TRACEY HOLLOWAY
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Nelson Institute Center for Sustainability and the Global Environment (SAGE)
University of Wisconsin—Madison, Madison, WI 53726

PROFESSIONAL EXPERIENCE

University of Wisconsin – Madison

- 2016-Present: Professor, Nelson Institute for Environmental Studies and Atmospheric & Oceanic Sciences
  - Hired in 2003 as part of Energy Systems and Policy Faculty Cluster Hiring Initiative
  - Department of Civil and Environmental Engineering (Affiliate since 2003)
  - Department of Mechanical Engineering (Affiliate since 2015)
  - Program in Geological Engineering (Program Faculty since 2016)
- 2014-2016: Professor, Nelson Institute for Environmental Studies
  - Department of Atmospheric and Oceanic Sciences (Affiliate since 2003; Joint, 2009-2016)
- 2015-Present: Corporate and Alumni Relations, Energy Analysis and Policy (EAP) Program
- 2009-2014: Associate Professor, Nelson Institute for Environmental Studies
- 2012-2014: Executive Board Member, Wisconsin Energy Institute
- 2006-2012: Associate Director, National Center for Freight Infrastructure, Research, and Education (CFIRE)
- 2008-2012: Affiliate Appointment in the La Follette School of Public Policy
- 2008-2011: Director, Nelson Institute Center for Sustainability and the Global Environment (SAGE)
- 2008-2011: Associate Director, Wisconsin Bioenergy Initiative
- 2003-2009: Assistant Professor, Nelson Institute for Environmental Studies

Other positions

- 2016-Present: Leader, NASA Health and Air Quality Applied Sciences Team
- 2014-Present: President and Board Member, Earth Science Women's Network Non-Profit (ESWN, Inc.)
- 2015-Present: Member of the AGU Roger Revelle Medal Committee
- 2013-Present: Member, President's Advisory Committee on University Relations (PACUR) for University Corporation for Atmospheric Research (UCAR)
- 2013-Present: Member, Wisconsin Department of Natural Resources Air Management Study Group
- 2012-Present: Deputy Leader, NASA Air Quality Applied Sciences Team (Member since 2011)
- 2006-Present: Executive Board Member, *Environmental Research Letters* (2006-2010, Editorial Board)
- 2002-Present: Founding Board Member, Earth Science Women's Network (ESWN) and Earth Science Jobs Network
- 2012: Short-term Consultant to CNA Analysis Solutions
- 2001-2003: Post-Doctoral Fellow, Earth Institute, Columbia University

EDUCATION

- **Princeton University**, Princeton, NJ (1995-2001)
  Ph.D., Atmospheric and Oceanic Sciences Program
  Graduate Certificate in Science, Technology, and Environmental Policy,
  Woodrow Wilson School of Public and International Affairs
- **Brown University**, Providence, RI (1991-1995)
  Sc.B. with Honors in Applied Mathematics

HONORS and AWARDS

- University of Wisconsin—Madison Vilas Mid-Career Investigator Award (2017)
- Invited Fellow, AAAS Leshner Leadership Institute (2016-2017)
- Invited TEDx Speaker, "Creating On-Ramps to Science," TEDxUWMadison 2015 (http://tinyurl.com/TEDxOnRamps)
- Recognized as one of "100 Inspiring Women in STEM" by *Insight into Diversity* (2015; http://tinyurl.com/TH-100STEM)
- Chair, 2015 Energy Summit, hosted by the Wisconsin Energy Institute (October 2015)
- *Nature* magazine profile, "Turning point: Tracey Holloway" (10 April 2014 issue, http://tinyurl.com/TH-Nature2014)
- *Amicus Curiae* to the U.S. Supreme Court, No. 12-1182, -1183 (September 2013)
- MIT C3E (Clean Energy Education & Empowerment Awards) award in Education and Mentoring (2012)
- Council on Undergraduate Research in the Geosciences (GeoCUR) Undergraduate Research Mentor Award (2012)
- Deputy Leader & Member, NASA Air Quality Applied Sciences Team (2011-2016)
- Leopold Leadership Fellow (2011)
- Finalist, Olympus Innovation Awards Program from the National Collegiate Inventors and Innovators Alliance; recognizing leadership of the Climate Leadership Challenge innovation competition (2010)
- Invited panelist for UW-Madison Chancellor's "Meeting of the Minds" in New York City (2010)
- 2007 Editor's Choice Award Winner – Policy Analysis Paper of the Year (2nd Runner-up), *Environmental Science & Technology*. Same manuscript also one of ES&T's "Most-Accessed" papers for 4th quarter 2007 and 1st quarter 2008.
- NASA Earth System Science Graduate Fellowship Recipient (1998-2001)
- Princeton Environmental Institute--Science, Technology, and Environmental Policy (PEI-STEP) Fellowship Recipient (1998)
- Department of Defense Graduate Fellowship Recipient (1995-1998)
- Brown University Department of Applied Mathematics Rohn Truell Award (1995)
- Brown University Sigma Xi Membership (1995)
- Brown University Magna Cum Laude (1995)
- National Merit Scholarship Winner (1991)

