M.O., D. Henze, D. Goldberg, S. **Anenberg**, D. Jo, B. Nault, J.L. Jimenez, H. Cao, C. Harkins, Z. Qu (2020) Characterizing the regional, sectoral and species-specific sources of pollution exposure and its associated health impacts in urban environments: case studies in Washington, D.C. and Santiago, Chile. American Geophysical Union Fall Meeting, Dec. 14.*
15. Kerr, G.H., D.L. Goldberg, S. **Anenberg** (2020) Environmental injustices associated with coronavirus-related changes in NO₂ pollution, American Geophysical Union Fall Meeting, Dec. 14. *

16. **Anenberg**, S.C., D. Goldberg, G. Kerr (2020) NO₂ changes during COVID-19 lockdowns in North American, IGAC/AMIGO Workshop: Changes in Atmospheric Composition During the COVID-19 Lockdowns, November 3. (Invited)
17. Goldberg, D., S. Anenberg, G. Kerr, Z. Lu, C. McLinden, D. Griffin (2020) Disentangling the impact of COVID-19 lockdowns on urban NO₂ from natural variability, Community Modeling and Analysis System (CMAS) Conference, virtual, October 29. *
18. Castillo, M., S. **Anenberg**, V. Southerland, A. Van Donkelaar, R. Martin (2020) Using satellite remote sensing to estimate intra-urban disparities in air pollution health impacts in Washington, DC. International Society for Environmental Epidemiology, virtual, August 24-27. *
19. Nelson, M., M. Castillo, V. Southerland, S. **Anenberg** (2020) Nature and well-being: Estimating the effects of exposure to green space on health disparities across Washington, DC. International Society for Environmental Epidemiology, virtual, August 24-27. *
20. Rao, S., S. **Anenberg**, R. Van Dingenen, A. Diz-Lois Palomares, Z. Klimont, K. Von Salzen (2020) Air quality and health impacts of integrated global greenhouse gas and air pollution emission scenarios. International Society for Environmental Epidemiology, virtual, August 24-27. *
21. Southerland, V., S. **Anenberg**, A. Roy, M. Harris (2020) Assessing the distribution of air pollution health risks within cities: a neighborhood-scale analysis leveraging high resolution datasets in the Bay Area, California. International Society for Environmental Epidemiology, virtual, August 24-27. *
22. Malashock, D., S. **Anenberg**, K-L Chang, O. Cooper, J. West (2020) Estimates of ozone-attributable burden of disease in urban areas worldwide. International Society for Environmental Epidemiology, virtual, August 24-27. *
23. Mohegh, A., D.L. Goldberg, S. **Anenberg** (2020) The influence of spatial resolution on NO₂-attributable pediatric asthma burden estimates at the global, national, and urban scale. International Society for Environmental Epidemiology, virtual, August 24-27. *
24. Burkart, K., S. Wozniak, S.C. **Anenberg**, P. Hystad, D. Goldberg, A. Larkin, A. Mohegh, M. Brauer (2020) Evaluating the strength of evidence between long-term NO₂ exposure and pediatric asthma incidence for potential inclusion into the Global Burden of Disease Study. International Society for Environmental Epidemiology, virtual, August 24-27. *
25. **Anenberg**, S., M. Brauer, P. Hystad, K. Burkart, D.L. Goldberg, A. Larkin, A. Mohegh, S. Wozniak, B. Duncan, L. Lamsal (2020) Long-term trends in NO₂ exposure and associated pediatric asthma impacts in urban areas worldwide. International Society for Environmental Epidemiology, virtual, August 24-27.
26. **Anenberg**, S. (2020) Air pollution, COVID-19, and public health: what we know and don't know. Japan Geophysical Union and American Geophysical Union Joint Meeting, July 13.
27. **Anenberg**, S. (2020) Inconsistent effects of COVID-19 lockdowns on NO₂ pollution in cities globally: Evidence from satellite remote sensing and chemical transport modeling. National Academies Committee on Seismology and Geodynamics, July 14.
28. **Anenberg**, S., M. Brauer, D. Goldberg (2020) Taking a wider view of NO₂ pollution: Estimating NO₂'s health impacts from local to global scales. NASA Health and Air Quality Applied Science Team 2020 Webinar Series, March 3.
29. Goldberg, D., S. **Anenberg**, A. Mohegh, Z. Lu, D. Streets (2020) Applications of satellite NO₂ data. Air and Waste Management Regional Air Quality Symposium, College Park, MD, Feb. 13. *

