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*Center for Sustainability and the Global Environment (SAGE)
Nelson Institute for Environmental Studies, Department of Atmospheric and Oceanic Sciences, Department
of Civil and Environmental Engineering
University of Wisconsin—Madison, Madison, WI 53726*

PROFESSIONAL EXPERIENCE

University of Wisconsin – Madison

- 2009-Present: Associate Professor, Nelson Institute for Environmental Studies
- 2008-Present: Director, Nelson Institute Center for Sustainability and the Global Environment (SAGE)
- 2008-2010: Faculty Coordinator
SAGE Global Stewards Sustainability Prize (formerly Climate Leadership Challenge)
- 2009-Present: Associate Director, Wisconsin Bioenergy Initiative
- 2006-Present: Associate Director, National Center for Freight Infrastructure, Research, and Education (CFIRE)
- 2008-Present: Affiliate Appointment in the La Follette School of Public Policy
- 2003-2009: Assistant Professor, Nelson Institute for Environmental Studies
- 2003-Present: Affiliate Appointments in:
 - Department of Atmospheric and Oceanic Sciences (Joint Governance, 2009-present)
 - Department of Civil and Environmental Engineering

Other positions

- 2011-Present: Member, NASA Air Quality Applied Sciences Team
- 2010-Present: Advisory Board Member, OurEarth.org
- 2010-Present: Executive Board Member, *Environmental Research Letters*
- 2006-2010: Editorial Board Member, *Environmental Research Letters*
- 2002-Present: Founding Board Member,
Earth Science Women's Network (ESWN) and Earth Science Jobs Network
- 2001-2003: Post-Doctoral Fellow, Earth Institute, Columbia University
- 1998-2001: NASA Earth System Science Fellow, Princeton University
- 1995-1998: National Defense Science and Engineering Graduate (NDSEG) Fellow, Princeton 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
Magna Cum Laude, Sigma Xi, Rohn Truett Award in Applied Mathematics, National Merit Scholarship Winner

HONORS and AWARDS

- 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 (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

Underlined authors with an * are Dr. Holloway's graduate and undergraduate advisees, or students with whom she worked closely as a committee member; # denote Holloway's post-doctoral advisees.

- **Peer-Reviewed Publications (in chronological order)**
1. Holloway, T., H. Levy II, and P. Kasibhatla (2000), Global Distribution of Carbon Monoxide, *J. Geophys. Resch.*, 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. Resch.*, 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. 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.
 6. 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.
 7. Denholm, P.* and T. Holloway (2005), Improved accounting of emissions from utility energy storage system operation, *Environ. Sci. Technol.*, 39, 9016-9022.
 8. 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.
 9. 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.
 10. Holloway, T., P. Kinney, and A. Sauthoff* (2005), Application of air quality models to public health analysis, *Energy for Sustainable Development*, 9, 49-57.

11. 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.
12. 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.
13. 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. Epidemiol.*, p. 1-10. U.S. Department of Health & Human Services 2008 Nominee for the Charles C Shephard Science Award in Assessment & Epidemiology
14. 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.
15. 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)
16. 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.
17. 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.
18. 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.
19. 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.
20. 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.
21. 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.
22. 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.
23. 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)
24. 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 Nocturnal Layer using Elemental Mercury as a Ubiquitous Tracer, *GRL*, 35, L17812, doi:10.1029/2008GL034840.
25. 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.

26. 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 (200X), Multi-model Estimates of Intercontinental Source-Receptor Relationships for Ozone Pollution, *J. Geophys. Research (in press)*.
27. 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)
28. Stone, Brian, Adam Mednick, Tracey Holloway, S.N. Spak* (2009) Mobile Source CO₂ Mitigation through Smart Growth Development and Vehicle Fleet Hybridization, *ES&T* 43 (6), 1704–1710, doi:10.1021/es8021655.
29. 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.
30. 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.
31. 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.
32. 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.
33. 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.
34. 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.
35. 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.
36. 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.