RESEARCH ACTIVITIES

* designates student advisees/mentees; # designates interns, post-docs, and supervised research staff
As of January 2016, h-index of 22 (as calculated based on citation statistics in Web of Knowledge; please note that Web of Knowledge does not link all publications to the same author, so index calculated off-line)

Peer-Reviewed Publications (in chronological order)

1. Holloway, T., H. Levy II, and P. Kasibhatla (2000), Global Distribution of Carbon Monoxide, *J. Geophys. Rsch*., 105, 12,123-12,147.
2. Yienger, J. J., M. Galanter, T. A. Holloway, M. J. Phadnis, S. K. Guttikunda, G. R. Carmichael, W. J. Moxim, and H. Levy II (2000), The episodic nature of air pollution transport from Asia to North America, *J. Geophys. Rsch*., 105, 26,931-26,945.
3. Holloway, T., H. Levy II, and G. R. Carmichael (2002), Transfer of Reactive Nitrogen in Asia: Development and Evaluation of a Source-Receptor Model, *Atmospheric Environment*, 36, 4251-4264.
4. Holloway, T., A. Fiore, and M. Galanter Hastings (2003), Intercontinental Transport of Air Pollution: Will emerging science lead to a new hemispheric treaty?, *Environ. Sci. Technol.*, 37, p. 4535-4542.

5. Fiore, A., T. Holloway, and M. G. Hastings (2003), A global perspective on air quality: Intercontinental transport and linkages with climate, *Environmental Manager (EM) Magazine*, December, 2003, p. 13-22.
6. Ezzati, M., R. Bailis, D. M. Kammen, T. Holloway, L. Price, L. A. Cifuentes, B. Barnes, A. Chaurey, and K. N. Dhanapala (2004), Energy Systems and Population Health, *Annu. Rev. Environ. Resour.* 29, p. 383–419; doi: 10.1146/annurev.energy.29.062103.121246.
7. Denholm, P.*, G. L. Kulcinski, and T. Holloway (2005), Emissions and energy efficiency assessment of baseload wind energy systems, *Environ. Sci. Technol.,* 39, 1903-1911.
8. Denholm, P.* and T. Holloway (2005), Improved accounting of emissions from utility energy storage system operation, *Environ. Sci. Technol.*, 39, 9016-9022.
9. Patz, Jonathan A, Diarmid Campbell-Lendrum, Tracey Holloway, and Jonathan A Foley (2005), Impact of regional climate change on human health, *Nature*, 438, 310-317.
10. Foley, Jonathan A., Ruth DeFries, Gregory P. Asner, Carol Barford, Gordon Bonan, Stephen R. Carpenter, F. Stuart Chapin, Michael T. Coe, Gretchen C. Daily, Holly K. Gibbs, Joseph H. Helkowski, Tracey Holloway, Erica A. Howard, Christopher J. Kucharik, Chad Monfreda, Jonathan A. Patz, I. Colin Prentice, Navin Ramankutty, and Peter K. Snyder (2005), Global Consequences of Land Use, *Science*, 309, 570-574.
11. Holloway, T., P. Kinney, and A. Sauthoff* (2005), Application of air quality models to public health analysis, *Energy for Sustainable Development, 9, 49-57.*
12. Spak, S. N.*, T. Holloway, B. Lynn, and R. Goldberg (2007), A Comparison of Statistical and Dynamical Downscaling for Surface Temperature in North America, *J. Geophys. Res., 112*, D08101, doi:10.1029/2005JD006712.
13. Yamashita, K., F. Ito, K. Kameda, T. Holloway, and M. P. Johnston* (2007), Cost-effectiveness Analysis of Reducing the Emission of Nitrogen Oxides in Asia, *J. Water Air Soil Pollut:* Focus 7, 357-369, DOI 10.1007/s11267-006-9097-3.
14. Ulirsch, G. V., L. M. Ball, W. Kaye, C. M. Shy, C. V. Lee, D. Crawford-Brown, M. Symons, and T. Holloway (2007), Effect of Particulate Matter Air Pollution on Hospital Admissions and Medical Visits for Lung and Heart Disease in Two Southeast Idaho Cities, *J. Exposure Sci. and Env. Epidem*., p. 1-10.
U.S. Department of Health & Human Services 2008 Nominee for the Charles C Shephard Science Award in Assessment & Epidemiology
15. Stone Jr., Brian, Mednick, Adam C., Holloway, Tracey, and Spak, Scott N.* (2007), Is Compact Growth Good for Air Quality, *J. American Planning Assoc* 73:4, 404-418.
16. Johnston, M.* and T. Holloway (2007), A Global Comparison of National Biodiesel Production Potentials, *Environ. Sci. Technol.,* 41 (23), 7967–7973 10.1021/es062459k.
ES&T Editor's Choice Award Winner: 2007 Policy Analysis Paper of the Year (2nd runner-up)
17. Carmichael, G. R., T. Sakurai, D. Streets, Y. Hozumi, H. Ueda, S. U. Park, C. Fung, Z. Han, M. Kajino, M. Engardt, C. Bennet, H. Hayami, K. Sartelet, T. Holloway, Z. Wang, A. Kannari, J. Fu, K. Matsuda, N. Thongboonchoo, and M. Amann (2008), MICS-Asia II: The Model Intercomparison Study for Asia Phase II Methodology and Overview of Findings, *Atmos. Env., 42, 3468-3490.*
18. Han, Z., T. Sakurai, H. Ueda, K. Matsuda, Y. Hozumi, G. R. Carmichael, D. Streets, S. U. Park, C. Fung, A. Chang, M. Kajino, N. Thongboonchoo, M. Engardt, C. Bennet, H. Hayami, K. Sartelet, T. Holloway, Z. Wang, and M. Amann (2008), MICS-Asia II; Model Intercomparison and Evaluation of Ozone and Relevant Species, *Atmos. Env., 42, 3491-3509*.
19. Hayami, H., T. Sakurai, K. Matsuda, Z. Han, H. Ueda, G. R. Carmichael, D. Streets, T. Holloway, Z. Wang, N. Thongboonchoo, M. Engardt, C. Bennet, C. Fung, A. Chang, S. U. Park, M. Kajino, and M. Amann (2008), MICS-Asia II: Model Intercomparison and Evaluation of Particulate Sulfate, Nitrate and Ammonium, *Atmos. Env., 42, 3510-3527.*
20. Wang, Zifa, Fuying Xie, T. Sakurai, H. Ueda, Zhiwei Han, G. R. Carmichael, D. Streets, M. Engardt, T. Holloway, H. Hayami, M. Kajino, N. Thongboonchoo, C. Bennet, S. U. Park, C. Fung, A. Chang, K. Sartelet, and M. Amann (2008), MICS-Asia II: Model inter-comparison and evaluation of acid deposition, *Atmos. Env., 42, 3528-3542.*
21. Holloway, T., T. Sakurai, Z. Han, S. Ehlers*, S. N. Spak*, L. W. Horowitz, H. Ueda, Y. Hozumi, G. R. Carmichael,