30. **Anenberg, S.** (2020) Recent advances in assessing health impacts of air pollution within cities worldwide. American Meteorological Society, Boston, MA, Jan. 15.
31. Roy, A., V. Southerland, M. Harris, **S. Anenberg** (2020) Disparities in the health burden of air pollution on the hyperlocal scale: Case study for the California Bay Area. American Meteorological Society, Boston, MA, Jan. 15. *
32. **Anenberg, S.** (2020) The U.S. Clean Air Act: Successes and challenges for air quality and health. National Council on Science and the Environment, Washington, DC, Jan. 6.
33. Southerland, V.T., S.C. **Anenberg**, M. Harris, A. Roy, J. Apte, P. Hystad, A. Vodonos, J. Schwartz (2019) Assessing the distribution of air pollution health risks within cities: a neighborhood-scale analysis leveraging high resolution datasets in the Bay area, California. American Geophysical Union, San Francisco, CA, Dec. 19.*
34. Goldberg, D.L., **S. Anenberg**, A. Mohegh, B. de Foy, D. Griffin, C. McLinden, B. Duncan, N. Krotkov, L. Lamsal, F. Liu, O. Nawaz, D. Henze, Z. Lu, D. Streets (2019) High-resolution NO₂ exposure estimates and top-down NO_x emissions using OMI NO₂ and TROPOMI NO₂. American Geophysical Union, San Francisco, CA, Dec. 19.*
35. Nawaz, M.O., D.K. Henze, S.C. **Anenberg**, D. Goldberg, Z. Qu (2019) Source attribution of PM_{2.5} and O₃ concentrations and health outcomes from 2010 and 2011 in Washington D.C. using sensitivity analyses in the GEOS-Chem adjoint model. American Geophysical Union, San Francisco, CA, Dec. 19.*
36. Xu, J., R.V. Martin, A. White, X. Yue, L.J. Mickley, D. Henze, J. Luken, M. Amend, H. Roman, J. Neumann, S.C. **Anenberg**, A. Crimmins (2019) Uncertainties in future western U.S. wildfires and their impacts on air quality. American Geophysical Union, San Francisco, CA, Dec. 19.*
37. Mohegh, A., **S. Anenberg**, D. Goldberg (2019) Influence of spatial resolution on NO₂-attributable asthma incidence. American Geophysical Union, San Francisco, CA, Dec. 19.*
38. **Anenberg, S.** (2019) Health impacts of transportation-related air pollution. EDF Emerging Issues Workshop – Leveraging High-Resolution Transportation Data to Create Healthier Cities, New York, NY, Nov. 21.
39. **Anenberg, S.** (2019) Nexus of extreme heat, air quality, climate, and health. National Oceanic and Atmospheric Administration Annual Earth System Science and Modeling Community Workshop, Silver Spring MD, Nov. 19.
40. Goldberg, G., Z. Lu, D. Streets. **S. Anenberg**, P. Achakulwisut, A. Mohegh, V. Southerland, B. Duncan, L. Lamsal, N. Krotkov, F. Liu, D. Griffin, C. McLinden, B. de Foy (2019) Estimating air pollution emissions, exposures, and public health impacts in cities worldwide. New Applications in the Use of Satellite Data Monitoring for Population Health, Huntsville, AL, October 10.*
41. Goldberg, G., Z. Lu, D. Streets. **S. Anenberg**, P. Achakulwisut, A. Mohegh, V. Southerland, B. Duncan, L. Lamsal, N. Krotkov, F. Liu, D. Griffin, C. McLinden, B. de Foy (2019) Policy-relevant applications of satellite data: Estimating air pollution emissions, exposures, and public health impacts in cities worldwide. NASA Health and Air Quality Applied Science Team 6th Meeting, Pasadena, CA, July 10.*
42. Nawaz, O., D.K. Henze, C.S. Malley, J.C.I. Kuylenstierna, H.W. Vallack, Y. Davila, S.C. **Anenberg**, S. Terry, A. Curry-Brown, N. Fann, E. Lefevre, C. Heaps, S. Penn, H. Roman, J. Neumann (2019) Source attribution of climate and health impacts from aerosols. 9th International GEOS-Chem Meeting, Cambridge, MA, May 6.*

43. Achakulwisut, P., M. Brauer, P. Hystad, S.C. **Anenberg** (2019) Global, national, and urban burdens of pediatric asthma incidence attributable to ambient NO₂ pollution. Health Effects Institute Annual Meeting, Seattle, Washington, May 6.*
44. Achakulwisut, P., S.C. **Anenberg**, J.E. Neumann, S.L. Penn, A. Crimmins, N. Fann, J. Martinich, L.J. Mickley (2019) Sensitivity of airborne dust to drought in the US Southwest: what are the implications for public health under future climate change? American Meteorological Society, Phoenix, Arizona, Jan. 9.*
45. Achakulwisut, P., S.C. **Anenberg**, M. Brauer, D. Moran, P. Hystad, C. Kalman, D. Henze, J. Apte (2019) Using satellite-derived data to estimate the burden of disease from ambient air pollution in cities worldwide, American Meteorological Society, Phoenix, Arizona, Jan. 8.*
46. **Anenberg**, S.C. (2019) The HAQAST Indicators Tiger Team: Using remote sensing to track air quality and climate change effects, NASA Health and Air Quality Applied Science Team 5th Meeting, Phoenix, Arizona, Jan. 3.
47. Henze, D.K., C. Malley, J.C.I. Kuylenstierna, R.W. Pinder, S. Terry, H. Vallack, C. Heaps, E. Lefevre, S. **Anenberg**, S.L. Penn, A. Curry-Brown, N. Fann, J. Neumann, H. Roman, K. Hicks, Y. Davila, E.A. Marais, F. Lacey (2018) Linking global-scale and urban-scale integrated assessment tools, American Geophysical Union Fall Meeting, Washington, DC, Dec. 12.*
48. Kinney, P., Y. Liu, S. **Anenberg**, M.Z. Al-Hamdan, F. Freedman, M. Castillo (2018) Developing high resolution particulate matter surfaces for use in community health assessments, American Geophysical Union Fall Meeting, Washington, DC, Dec. 14.*
49. Achakulwisut, P., S.C. **Anenberg**, J.E. Neumann, S.L. Penn, A. Crimmins, N. Fann, J. Martinich, L.J. Mickley (2018) Linkages between drought and dust in the US Southwest: Implications for air quality and public health under future climate change, American Geophysical Union Fall Meeting, Washington, DC, Dec. 10.*
50. Neumann, J.E., S. **Anenberg**, K.R. Weinberger, M. Amend, S. Gulati, A. Crimmins, H. Roman, N. Fann, P.L. Kinney (2018) Estimates of the present and future asthma emergency department visits associated with exposure to oak, birch, and grass pollen in the United States, American Geophysical Union Fall Meeting, Washington, DC, Dec. 13.*
51. **Anenberg**, S., P. Achakulwisut, M. Brauer, D. Henze, P. Kinney, C. Kalman (2018) Using satellite-derived surface concentrations to estimate the mortality associated with ambient air pollution in cities worldwide, American Geophysical Union Fall Meeting, Washington, DC, Dec 12.
52. **Anenberg**, S. (2018) From science to policy: Estimating the health impacts of air pollution to inform decision-making. American Geophysical Union Fall Meeting, Washington, DC, Dec 11.
53. Achakulwisut, P. and S. **Anenberg** (2018) Linkages between drought and dust in the US Southwest: Implications for air quality and public health under future climate change, U.S. Air Quality Seminars and Discussion, Washington, DC, Oct 9.*
54. **Anenberg**, S. (2018) NASA HAQAST Hi-Res Tiger Team: Neighborhood-scale air pollution health impact assessment, NASA Health and Air Quality Applied Science Team webinar, Washington, DC, Sept. 28.
55. **Anenberg**, S., H.A. Roman, M. Amend (2018) Future wildfires and air pollution-related health damages, International Society for Environmental Epidemiology, Ottawa, Canada, August 27.*