- **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/>

- **Other non-refereed publications**

1. Fiore, A., T. Holloway, and M. G. Hastings (2003), A global perspective on air quality: Intercontinental transport and linkages with climate, *Environmental Manager*, December, 2003, p. 13-22.

2. Holloway, T., A. Fiore, and M. Galanter Hastings (2004), Developing a Dialogue on Hemispheric Pollution, *Environ. Sci. Technol.*, 38, p. 1914-1915.
3. Sauthoff, A., P. Meier, T. Holloway (2010), *Assessment of Biodiesel Scenarios for Midwest Freight Transport Emission Reduction*. CFIRE Project Final Report, 02-10.

• **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. Tracey Holloway (9/11-8/12) “Using OMI NO2 Data to Bridge the Gap Between Monitors and Models,” NASA funding through the ACAST Tiger Team initiative \$70,000.
15. Patz, Jonathan, Tracey Holloway, and Paul Meier (10/11-9/13) “Climate Change Impacts on Power Plant Emissions, Air Quality and Health in the US” NIH \$392,000.

• **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) “Arctic 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.

• **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
 Climate Change, Air Pollution, and Future Health Risks
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 annual meetings of the MICS-Asia project)
11th Annual Meeting of the Model Inter-comparison Study for Asia (MICS-Asia), 2/08
Comparison of WRF/Chem and CMAQ Models

- 10th Annual Meeting of the Model Inter-comparison Study for Asia (MICS-Asia), 2/08
Regional Air Quality in Asia in a Hemispheric Context
- 9th Annual Meeting of the Model Inter-comparison Study for Asia (MICS-Asia), 2/07
Hemispheric Air Pollution Transport: Asia as a Source and Receptor
13. University of Illinois Urbana-Champaign, IL; 4/09
Invited speaker in Atmospheric Science Colloquium series
 Hemispheric Air Pollution and Regional Impacts
14. Wisconsin Natural Resources Board, Madison, WI; 6/10
 Invited presenter on the air quality co-benefits of carbon reduction strategies
15. University of Iowa, Iowa City, IA; 4/11
Invited by the Public Policy Program, Talk title: "Sustainability and the Midwest"

EDUCATIONAL ACTIVITIES

- **Graduate and Undergraduate Courses at UW-Madison**

- ENVIR ST 250, Introduction to Sustainability Science (Spring 2011, 3 credit hours)

Developed a new course geared towards a solutions-oriented understanding of environmental and energy issues, focused on resource sustainability. To advance these goals, the course introduces basic quantitative analysis methods and builds these skills by solving problems inspired by real-world sustainability issues. Readings: Academic and popular science articles; original problem sets developed for the course.

- ATM OCN/ENVIR ST 535, Atmospheric Dispersion and Air Pollution (Spring 2005-2008, Spring 2010, 3 credit hours)

Developed a new course covering the transport and chemistry of air pollutants on local to global scales. Homework sets integrate numerical analysis of atmospheric systems, analytical derivation of key concepts, student development of research questions, and written explanations of project motivation and results. Textbook: *Introduction to Atmospheric Chemistry* by Daniel J. Jacob, Princeton University Press, supplemented by individual articles and book chapters.

- ENVIR ST 539, Air Resources Science and Policy (Fall 2003-2008, Fall 2010, 3 credit hours)

Developed a new course for upper level undergraduates and graduate students across a wide range of disciplines (environmental studies, law, urban and regional planning, engineering, anthropology, and others). Course focuses on emissions from energy use, weather and seasonal climate prediction, global climate change, and air pollution on local to global scales.

- ENVIR ST 761, Air Resources Management Seminar (Spring 2004-2011, 1 credit hour, co-taught with Professor Jamie Schauer, CEE)

Helped develop a new course covering current issues in assessment and management of air pollution (required for students in the ARM certificate program).