D. Streets, S. U. Park, C. Fung, A. Chang, M. Kajino, N. Thongboonchoo, M. Engardt, C. Bennet, H. Hayami, K. Sartelet, Z. Wang, K. Matsuda, and M. Amann (2008), MICS-Asia II: Impact of global emissions on regional air quality in Asia, *Atmos. Env., 42, 3543-3561.*

22. Lin, M., T. Oki, T. Holloway, D. G. Streets, M. Bengtsson, and S. Kanae (2008), Long-range transport of acidifying substances in East Asia-Part I: Model evaluation and sensitivity studies, *Atmos. Env. 42 (24), 5939-5955.*
23. Lin, M., T. Oki, M. Bengtsson, S. Kanae, T. Holloway, and D. G. Streets (2008), Long-range transport of acidifying substances in East Asia-Part II: Source-Receptor Relationships, *Atmos. Env. 42 (24), 5956-5967.*
24. Gibbs, H. K., M. Johnston*, J. A. Foley, T. Holloway, C. Monfreda, N. Ramankutty, and D. Zaks (2008), Carbon payback times for crop-based biofuel expansion in the tropics: the effects of changing yield and technology, *Environ. Res. Lett. 3 (2008) 034001 (10pp)*
25. Snyder, D., T. R. Dallmann, J. J. Schauer, T. Holloway, M. J. Kleeman, M. D. Geller, and C. Souitas (2008), Direct Observation of the Break-up of a Noctural Layer using Elemental Mercury as a Ubiquitous Tracer, *GRL,* 35, L17812, doi:10.1029/2008GL034840.
26. Holloway, T., S. N. Spak*, D. Barker*, M. Bretl*, K. Hayhoe, J. Van Dorn, and D. Wuebbles (2008), Change in ozone air pollution over Chicago associated with global climate change, *JGR-Atmospheres* 113, D22306, doi:10.1029/2007JD009775.
27. Fiore, A. M., F. J. Dentener, O. Wild, C. Cuvelier, M. G. Schultz, C. Textor, M. Schulz, C. Atherton, D. Bergmann, I. Bey, G. Carmichael, R. Doherty, B. N. Duncan, G. Faluvegi, G. Folberth, M. Gauss, S. Gong, D. Hauglustaine, P. Hess, T. Holloway, L. W. Horowitz, I. S. A. Isaksen, D. J. Jacob, J. E. Jonson, J. W. Kaminski, T. J. Keating, A. Lupu, I. A. MacKenzie, E. Marmer, V. Montanaro, R. Park, G. Pitari, K. J. Pringle, J. A. Pyle, M. G. Sanderson, S. Schroeder, D. T. Shindell, D.S. Stevenson, S. Szopa, . Van Dingenen, M. G.Vivanco, P. Wind, G. Wojcik, S. Wu, G. Zeng, and A. Zuber (2009), Multi-model Estimates of Intercontinental Source-Receptor Relationships for Ozone Pollution, *J. Geophys. Research,*114, D04301 doi: 10.1029/2008JD010816.
28. Johnston*, Matt, Jonathan A. Foley, Tracey Holloway, Chris Kucharik, and Chad Monfreda (2009), Resetting Global Expectations from Agricultural Biofuels, *Environ. Res. Lett.* 4, 014004 (9pp)
29. Stone, Brian, Adam Mednick, Tracey Holloway, S.N. Spak* (2009) Mobile Source CO_2 Mitigation through Smart Growth Development and Vehicle Fleet Hybridization, *ES&T* 43 (6), 1704–1710, doi:10.1021/es8021655.
30. Spak, S. N.* and T. Holloway (2009), Seasonality of Aerosol Speciation in the Great Lakes Region, *J. Geophys. Research* 114, D08302, doi:10.1029/2008JD010598.
31. Lin, M.#, T. Holloway, T. Oki, D. G. Streets, and A. Richter (2009), Mechanisms Controlling Surface Ozone Over East Asia: A Multiscale Study Coupling Regional and Global Chemical Transport Models, *Atmospheric Chemistry and Physics* 9, 3277-3301.
32. Lin, M.#, T. Holloway, G. R. Carmichael, and A. M. Fiore (2010), Quantifying pollution inflow and outflow over East Asia through coupling regional and global models, *Atmospheric Chemistry and Physics*, 10, 4221–4239.
33. Lin, J.-T., D.J. Wuebbles, H-C Huang, Z. Tao, M. Caughey, X-Z Liang, J-H Zhu,, and T. Holloway (2010) Potential effects of climate and emissions changes on surface ozone in the Chicago area. *Journal of Great Lakes Research* 36, 59–64.
34. Nemet, G. F., T. Holloway, and P Meier (2010), Implications of incorporating air-quality co-benefits into climate change policymaking, *Environ. Res. Lett.* 014007, doi:10.1088/1748-9326/5/1/014007.
35. Rasmussen, D.J.*, T. Holloway, and G.F. Nemet (2011), Opportunities and challenges in assessing climate change impacts on wind energy – A critical comparison of wind speed projections in California. *Environ. Res. Lett.* 6 024008 doi: 10.1088/1748-9326/6/2/024008.
36. Grabow, M. L., S. N. Spak*, T. Holloway, B. Stone Jr., A. C. Mednick, J. A. Patz (2011), Air Quality and Exercise-Related Health Benefits from Reduced Car Travel in the Midwestern United States, *Environ. Health Perspect*. doi:10.1289/ehp.1103440.
37. Johnston, M.*, R. Licker, J. Foley, T. Holloway, N.D. Mueller, C. Barford and C. Kucharik (2011). Closing the gap: global potential for increasing biofuel production through agricultural intensification, *Environ. Res. Lett* 6 doi: 10.1088/1748-9326/6/3/034028.