56. **Anenberg, S.** and A. Lindahl (2018) Neighborhood scale health impacts from PM_{2.5} in four United States metropolitan areas, International Society for Environmental Epidemiology, Ottawa, Canada, August 27.*
57. **Anenberg, S.** (2018) Using satellite-derived PM_{2.5} to estimate neighborhood scale health impacts, NASA Health and Air Quality Applied Science Team 4, Madison, WI, July 17.
58. **Anenberg, S.** (2018) Alaskan Pollution and Chemical Analysis workshop: Approaches to atmospheric health effect/impact studies, Alaskan Pollution and Chemical Analysis workshop, Fairbanks, AK, May 14.
59. Schmale, J., K. Law, S. Arnold, T. Thorp, K. Pratt, W. Simpson, J. Mao, **S. Anenberg**, A. Evgrafova, P. Tejsner, A. Rautio (2018) Impacts of future Arctic air pollution: Designing a transdisciplinary research agenda for sustainable development, Polar 2018 Conference, Davos, Switzerland, June 15-26.*
60. **Anenberg, S.** and R. Doherty (2018) The global burden of ambient air pollution on asthma. Planetary Health Annual Meeting, Edinburgh, UK, May 29.*
61. **Anenberg, S.**, H.A. Roman, M. Amend (2018) Future wildfires and air pollution-related health damages, Planetary Health Annual Meeting, Edinburgh, UK, May 29.*
62. Bangoura, A. and **S. Anenberg** (2018) Impact of water, sanitation, and hygiene interventions on environmental enteric dysfunction in children in developing countries: A systematic review, George Washington University Research Days, Washington, DC, April 11.*
63. **Anenberg, S.** and A. Lindahl (2018) Neighborhood scale health impacts from PM_{2.5} in four United States metropolitan areas, George Washington University Research Days, Washington, DC, April 11.* *Awarded best poster in Sustainability category*
64. Koziomko, J. and **S. Anenberg** (2018) Recycled tire crumb rubber playgrounds or athletic fields and air pollution hazards to children: A systematic review, George Washington University Research Days, Washington, DC, April 11.*
65. Val Martin, M., B. Ford, S. Zelinsky, C.L. Heald, F. Li, D.M. Lawrence, **S. Anenberg**, E.V. Fischer, J.R. Pierce (2017) Quantifying future US PM_{2.5} and associated health effects due to changes in wildfires, American Geophysical Union Fall Meeting, New Orleans, LA, Dec. 11-15.*
66. Chafe, Z., **S. Anenberg**, Z. Klimont, K. Kupiainen, J. Lewis, J. Metcalfe, P. Pearson (2017) Mitigation of short-lived climate pollutants from residential coal heating and combined heating/cooking stoves: Impacts on the cryosphere, policy options, and co-benefits, American Geophysical Union Fall Meeting, New Orleans, LA, Dec. 11-15.*
67. Law, K., J. Schmale, **S. Anenberg**, S. Arnold, W.R. Simpson, J. Mao, S. Starkweather (2017) Local air pollution in the Arctic: Knowledge gaps, challenges, and future directions, American Geophysical Union Fall Meeting, New Orleans, LA, Dec. 11-15.*
68. Achakulwisut, P., L.J. Mickley, L. Shen, **S. Anenberg** (2017) What controls springtime fine dust variability in the western United States? Implications for air quality and public health risks under future climate change, American Geophysical Union Fall Meeting, New Orleans, LA, Dec. 11-15.*
69. Henze, D.K., Y. Davila, **S. Anenberg**, C. Malley, J.C.I. Kuylenstierna, H. Vallack, M.R. Ashmore, M. Turner, K. Sudo, J.E. Jonson, M. Chin, R.M. Doherty (2017) Is ozone, rather than PM_{2.5}, actually the largest contributor to premature deaths associated with trans-continental transport of air pollution? American Geophysical Union Fall Meeting, New Orleans, LA, Dec. 11-15.*

70. Kupiainen, K., N. Karvosenoja, S. **Anenberg** (2017) Workshop on Climate change, air pollution and health: Strengthening the evidence base for policy making in Nordic countries, Oslo, Norway, Dec. 1.*
71. **Anenberg**, S. (2017) Estimating the global burden of ambient air pollution on asthma using satellite-derived exposure estimates, NASA Health and Air Quality Applied Science Team Meeting, Palisades, NY, Nov. 28, 2017.
72. **Anenberg**, S. (2017) Climate and respiratory health – the health implications of air pollution and climate change, Climate and Respiratory Health – Focus Asthma Workshop at The Collider, Asheville, NC, Nov. 9. (*Invited keynote*)
73. **Anenberg**, S. (2017) Air pollution health impact assessment: Previous work and considerations for Arctic-specific analyses, air Pollution in the Arctic: Climate, Environment and Societies (PACES) 2nd Workshop, Victoria, Canada, June 27.
74. **Anenberg**, S.C., J. Miller, R. Minjares, L. Du, D. Henze, F. Lacey, C. Malley, L. Emberson, V. Franco, Z. Klimont, C. Heyes (2017) Impacts and mitigation of excess diesel NO_x emissions in 11 major vehicle markets, Health Effects Institute Annual Meeting, Alexandria, VA, Apr. 29 – May 2. (*Invited*)
75. **Anenberg**, S.C. (2017) Global ICCT scenarios for road transport... and other ongoing activities, UNECE Convention on Long-Range Transboundary Air Pollution, Task Force on Integrated Assessment Modeling, Geneva, Switzerland, May 2. (*Invited*)
76. Lacey, F., C. Weidinmyer, S. **Anenberg**, D. Henze (2017) Arctic temperature impacts from regional and national home heating emissions, Climate and Clean Air Coalition Summit on Black Carbon and Other Emissions from Residential Coal Heating Stoves and Combined Cooking + Heating Stoves, Warsaw, Poland, May 30.
77. **Anenberg**, S.C., K. Weinberger, H. Roman, J. Neumann, A. Crimmins, N. Fann, J. Martinich, P. Kinney (2017) Impacts of oak pollen on allergic asthma in the United States and potential influence of future climate change, Planetary Health Annual Meeting, Boston, MA, Apr. 26.*
78. **Anenberg**, S.C., E. Carter, Z. Chafe, Z. Klimont, F. Lacey, J. Metcalfe, P. Pearson (2017) Combined heating and cooking stoves and coal heating stoves: Global air quality, health, climate, cryosphere, and environmental impacts, International Conference on Arctic Science: Bringing Knowledge to Action, Washington, DC, Apr. 25.
79. **Anenberg**, S.C. (2017) Metrics for accounting for the health impacts of black carbon and methane interventions, Climate and Clean Air Coalition Workshop on Metrics for Evaluating and Reporting on Black Carbon and Methane Emissions, Ottawa, Canada, Mar. 16. (*Invited*)
80. **Anenberg**, S.C. (2017) Estimating the global health benefits of emissions mitigation: Example of diesel NO_x, NASA Health and Air Quality Applied Science Team 2nd meeting, Seattle, WA, Feb. 28.
81. Henze, D.K., S. **Anenberg**, J. Miller, V. Franco, L. Du, L. Emberson, F. Lacey, C. Malley, R. Minjares (2016) Integrated assessment of health, crop, and climate impacts of mitigating excess diesel NO_x emissions in 11 major vehicle markets, American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 11-16.*
82. **Anenberg**, S., J. Miller, F. Lacey, D. Henze, V. Franco, L. Du, R. Minjares, C. Malley, L. Emberson (2016) Health and climate impacts in and from selected G-20 countries using realistic diesel emissions under present and future scenarios, International Global Atmospheric Chemistry Project Science Conference, Breckenridge, CO, Sept. 26-30.*

83. **Anenberg, S.**, J. Miller, V. Franco, L. Du, F. Lacy, D. Henze, C. Malley, R. Minjares (2016) Impacts and mitigation of excess diesel NO_x emissions in 11 major vehicle markets, 17th IUAPPA World Clean Air Congress and 9th CAA Better Air Quality Conference, Busan, South Korea, Aug. 29 – Sept. 2.
84. Fann, N., S. **Anenberg**, J. Kuylenstierna, H. Vallack (2014) New tools for estimating the human health benefits of reducing short-lived climate pollutants, Better Air Quality Conference, Oral presentation, Colombo, Sri Lanka, Nov. 19-21.*
85. West, J., S.J. Smith, R. Silva, V. Naik, Z. Adelman, M.M. Fry, S. **Anenberg**, Y. Zhang, L.W. Horowitz, J.-F. Lamarque, L.K. Emmons (2012) Co-benefits of Global Greenhouse Gas Mitigation for Future Air Quality and Human Health via Two Mechanisms, American Geophysical Union (AGU) Fall Meeting 2012, Oral presentation, San Francisco, CA, Dec. 3-7.*
86. Silva, R.A., S.C. **Anenberg**, J.J. West, J.-F. Lamarque, D. Shindell, D. Bergmann, T.K. Bernsten, P. Cameron-Smith, W.J. Collins, S.J. Ghan, B. Josse, T. Nagashima, V. Naik, D. Plummer, J.M. Rodriguez, S. Szopa, G. Zeng (2012) The impact of projected future air pollutant emissions on global human mortality, American Geophysical Union (AGU) Fall Meeting 2012, Oral presentation, San Francisco, CA, Dec. 3-7.*
87. Akhtar, F., B. Henderson, S. Napelenok, D. Henze, S. **Anenberg**, J. Langstaff, R. Pinder (2012) Quantifying the sensitivity of U.S. ozone concentrations to domestic vs. international emissions through coupled GEOS-Chem Adjoint and CMAQ DDM source-receptor modeling, Community Modeling and Analysis System (CMAS) Conference, Oral presentation, Durham, NC, Oct. 15-17.*
88. Silva, R.A., S.C. **Anenberg**, J.J. West, J.-F. Lamarque, D. Shindell, D. Bergmann, T.K. Bernsten, P. Cameron-Smith, W.J. Collins, S.J. Ghan, B. Josse, T. Nagashima, V. Naik, D. Plummer, J.M. Rodriguez, S. Szopa, G. Zeng (2012) The impact of projected future air pollutant emissions on global human mortality, Community Modeling and Analysis System (CMAS) Conference, Poster presentation, Durham, NC, Oct. 15-17.*
89. Zhang, Y., J.J. West, M. Fry, Z. Adelman, R. Silva, S. Smith, V. Naik, S. **Anenberg**, L.W. Horowitz, J.-F. Lamarque (2012) Effects of changes in emissions and climate change on global air quality: a study of the air quality co-benefits of GHGs mitigation, Community Modeling and Analysis System (CMAS) Conference, Poster presentation, Durham, NC, Oct. 15-17.*
90. Silva, R.A., S.C. **Anenberg**, J.J. West, J.-F. Lamarque, D. Shindell, D. Bergmann, T.K. Bernsten, P. Cameron-Smith, W.J. Collins, S.J. Ghan, B. Josse, T. Nagashima, V. Naik, D. Plummer, J.M. Rodriguez, S. Szopa, G. Zeng (2012) The impact of projected future air pollutant emissions on global human mortality, International Society for Environmental Epidemiology, Poster presentation, Columbia, SC, August 27-30.*
91. West, J.J., S.J. Smith, R.A. Silva, V. Naik, Z. Adelman, M.M. Fry, S. **Anenberg**, Y. Zhang, L.W. Horowitz, J.-F. Lamarque, L. Emmons (2012) Co-benefits of global greenhouse gas mitigation for future air quality and human health via two mechanisms, International Society for Environmental Epidemiology, Poster presentation, Columbia, SC, August 27-30.*
92. **Anenberg**, S.C., B. Henderson, C. Fulcher, J. Langstaff, K. Wesson, S. Dutton, F. Akhtar, Z. Pekar, N. Fann, P. Dolwick, B. Hubbell, L. Zhang (2012) Contributions of international anthropogenic emissions to ozone-related mortality in the United States, International Society for Environmental Epidemiology, Poster presentation, Columbia, SC, August 27-30.