38. Johnston, M.[*], E. Bickford[*], T. Holloway, C. Dresser[*], T. Adams (2012). Impacts of Biodiesel Blending on Freight Emissions in the Midwestern United States, *Transportation Research Part D: Transport and Environment,* 17D(1), 457-465.
39. Holloway, T., C. Voigt[*], J. Morton[*], S.N. Spak[*], A.P. Rutter, and J.J. Schauer (2012). An Assessment of Atmospheric Mercury in the Community Multiscale Air Quality (CMAQ) Model at an Urban Site and a Rural Site in the Great Lakes Region of North America. *Atmos. Chem. Phys., 12, 7117-7133, 2012, doi:10.5194/acp-12-7117-2012.*
40. Harkey, M. K.[#] and T. Holloway (2013). Constrained dynamical downscaling for assessment of future climate impacts. *J. Geophys. Res.-Atmospheres 118*, 1–13, doi:10.1002/jgrd.50223.
41. Bickford, E.[*], T. Holloway, A. Karambelas[*], M. Johnston[*], T. Adams, M. Janssen, and C. Moberg[*] (2014). Emissions and air quality impacts of truck-to-rail freight modal shifts in the Midwestern U.S. Environmental Science & Technology 48 (1), 446-454.
42. Plachinski, S.[*], T. Holloway, P. J. Meier, G. F. Nemet, Arber Rrushaj[*], Jacob Oberman[*], Phillip Duran[*], Caitlin Voigt[*] (2014) Quantifying the Air Quality Co-benefits of Lower-Carbon Electricity Production. *Atmospheric Environment*, 94, pp. 180–191.
43. Witman, S.[#], T. Holloway, and P. Reddy (2014). Integrating Satellite Data into Air Quality Management: Experience from Colorado. *Environmental Manager (EM) Magazine, February 2014 Issue.*
44. Jacob, D., T. Holloway and J. D. Haynes (2014). The NASA Air Quality Applied Sciences Team. *Environmental Manager (EM) Magazine, February 2014 Issue.*
45. Patz, J.A., H. Frumkin, T. Holloway, D.J. Vimont, and A. Haines (2014). Climate Change Challenges and Opportunities for Global Health. *JAMA*. Published online September 22, 2014. doi:10.1001/jama.2014.13186
46. Jin, X.[*], and T. Holloway (2015), Spatial and temporal variability of ozone sensitivity over China observed from the Ozone Monitoring Instrument. *J. Geophys. Res. Atmos*., 120, 7229–7246. doi: 10.1002/2015JD023250.
47. Harkey, M.[#], T. Holloway, J. Oberman[*], and E. Scotty[*] (2015), An evaluation of CMAQ NO_2 using observed chemistry-meteorology correlations, *J. Geophys. Res. Atmos.*, 120, 11,775–11,797, doi:10.1002/2015JD023316.
48. Kaldunski[*], B., B. Pierce, and T. Holloway (2016) When Stratospheric Ozone Hits Ground-level Regulation - Exceptional Events in Wyoming. *Bull. Amer. Meteor. Soc*. doi:10.1175/BAMS-D-14-00133.1.
49. Meier, Paul, Tracey Holloway, Jonathan Patz, Monica Harkey[#], Doug Ahl, David Abel[*], Scott Schuetter, Scott Hackel (2017, in review) Impact of warmer weather on emissions from an evolving electricity sector, in review at *Environmental Research Letters*.
50. Abel, David[*], Tracey Holloway, Ryan Kladar[*], Paul Meier, Doug Ahl, Monica Harkey[#], Scott Schuetter, Jonathan Patz (2107, in review) Response of Power Plant Emissions to Ambient Temperature in the Eastern United States, in press at *ES&T*.
51. Sanderfoot, Olivia V.[*], Tracey Holloway (2017, in review) Air pollution impacts on avian life, in review at *Environmental Research Letters*.