93. Kuylenstierna, J.C.I., D. Shindell, Z. Klimont, R. van Dingenen, M. Amann, S. **Anenberg**, E. Vignati, F. Raes, H. Vallack, K. Hicks, L. Emberson, D. Streets, M. Williams, R. Mills, K. Oanh, L. Cifuentes, V. Ramanathan (2012) Achieving multiple climate and clean air benefits: Mitigating short-lived climate forcers, Planet Under Pressure Conference, Poster presentation, London, UK, March 26-29.*
94. **Anenberg**, S.C., with UNEP/WMO Black Carbon and Tropospheric Ozone Assessment Team (2011) Health co-benefits of mitigating short-lived climate forcers, AGU Fall Meeting, Oral presentation, San Francisco, CA, December 4-9. (*Invited*).
95. **Anenberg**, S.C., J.J. West, M. Schulz, H. Bian, T. Diehl, R. Doherty, A. Fiore, P. Hess, J.E. Jonson, R. Park, D. Shindell, T. Takemura (2011) Impacts of intercontinental transport of aerosols on human mortality, AGU Fall Meeting, Poster presentation, San Francisco, CA, December 4-9.*
96. West, J.J. S.J. Smith, R.G. Silva, Z. Adelman, M. Fry, S. **Anenberg**, L.W. Horowitz, J.-F. Lamarque, L. Emmons (2011) Co-benefits of global greenhouse gas mitigation for air quality and human health via two mechanisms, AGU Fall Meeting, Poster presentation, San Francisco, CA, December 4-9.*
97. Silva, R., Z. Adelman, M. Fry, S.C. **Anenberg**, J.J. West (2011) The contribution of anthropogenic emissions sectors to the global burden of human mortality due to ozone and particulate matter air pollution, 10th Annual Community Modeling and Analysis System (CMAS) Conference, Poster presentation, Durham, NC, Oct. 24-26.*
98. **Anenberg**, S.C., K. Talgo, P. Dolwick, C. Jang, S. Arunachalam, J.J. West (2010) Sensitivity of surface air quality and global mortality to global, regional, and sectoral black carbon emission reductions, AGU Fall Meeting, Oral presentation, San Francisco, CA, December 13-17. (*Outstanding Student Paper Award*).
99. **Anenberg**, S.C., K. Talgo, P. Dolwick, C. Jang, S. Arunachalam, J.J. West (2010) Sensitivity of surface air quality and global mortality to global, regional, and sectoral black carbon emission reductions, 9th Annual CMAS Conference, Poster presentation, Durham, NC, October 11-13.
100. **Anenberg**, S.C., K. Talgo, J.J. West (2010) Impacts of global and US black carbon emission reductions on human mortality, AAAR Specialty Conference on Air Pollution and Health, Poster presentation, San Diego, CA, March 22-26.
101. **Anenberg**, S.C., L.W. Horowitz, D.Q. Tong, J.J. West (2010) Estimating the global burden of mortality due to outdoor air pollution using atmospheric modeling, AAAR Specialty Conference on Air Pollution and Health, Oral presentation, San Diego, CA, March 22-26.
102. **Anenberg**, S.C., J.J. West, A.M. Fiore, D.A. Jaffe, M.J. Prather, D. Bergmann, C. Cuvelier, F.J. Dentener, B.N. Duncan, M. Gauss, P. Hess, J.E. Jonson, A. Lupu, I.A. MacKenzie, E. Marmer, R.J. Park, M. Sanderson, M. Schultz, D.T. Shindell, S. Szopa, M. Garcia Vivanco, O. Wild, and G. Zeng (2010) Impacts of intercontinental ozone pollution on human mortality, HTAP 2010 Assessment Workshop, Poster presentation, Chapel Hill, NC, March 1-2.
103. **Anenberg**, S.C., J.J. West, A.M. Fiore, D.A. Jaffe, M.J. Prather, D. Bergmann, C. Cuvelier, F.J. Dentener, B.N. Duncan, M. Gauss, P. Hess, J.E. Jonson, A. Lupu, I.A. MacKenzie, E. Marmer, R.J. Park, M. Sanderson, M. Schultz, D.T. Shindell, S. Szopa, M. Garcia Vivanco, O. Wild, and G. Zeng (2009) Impacts of intercontinental ozone pollution on

human mortality, 8th Annual CMAS Conference, Poster presentation, Durham, NC, October 19-21.

104. **Casper, S., J.J. West, L.W. Horowitz, D.Q. Tong** (2008) The global burden of anthropogenic ozone and particulate matter air pollution on premature human mortality, Joint ISEE/ISEA Conference, Poster presentation, Pasadena, CA, October 12-16.
105. **Casper, S., J.J. West, L.W. Horowitz, D.Q. Tong** (2008) The global burden of anthropogenic ozone and particulate matter air pollution on premature human mortality, 7th Annual CMAS Conference, Oral presentation, Raleigh, NC, October 6-8.
106. **Casper, S., J.J. West, L.W. Horowitz, D.Q. Tong** (2008) The global burden of anthropogenic ozone and particulate matter air pollution on premature human mortality, LRTAP Task Force on Hemispheric Transport of Air Pollution, Atmospheric Chemistry, Climate, and Transboundary Air Pollution Workshop, Poster presentation, Washington, DC, June 9.
107. **Casper, S. J.J., West, L.W. Horowitz, D.Q. Tong** (2008) The global burden of anthropogenic ozone and particulate matter air pollution on premature human mortality, 40th Annual Air Pollution Workshop, Poster presentation, Raleigh, NC, April 8. (*First place award for best student poster*).