Book Chapters and Reports

1. UNECE Task Force on Hemispheric Air Pollution Transport (2007). T. Holloway served as a contributing author to Chapter 5: "Global and Regional Modelling," in *Hemispheric Transport of Air Pollution 2007*, United Nations, New York and Geneva.
2. Rao, S. T., C. Hogrefe, T. Holloway, and G. Kallos (2007), Long-Range Transport of Atmospheric Pollutants and Transboundary Pollution *Encyclopedia of Atmospheric Pollution*.
3. Holloway T., and C. Littlefield[*] (2011). Intercontinental air pollution transport: Links to environmental health. In: Nriagu JO (ed.) Encyclopedia of Environmental Health, volume 3, pp. 266–272 Burlington: Elsevier.
4. Chicago Climate Change Assessment Report (2008). T. Holloway served as a contributing author.
5. UNECE Task Force on Hemispheric Air Pollution Transport, Part A: Ozone and Particulate Matter (2010). T. Holloway served as a contributing author to Chapter 4: "Global and Regional Modelling" and Chapter 5: "Impacts on Health, Ecosystems, and Climate." UNECE Air Pollution Studies No. 17. http://www.htap.org/
6. Sauthoff, A., P. Meier, T. Holloway (2010), *Assessment of Biodiesel Scenarios for Midwest Freight Transport Emission Reduction*. CFIRE Project Final Report, 02-10.

7. Bickford, E. and T. Holloway (2012), *Sustainable Freight Infrastructure to Meet Climate and Air Quality Goals*. CFIRE Project Final Report, 02-09.
8. Holloway, T., P. Meier, G. Nemet (2012) *Quantifying the Air Quality Co-benefits of Lower-Carbon Electricity Production*, Focus on Energy Final Report May 2012.
9. T. Holloway and V. Limaye (2015), Climate Impacts Downscaling. In: *Climate Change and Public, Health* Barry Levy and Jonathan Patz, Oxford University Press.

Other non-refereed publications

1. Holloway, T., A. Fiore, and M. Galanter Hastings (2004), Developing a Dialogue on Hemispheric Pollution, *Environ. Sci. Technol.*, 38, p. 1914-1915.
2. Bell, M., and T. Holloway (2007), Global impacts of particulate matter air pollution, *Environ. Res. Lett.* 2 045026.
3. Holloway, T. (2012) *The Earth Science Women's Network (ESWN) A Case Study in Organizational Growth*, invited white paper for Edgewood College (Madison, WI) class on Organizational Communication, Prof. L. Larmer.
4. T. Holloway (2015) Viewpoints: What's Next for Air Quality in the United States? Invited article for the UGEC Blog https://ugec.org/tag/tracey-holloway/

Funded External Awards (in chronological order)