Other Invited Presentations

108. Southerland, V.A., S.C. **Anenberg**, M. Harris, J. Apte, P. Hystad, A. van Donkelaar, R.V. Martin, M. Beyers, A. Roy (2021) Assessing the distribution of air pollution health risks within cities: a neighborhood-scale analysis leveraging high resolution datasets in the Bay Area, California. NCAR, June 25.
109. **Anenberg, S.** (2021) NOAA GeoXO Atmospheric Composition Town Hall, April 29.
110. **Anenberg, S.** (2021) Climate change, air pollution, and public health: Past, present, and future. Georgia Tech, April 8.
111. **Anenberg, S., D. Goldberg, G. Kerr** (2021) Inconsistent NO₂ drops during COVID-19 lockdowns: lessons for protecting near-term public health and designing longer-term environmental policies. American Geophysical Union Fall Meeting, March 16.
112. **Anenberg, S.** (2021) Leveraging satellite-derived air quality datasets for environmental health applications NASA ACCP Air Quality and Health Workshop, March 16.
113. **Anenberg, S.** (2021) George Washington University Milken Institute School of Public Health Dean's Seminar Series, March 22.
114. **Anenberg, S.** (2021) Air pollution and health in cities: Recent advances and lessons from COVID-19 lockdowns. Air and Waste Management Association Mid-Atlantic Region, February 24.
115. **Anenberg, S.** (2021) Climate change, air pollution, and public health: Past, present, and future. Frontiers in Atmospheric Chemistry Seminar Series, January 26.
116. **Anenberg, S.** (2020) Climate change, air quality, and public health in cities. Urban Land Institute, December 18.
117. **Anenberg, S., and D. Goldberg** (2020) Air quality and health in U.S. cities: Lessons from COVID-19 restrictions. Ozone Transport Commission, November 18.
118. **Anenberg, S.** (2020) Air pollution and health in cities: Recent advances and lessons from COVID-19 lockdowns. Maryland Department of Environment, November 5.
119. **Anenberg, S.** (2020) Clean Air for All: 50 Years of the Clean Air Act, virtual, September 29.

120. Filippelli, G. and S. **Anenberg** (2020) GeoHealth: The impact of climate change on health and society, Wiley Science talks with the American Geophysical Union, virtual, September 22.
121. **Anenberg**, S. (2020) Methods and tools to assess air pollution health impacts in cities. Environmental Defense Fund Workshop “Air Pollution Health Risk Assessments for Decision Making: A Focus on Cities”, virtual, September 8.
122. **Anenberg**, S. (2019) Extreme weather, chemical facilities, and vulnerable communities in the U.S. Gulf Coast: A disastrous combination; Sensitivity of Airborne Dust to Drought in the US Southwest: What Are the Implications for Public Health under Climate Change? The Collaborative on Health and the Environment, virtual, Nov. 20.
123. Southerland, V, S. **Anenberg** A. Roy, M. Harris (2019) Hyper-local health impact assessment of NO₂, PM_{2.5}, and BC in the Bay Area, California. Environmental Defense Fund, Nov. 14.
124. **Anenberg**, S. (2019) Mitigating global ozone air pollution: challenges and opportunities. World Resources Institute Greening Governance Seminar Series, Washington DC, October 30.
125. Achakulwisut, P., M. Brauer, P. Hystad, S. **Anenberg** (2019) Global, national, and urban burdens of pediatric asthma incidence attributable to ambient NO₂ pollution, Health Effects Institute, Washington, DC, April 5.
126. **Anenberg**, S. (2019) Using satellite-derived pollution concentrations to estimate the health impacts of air pollution worldwide, NASA Goddard, College Park, MD, April 22.
127. **Anenberg**, S., J. Miller, D. Henze, R. Minjares (2019) A global snapshot of the air pollution-related health impacts of transportation sector emissions in 2010 and 2015, Health Effects Institute, Washington, DC, March 1.
128. **Anenberg**, S. (2018) Global health impacts of ambient air pollution: Integrating atmospheric science, public health, and environmental policy, Dalhousie University, Halifax, Canada, Sept. 26.
129. **Anenberg**, S. (2018) Using satellite remote sensing to estimate the global burden of ambient air pollution on asthma, NASA Goddard, Greenbelt, MD, Feb. 8.
130. **Anenberg**, S. (2017) The global burden of ambient air pollution on asthma, George Washington University, Milken Institute School of Public Health, Washington, DC, Oct. 16.
131. **Anenberg**, S. (2017) Global public health benefits of mitigating air pollution and climate change, George Washington University, Milken Institute School of Public Health, Washington, DC, Mar. 29.
132. Kleiman, G., S. **Anenberg** (2017) The multiple benefits of clean cooking in Mozambique, World Bank, Washington, DC, Mar. 9.
133. **Anenberg**, S. (2016) Estimating the global health benefits of air pollution mitigation, Health Effects Institute, Boston, MA, Feb. 17.
134. **Anenberg**, S.C. (2016) Impacts and mitigation of excess diesel NO_x emissions in 11 major vehicle markets, International Council on Clean Transportation, Washington, DC.
135. **Anenberg**, S.C. (2016) Estimating the global health benefits of air pollution mitigation, National Center for Atmospheric Research (NCAR) Advanced Study Program Summer Colloquium, Boulder, CO, Jul. 25.
136. **Anenberg**, S. (2014) What tools/models are available to assess the health risks of air pollution at various scales (local, national, regional, global)? United Nations Economic

- Commission for Europe Convention on Long Range Transboundary Air Pollution Task Force on Health, Bonn, Germany, May 14.
137. **Anenberg, S.** (2014) What tools/models are available to assess the health risks of air pollution at various scales (local, national, regional, global)? World Health Organization Expert Meeting on Health Risk Assessment, Bonn, Germany, May 12.
 138. **Anenberg, S.C.** (2012) Using atmospheric models to estimate air pollution mortality, University of Maryland, Earth System Science Interdisciplinary Center, Washington, DC, Oct. 15.
 139. **Anenberg, S.C.** (2012) Health co-benefits of mitigating near-term climate change through black carbon and methane emission controls, Woodrow Wilson International Center for Scholars, China Environment Forum, Washington, DC, Mar. 14.
 140. **Anenberg, S.C.** (2012) Health co-benefits of mitigating near-term climate change, Pacific Northwest National Laboratory, Joint Global Change Research Institute, Washington, DC, Mar. 8.
 141. **Anenberg, S.C.** (2012) Health co-benefits of mitigating near-term climate change, Science and Technology Policy Institute, Washington, DC, Mar. 2.
 142. **Anenberg, S.C.** (2012) Health co-benefits of mitigating short-lived climate forcers, University of Maryland, Dept. of Atmospheric and Oceanic Sciences, Washington, DC, Feb. 24.
 143. **Anenberg, S.C.** (2012) The role of science in the EPA Air Program, American Association for the Advancement of Science, Washington, DC, Sept. 18.
 144. **Anenberg, S.C.** (2012) Opportunities for interagency collaboration to move U.S. cookstove research forward, National Science and Technology Council, Air Quality Research Subcommittee, Washington, DC, Nov. 15.
 145. **Anenberg, S.C.** (2011) Health impacts of air pollution: thinking globally, U.S. Environmental Protection Agency Office of Air Quality Planning and Standards International Seminar, Research Triangle Park, NC, Apr. 5.
 146. **Anenberg, S.C.** (2011) Health impacts of black carbon mitigation, Project Surya Briefing Meeting, Washington, DC, Jun. 14.

SERVICE AND PROFESSIONAL ACTIVITIES

University service

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| 2020 - | Member, Advisory Council on Research, George Washington University |
| 2020 - | Member, PhD Admissions Committee, GWU Milken Institute School of Public Health, Environmental and Occupational Health Department |
| 2017 - | Member, Admissions Committee, GWU Milken Institute School of Public Health |
| 2018 - 2021 | Co-chair, Admissions Committee, GWU Milken Institute School of Public Health |
| 2019 - 2020 | Chair, Search Committee for GWU Environmental and Occupational Health non-tenure track faculty member |
| 2019 - 2020 | Member, Research Committee, GWU Milken Institute School of Public Health |
| 2018 | Member, Global Health Initiatives Working Group of SPH Strategic Planning Task Force, GWU Milken Institute School of Public Health |
| 2019 | Member, Search Committee for GWU SPH Director of Admissions |

Leadership in profession

2020 – 2022 Secretary, GeoHealth section of the American Geophysical Union

Professional societies

American Geophysical Union
American Meteorological Society
International Society for Environmental Epidemiology
Earth Science Women’s Network

Editorial peer review activities

2018 - Editor, *GeoHealth*
2019 - 2020 Guest Editor, *Proceedings of the National Academy of Sciences* (two papers)
2019 - Founding Associate Editor, *Frontiers in Sustainable Cities: Health and Cities*
2009 - Ad-hoc peer reviewer for academic journals: *Science*; *Nature*; *Nature Climate Change*; *Nature Geoscience*; *Lancet Planetary Health*; *Proceedings of the National Academy of Sciences*; *Aerosol and Air Quality Research*; *American Journal of Public Health*; *Atmosphere*; *Atmospheric Chemistry and Physics*; *Atmospheric Environment*; *Atmospheric Science Letters*; *Challenges in Sustainability*; *Climate Change Letters*; *Energy Policy*; *Energy, Sustainability, and Society*; *Environment International*; *Environmental Health Insights*; *Environmental Health Perspectives*; *Environmental Modelling and Software*; *Environmental Monitoring and Assessment*; *Environmental Pollution*; *Environmental Research*; *Environmental Research Letters*; *Environmental Science and Pollution Research*; *Environmental Science and Technology*; *Environmental Science and Technology Letters*; *Frontiers: Health and Cities*; *GeoHealth*; *Geophysical Research Letters*; *Global Environmental Change*; *International Journal of Environmental Research and Public Health*; *Israel Journal of Health Policy Research*; *Journal of Building Engineering*; *Journal of Exposure Science and Environmental Epidemiology*; *Journal of Pollution Effects and Control*; *Journal of Renewable and Sustainable Energy*; *Journal of Research Reports in Clinical Cardiology*; *Journal of Urban Climate*; *North Carolina Medical Journal*; *PLOS Medicine*; *PLOS ONE*; *Risk Analysis*; *Science of the Total Environment*; *Sustainability*; *Trials*
2011 - Ad-hoc peer reviewer for research grants: Government of the Hong Kong Special Administrative Region (2011), Carolinas Integrated Sciences and Assessments (2012), Canada Foundation for Innovation (2016), Research Council of Norway grant review panel (2016), National Science Foundation grant review panel (2017), Academia Sinica (2017), French National Research Agency (2018), NASA ROSES Disasters-18 (2018), NOAA Climate Program Office (2020), UK Research and Innovation Strategic Priorities Fund (2020), Vienna Science and Technology Fund (2020), NSF ad-hoc proposal review (2021).
2016 - Ad-hoc peer reviewer for books and reports: Intergovernmental Panel on Climate Change (2013), Heinz Endowments (2016), Climate and Clean Air Coalition (2018), United Nations Environment Programme (2018), Johns Hopkins University Press (2018), U.S. Environmental Protection Agency (2018).

National and international scientific advisory committees

- 2021 - Member, National Academies Committee to Advise the U.S. Global Change Research Program (USGCRP)
- 2021 - Member, World Health Organization Global Air Pollution and Health Technical Advisory Group
Expert Working Group on Exposure Assessment
Expert Working Group on Climate Change and Air Pollution
- 2021 Chair, National Academies Planning Committee for “Leveraging Advances in Remote Geospatial Technologies to Inform Precision Environmental Health Decisions – A Workshop”, April 14-15, 2021
- 2020 Member, National Academies Board on Atmospheric Sciences and Climate, Planning Committee for “Wildland Fires: Towards Improved Understanding and Forecasting of Air Quality Impacts Workshop”, September 23-25, 2020
- 2018 - Member, U.S. EPA Clean Air Act Advisory Committee’s Mobile Source Technical Review Subcommittee
- 2018 - 2021 Member, U.S. Representative, and Chapter Lead Author, Arctic Council’s Arctic Monitoring and Assessment Programme Expert Group on Short-Lived Climate Forcers