1. Stone, B. and T. Holloway (2005-2007) "Modeling the Effects of Land Use and Technology Change on Future Air Quality in the Upper Midwestern United States," EPA $678,685.
2. Patz, Jonathan, Steve Vavrus, Jonathan Chipman, Marty Kanarek, Tracey Holloway, Grace Wahba, Henry Anderson, Lawrence Hanrahan, Linda Mearns, and Claudia Tebaldi (2006-2009) "Health Risks from Climate Variability and Change in the Upper Midwest: a Place-based Assessment of Climate-related Morbidity," EPA $598,599.
3. Holloway, T., L. Emmons, and P. Hess (2007-2010) "Connections between Regional Processes and Intercontinental Air Pollution Transport," NASA Atmospheric Composition $600,000
4. Schauer, J. J., M. M. Shafer, T. Holloway, and R. Griffin (2007-2010) "Sensitivity of Heterogeneous Atmospheric Mercury Processes to Climate Change," EPA $900,000.
5. Holloway, T. (2007-2008, via agreement with the University of Illinois, Professor Don Wuebbles) "Statistical Downscaling Projections of Ozone Air Pollution in Chicago Associated with Climate Change," Global Philanthropy Partnership $6555.
6. T. Holloway, Greg Nemet, and Paul Meier (2008-2009) "Coordinated Energy Strategies for Climate and Air Quality," Wisconsin Focus on Energy $91,803.
7. Holloway, Tracey and Paul Meier (2008-2010) "Sustainable Freight Infrastructure to Meet Climate and Air Quality Goals," Wisconsin Department of Transportation (WisDOT) and the National Center for Freight Infrastructure, Research, and Education (CFIRE), based at UW-Madison, allowing competition from a consortium of five universities $148,880.
8. Meier, Paul and Tracey Holloway (2008-2009) "Assessment of Near-Term Strategies for Freight Transport Emission Reduction," National Center for Freight Infrastructure, Research, and Education (CFIRE), based at UW-Madison, allowing competition from a consortium of five universities $74,907.
9. Hastings, M., T. Holloway, S. Laursen, E. Marin-Spiotta, A. Steiner, and C. Wiedinmyer (9/2009-8/2012) "Partnerships for Adaptation, Implementation, and Dissemination (PAID): Collaborative Research - Career Advancement for Women through the Earth Science Women's Network (ESWN)," NSF $1,000,000.
10. Holloway, Tracey and Paul Meier (9/2010-8/2012) "Freight from Space; Using Satellite Data to Quantify Rail and Truck Emissions" National Center for Freight Infrastructure, Research, and Education (CFIRE), based at UW-Madison, allowing competition from a consortium of five universities $150,000.
11. Meier, Paul and Tracey Holloway (9/2010-8/2011) "Does Natural Gas Make Sense for Freight?" National Center for Freight Infrastructure, Research, and Education (CFIRE), based at UW-Madison, allowing competition from a consortium of five universities $75,000.

12. Holloway, Tracey (1/1/11 – 1/31/12) "Analysis of the Air Quality Impacts of Distributed Solar Photovoltaics" DoE NREL/National Renewable Energy Laboratory $43,807.
13. Holloway, Tracey, Steve Ackerman, and Bart Sponseller (7/11 – 6/16) "Membership Application for the NASA Air Quality Applied Sciences Team: Climate, Energy, and Air Quality" NASA $750,000
14. Holloway, Tracey (9/11-8/12) "Using OMI NO2 Data to Bridge the Gap Between Monitors and Models," NASA funding through the AQAST Tiger Team initiative $70,000.
15. Patz, Jonathan, Tracey Holloway, and Paul Meier (10/11-5/14) "Climate Change Impacts on Power Plant Emissions, Air Quality and Health in the US" NIH $392,000.
16. Holloway, Tracey; collaborative with Mark Abkowitz, Vanderbilt University (separate budgets); (6/12-8/13) "Estimating the Effects of Climate Change on Transportation Infrastructure," CFIRE, UW budget is $60,000.
17. Holloway, Tracey "Improving Public Understanding of Sustainability and Freight Transport," CFIRE, $60,000.
18. Holloway, Tracey (12/12-6/16) Deputy Director, NASA AQAST $25,000/year, total $85,000.
19. Holloway, Tracey (3/13-5/13) Energy Center of Wisconsin "Climate Change Impacts on the NASA Stennis Space Center," $1,500.
20. Meier, Paul, Tracey Holloway, Jonathan Patz, Bill Eisele (9/2014-8/2015) "Understanding Time-of-Day Variation in Truck Transport and General Traffic Emissions: Guidance for Strategic Urban Air Quality Investments." National Center for Freight Infrastructure, Research, and Education (CFIRE) $184,000.
21. Holloway, Tracey (6/14-6/16) "Assessing Pollution Episodes in the Eastern U.S.," NASA funding through the AQAST Tiger Team initiative ~$120,000.
22. NASA Health and Air Quality Applied Science Team, Member and Team Lead (3 years, $750,000, Holloway P.I.)
23. Wisconsin BioFuels Association ($30,000, Holloway P.I.);

Internal UW Awards

1. Holloway, T. (9/1/05-8/31/06) "Understanding Transboundary Air Pollution in the Upper Midwestern United States and Southern Canada" UW Graduate School Grant, covering 1 year R.A. and $2000 travel.
2. Vavrus, S., T. Holloway, and J. Williams (2005) "Artic Climate Change: Investigating the Role of Land Cover and Atmospheric Processes on Recent and Future Trends." UW World Universities Network Development Fund $19,000.
3. Holloway, T. (9/1/06-8/31/07) "Connections between Regional Processes and Intercontinental Transport of Air Pollution" UW Graduate School Grant, covering 1 year R.A. (insurance against NASA proposal).
4. P. Wilson, T. Holloway, B. Lesieutre, and G. Nemet (7/1/08-6/31/11) "Governing New Conflicts in Global Energy Futures" UW-Madison Center for World Affairs and the Global Environment (WAGE) $100,000
5. T. Holloway (6/1/08 – 5/31/09) "Sensitivity of Regional Air Pollution to Climate Change" UW Graduate School Grant, covering 1 year R.A.
6. Tracey Holloway, and Paul Meier (9/1/12 – 8/31/13) "Buildings, Energy, and Campus Actions: Systems Thinking for Sustainability Science." UW Office of Sustainability, Sustainability Innovation in Research and Education (SIRE), $40,000.