Leadership in organizing scientific workshops and conferences

- 2021 Session Co-chair, Geospatial Data for Exposure and Risk Modeling: Approaches and Applications, American Geophysical Union Fall Meeting 2021 (w/ Kyle Messier, John Balbus, Ben Zaitchik)
- 2020 Session chair, late breaking session on COVID-19 and Earth and Space Science, American Geophysical Union Fall Meeting 2020
- 2020 Organizer, International Society for Environmental Epidemiology Symposium: Beyond Temperature: Assessing the global burden of disease from climate change, ISEE Annual Meeting, Virtual, 2020 (w/ Kris Ebi and John Balbus).
- 2019 Organizer and Host, Science to Action Roundtable to Advance Joint Air Quality and Climate Change Mitigation in Cities Worldwide, Washington, DC
- 2016 - 2017 Organizer, Steering Committee, Climate and Clean Air Coalition summit on combined cooking and heating stoves, May 2017, Warsaw, Poland
- 2014 Organizer, Steering Committee, World Health Organization workshop: “*Methods and tools for assessing the health risks of air pollution at local, national and international level*”
- 2014 Moderator, President's Task Force Climate Change and Children's Health Expert Consultation, Washington, DC

Participation in expert panels and other professional service

- 2019 - Member, Lancet Countdown U.S. Working Group
- 2016 - Member, Climate and Clean Air Coalition Roster of Experts
- 2016 - Collaborator, Institute for Health Metrics and Evaluation, Global Burden of Disease Study
- 2018 Judge, Outstanding Student Presentation Awards, American Geophysical Union Fall Meeting

- 2017 Invited Participant, Climate and Clean Air Coalition Science Advisory Panel Expert Workshop on “Metrics for Evaluation and Reporting on Black Carbon and Methane Interventions” Ottawa, Canada
- 2014 - 2015 Member, Black Carbon Expert Panel, Gold Standard Foundation
- 2011 - 2014 RFP author/reviewer, EPA Science to Achieve Results (STAR) Research Grants
- 2012 Invited expert panelist, U.S. EPA National Center for Environmental Assessment Consultation for a Multipollutant Science Assessment on Climate
- 2011 Member, Global Alliance for Clean Cookstoves Monitoring and Evaluation Working Group, Climate Working Group, Health Working Group

Community service

- 2018 - Board Member, Clean Air Partners, Washington DC

TEACHING AND MENTORING

Teaching

Courses taught (all at GWU)

- 2018 - Course Director, PubH 6140, Global Climate Change and Air Pollution: Science, Impacts, and Solutions (2 credits)
Summer 2018 (5 students), Summer 2019 (12 students), Summer 2020 (7 students), Summer 2021 (14 students)
- 2017 Course Instructor, PubH 6128, Global Environmental and Occupational Health (2 credits)
Session leader Spring I 2017 (14 students)
- 2016 - 2017 Course Instructor PubH 6004, Environmental and Occupational Health in a Sustainable World (2 credits)
Session leader Spring II (14 students), Summer (14 students), Fall 2016 (14 students); Spring I (14 students), Spring II (14 students), Summer 2017 (14 students)

Guest lectures and panels in undergraduate and graduate courses (at GWU unless noted)

- 2021 Introduction to Environmental and Occupational Health, Univ. of Washington
Guest lecture of air pollution and climate change
- 2020 - 2021 GWSPH PUBH3131: Epidemiology: Measuring Health and Disease
Guest lecture on environmental health and climate change
- 2019 School of Medicine & Health Sciences PPS-1: Fundamentals of Patients, Populations, and Systems
Guest panel on climate change and health
- 2019 Elliott School of International Affairs IAFF 6138, Climate Change and Sustainable Development
Guest lecture on climate change and health
- 2019 PubH 6121, Environmental and Occupational Epidemiology
Guest lecture on air pollution exposure science

Guest lecture recordings for online MPH courses (all at GWU)

- 2019 PubH 6011, Environmental and Biological Foundations of Public Health

2019 Recorded three video lectures
PubH 6136, Environmental and Occupational Epidemiology
Recorded video lecture
2017 PubH 6128, Global Environmental and Occupational Health
Recorded two video lectures

Advising and Mentoring

Research Scientist

Dan Goldberg (2019-2021)

Post-doctoral

Pattanun (Ploy) Achakulwisut (2017-2019), Arash Mohegh (2018-2021), Gaige Kerr (2020-current), Kate O'dell (2021-current), Doyeon Ahn (2021-current)

Doctoral

Chair: Daniel Malashock (2018-current), Veronica (Tinney) Southerland (2018-current), Greta Martin (2020-current)

Reader: Natalie Haley (2021)

Research Associate

Maria Castillo (2019-2021)

Masters

Graduate Research Assistants supervised (all EOH at GWU, unless otherwise noted):

Alex Lindahl (2017-2018), Casey Kalman (2018-2019), Shannon Haines (2019-2020), Julia Weil (2020), Lauren Johnson (2020-current), Nick Pendleton (2020-current), Nigel Martis (GWU Data Sciences, 2021-current), Perrin Krisko (2021-current), Catherine O'donnell (2021-current)

MPH Culminating Experience students advised (all EOH at GWU, unless otherwise noted):

2020 4 students: Emma Cook, Shanell Folger, Gopika Patwa, Joseph Hwang (Global Health)
2018 3 students: Vic Whitten (Global Health), Jaclyn Eidom, Isabella Kaser
2017 2 students: Abdoulaye Bangoura, Joseph Kuziomko

Academic Advisor for MPH students (all EOH at GWU, designated by year the students entered MPH program at GWU):

2021 13 students
2020 11 students
2019 21 students
2018 15 students
2017 7 students

MPH Practicum students supervised (all EOH at GWU):

2021 1 student: Nick Pendleton (at GWU)
2020 1 student: Elizabeth Wang (at GWU)

2017 2 students: Alex Lindahl, Omobolanle Oshinusi (at Environmental Health Analytics, LLC)
2016 2 students: El'gin Avila, Ans Irfan (at Environmental Health Analytics, LLC)
2015 2 students: Nathan McCray, Anjelica Oien (at U.S. Chemical Safety Board)

Undergraduate

Margaret Nelson (BS Public Health and BS Economics; 2020-2021)