Private Fundraising Activities

Fundraising at UW-Madison

- Established new alumni and corporate engagement program for the Energy Analysis and Policy (EAP) Certificate Program, a cross-campus graduate training program
- Worked with donors to launch new EAP endowment account ($125K since Fall 2015 launch)
- Worked with donors to launch new EAP program fund (~$15K donated since Spring 2015 launch)
- Worked with donor to fund EAP graduate student research ($50K, Fall 2015)
- Oversaw sponsorship and registration for 2015 Energy Summit, Holloway chair (total budget ~$80K)

Fundraising for the Earth Science Women's Network (ESWN)

- Led crowd-funding campaign through Tilt.com, prior to forming 501c3 ($14K, Spring 2014), reported in *Nature* "Turning Points" profile (April 2014)
- Partnership with the *For Women and Well-being in Wisconsin and the World* (4W) campaign through UW-Madison, which has provided an undergraduate student for ESWN (~$15K, 2014-present)
- P.I., Community Development Grant through the Madison Community Foundation - challenge grant to establish a new endowment for ESWN ($50K, October 2015; $150K endowment expected by October 2017)
- With ESWN fundraising committee, corporate sponsorship for events ($5K, events at 2015 AGU; $13K, events at 2016 AGU)

Invited Research Presentations (in chronological order)

1. National Center for Atmospheric Research, Boulder, CO; 10/04
   Two Invited Talks
   Atmospheric Chemistry Division: *Connecting Regional and Global Air Pollution Chemistry and Transport*
   Institute for the Study of Society and the Environment: *Does Interdisciplinary Research Require More Self-Discipline?*
2. Kyoto University, Kyoto, Japan; 11/04
   Invited Talk Working Group Meeting of the Model Inter-comparison Study for Asia: *Relationship of MICS-Asia Phase II with Global Pollution Transport*
3. Univ. of Oklahoma; NOAA National Severe Storms Laboratory, Norman, OK; 7/05
   Two Invited Talks
   NOAA NSSL: *Impact of Global Emissions on Regional Air Quality in Asia*
   Univ. of Oklahoma: *Does Interdisciplinary Research Require More Self-Discipline?*
4. Princeton University, Princeton, NJ; 9/05
   Invited Talk NOAA Geophysical Fluid Dynamics Laboratory 50th Anniversary Symposium: *21st Century Challenges (and Opportunities) for Graduate Education in the Earth Sciences*
5. Lake Air Director's Consortium (LADCO) Chicago, IL; 11/06
   Invited Presentation at the LADCO data analysis meeting (student Heather Woods attended to represent work)
   Assessing the Contribution of Regional Meteorology to Particulate Matter Variability over the Great Lakes Region
6. American Society of Mechanical Engineers, Chicago, IL (11/06)
   Invited Panelist, discussing "The Supply Side of Energy: Current and Pending Regulations"
7. NOAA Geophysical Fluid Dynamics Laboratory Princeton, NJ; 6/07
   Invited seminar speaker
   Impacts of Global Change on Regional Air Quality
8. European Respiratory Society Stockholm, Sweden; 9/07
   Invited speaker in "Hot Topic" session on Climate Change
9. Task Force on Hemispheric Transport of Air Pollution, Jülich, Germany; 10/07
   Invited speaker; travel supported by U.S. EPA
   Connecting global and regional air quality analysis in MICS-Asia
10. University of Rochester Rochester, NY; 4/08
    Invited speaker in Energy Forum
    Climate Change, Air Pollution, and Energy Use
11. University of Maryland College Park, MD; 11/08
    Invited speaker in Atmospheric Science Colloquium series
    Global Processes and Air Quality
12. University of Chicago Chicago, IL; 1/09
    Invited speaker in Geosciences Colloquium series
    Managing Air Quality to 2050
13. International Institute for Applied Systems Analysis (IIASA) Laxenburg, Austria; 2/09
    Invited Talk (also invited to all previous nine annual meetings of the Model Inter-comparison Study for Asia, MICS-Asia, project)

14. University of Illinois Urbana-Champaign, IL; 4/09
Invited speaker in Atmospheric Science Colloquium series
Hemispheric Air Pollution and Regional Impacts
15. Wisconsin Natural Resources Board, Madison, WI; 6/10
Invited presenter on the air quality co-benefits of carbon reduction strategies
16. University of Iowa, Iowa City, IA; 4/11
Invited by the Public Policy Program, Talk title: "Sustainability and the Midwest"
17. University of Wisconsin—Madison, Madison WI; 7/11
Invited Speaker for Wednesday Night @ The Lab
18. American Geophysical Union, San Francisco, CA; 12/11
Invited Talk: "Assessing Climate Impacts on Air Pollution in Models and Measurements"
19. Brown University, Providence, RI; 4/12
Invited Seminar; Talk title: "Energy Options for Cleaner Air"
20. National Meeting of Graduate Women in Science, Madison, WI; 6/12
Invited Talk: "Scientific Innovation Beyond the Lab"
21. University of Wisconsin—Madison, Madison WI; 9/12
Invited Speaker for the Weston Roundtable Series
22. University of Wisconsin—Madison, Madison WI; 9/12
Invited Speaker for Atmospheric and Oceanic Sciences Colloquium
23. Electric Power Research Institute, 2012 Fall Environment Program Advisory Meetings, Milwaukee, WI; 9/12
Invited Talk: "Understanding Air Quality in the Great Lakes Region"
24. University of Calgary, Institute for Sustainable Energy, Environment and Economy, Calgary, Canada; 3/13
Invited Talk: "Energy Options for Cleaner Air"
25. Interface 2013 Symposium at Chapman University, Orange County, CA; 4/13
Invited Talk: "Satellite and Model Data to Support Air Quality Management"
26. NASA Health and Air Quality Applications, Minneapolis, MN; 9/13
Invited Talk "NASA Air Quality Applied Sciences Team"
27. University of Wisconsin--Green Bay, Green Bay, WI; 11/13
Invited Talk: "Energy Options for Cleaner Air"
28. American Geophysical Union, San Francisco, CA; 12/13
Invited Talk in session "Measurements, Modeling, and Evaluation of Emissions"
29. 2014 Midwest and Central States Air Quality Workshop, St. Louis, MO; 4/14
Invited Talk "Quantifying Source Contributions to O_3 and $PM_{2.5}$ Pollution Episodes across the Eastern US"
30. Metcalf Institute Science Training for Journalists, Chicago, IL; 9/14
Invited presenter to national news editors (9/17/14) and regional journalists (9/18/14) on climate change impacts
31. American Geophysical Union, San Francisco, CA; 12/14
Invited Presentation on "Supporting Early Career Women in the Geosciences through Online Peer-Mentoring: Lessons from the Earth Science Women's Network (ESWN)"
32. University of California at Irvine, Irvine, CA; 2/15
Invited Talk on "Satellite Data for Air Quality Management"
33. Annual Earth Day Symposium, Madison, CO; 5/15
Invited Panelist on Science for Policy Applications
34. Western States Air Meeting, hosted by EPA, Boulder, CO; 5/15
Invited Talk on the NASA Air Quality Management Team
35. American Thoracic Society, panel hosted by NASA Applied Sciences, Denver, CO; 5/15
Invited Talk on the NASA Air Quality Management Team
36. Wisconsin Department of Natural Resources State-Wide Air Meeting, Sheboygan, WI; 10/15
Invited Keynote on "Satellite Data for Air Quality in Wisconsin"
37. Princeton University, Princeton, NJ; 11/15
Invited Panelist for 60th Anniversary of the NOAA Geophysical Fluid Dynamics Laboratory
38. American Geophysical Union, Fall Meeting, San Francisco, CA; 12/15

Invited Panelist for "Great Debate on Cities Adaptation and Mitigation to Climate Change." Reported in *EOS* December 2015 (http://tinyurl.com/TH-AGU-2015)

39. LaFollette School of Public Affairs, Madison, WI; 4/16
    Invited Speaker
40. Wisconsin Alumni Association, Madison, WI; 4/16
    Invited Showcase Speaker
41. Edgewood College Undergraduate Research Celebration, Madison, WI; 4/16
    Invited Dinner Keynote and Afternoon Speaker
42. 2016 Midwest and Central States Air Quality Workshop, St. Louis, MO; 6/16
    Invited Speaker
43. NCAR/ASP 2016 Summer Colloquium on Air Quality, Boulder, CO; 7/16
    Invited Lecturer
44. NASA Health and Air Quality Applications, Asheville, NC; 9/16
    Invited Talk "NASA Health and Air Quality Applied Sciences Team"
45. International Global Atmospheric Chemistry (IGAC), 2016 Meeting, Breckenridge, CO; 9/16
    Invited Speaker Cities in a Global Context
46. Federation of Environmental Technologists, Inc. 2016 Meeting, Pewaukee, WI; 10/16
    Invited Lunchtime Speaker Satellites for Health and Air Quality Analysis
47. University of Pittsburgh, Pittsburg, PA; 11/16
    Invited Speaker on Satellites for Health and Air Quality Analysis
48. American Association for the Advancement of Science (AAAS) Annual Meeting, Boston, MA; 2/17
    Invited Speaker on Scientists' Engagement in Public Outreach
49. Wednesday Night @ The Lab, Madison, WI; 3/17
    Invited Speaker on Past and Future of Air Quality in the U.S.
50. Princeton University, Princeton, NJ; 3/17
    Invited Speaker for Science, Technology, and Environmental Policy Program
51. Northwestern University, Evanston, IL; 4/17
    Invited Speaker, Department of Earth and Planetary Sciences
52. University of California, Berkeley, Berkeley, CA; 4/17
    Invited Speaker for Philomathia Forum
53. Upcoming: Annual Meeting of the Air & Waste Management Association, Pittsburgh, PA; 5/17
    Invited Speaker
54. Upcoming: Washington State University, Pullman, WA; 10/17
    Invited Speaker