- Community Environmental Forum on Green Jobs (Fall 2010, community outreach and education)

Discussion exploring green jobs and innovation from an interdisciplinary perspective, engaging both the university and the broader community + ENVIR ST 900, Seminar in Sustainability Science, Technology, and Policy (Fall 2010, 1 credit hour) Seminar associated with the Weston Roundtable Lecture Series, coordinated by Prof. Holloway: www.sage.wisc.edu/weston

- ENVIR ST 900, Seminar on Sustainability and the Global Environment (Spring 2009, Spring 2010 1 credit hour)

New discussion seminar exploring sustainability issues from an interdisciplinary perspective, with attendance and participation in the SAGE weekly seminars.

- ENVIR ST 600, Undergraduate Capstone Course, “The Environmental Professional” (Spring 2009, 3 credit hours)

Developed a new course for upper level undergraduates in the Environmental Studies Certificate Program. Course engages students in designing resources for college students interested in pursuing interdisciplinary careers, building on students’ own understanding of interdisciplinary problems and solutions developed through the course, and over their disciplinary and interdisciplinary coursework.

- ENVIR ST 506, Environmental Modeling and Analysis (Fall 2008, 3 credit hours)

Introduces students to environmental modeling concepts and methods, with hands-on projects using the Stella modeling software, student-designed final projects, group work, co-teaching, and discussion. Required first course in the Certificate on Humans and the Global Environment (CHANGE), graduate certificate program.

- ENVIR ST 900, Community Environmental Forum on Energy (Spring 2007, 1 credit hour)

Discussion seminar exploring energy issues from an interdisciplinary perspective, engaging both the university and the broader community (~40 participants, of which 10 were enrolled students).

- **Advising and Mentoring**

| Ph.D. advisees | | | | | |
|---------------------------|----------------|-----------------------------|--------------------------------------|--|-------------------------------------|
| Status | Name | Degree (date) | Program | Thesis Title/Topic | Current Employment |
| <i>Graduated</i> | Scott Spak | Ph.D. (2009) | AOS - EAP/ARM - Delta Prog. | Processes Controlling Aerosol Distributions at Regional Scales | Assistant Prof., University of Iowa |
| <i>Graduated</i> | Matt Johnston | M.S. (2006) Ph.D. (2009) | Land Resources - EAP | M.S.: Global Biofuel Capacities; Ph.D.: Environmental Impacts of Global Biofuel Use | Post-Doc, University of Minnesota |
| Currently enrolled | Erica Bickford | Ph.D. (2012) | Environment & Resources - TMP/ARM | Impact of Freight Infrastructure Changes on Regional Air Quality and Climate Emissions | *** |

Please note: AOS = Atmospheric and Oceanic Sciences; ARM = Air Resources Management Certificate Program; EAP = Energy Analysis and Policy Graduate Certificate Program; TMP = Transportation Management and Policy Graduate Certificate Program; Environment & Resources (formerly Land Resources), ARM, EAP, and TMP are all administered by the Nelson Institute for Environmental Studies.

| M.S. advisees | | | | | |
|--|---------------------|---------------|-------------------------------------|--|---|
| Status | Name | Degree (date) | Program | Thesis Title/Topic | Current Employment (or following graduation) |
| <i>Graduated</i> (co-advised with Teresa Adams) | Raine Gardner | M.S. (2006) | CEE - TMP | Quantifying Emissions from Heavy Duty Diesel Vehicles in the Midwest | Transportation Engineer, MSA Professional Services |
| <i>Graduated</i> | Heather Woods | M.S. (2007) | AOS - ARM | Meteorological Processes Affecting Aerosols in the Great Lakes Region | Staff Scientist, Environmental Resources Management (Chicago, IL) |
| <i>Graduated</i> | Christopher Dresser | M.S. (2008) | Land Resources - ARM/TMP | Analysis of Temporal and Spatial Variability in Freight Emissions | U.S. EPA (Ann Arbor, MI) |
| <i>Graduated</i> | Caitlin Littlefield | M.S. (2009) | Environment & Resources - CHANGE | Modeling Atmospheric Mercury | Teacher, Virginia Beach Friends School |
| <i>Graduated</i> | Claus Moberg | M.S. (2010) | AOS - ARM | Background ozone impacting the Western U.S. | Snowshoe, Inc. (Madison, WI) |
| <i>Graduated</i> | Steven Plachinski | M.S. (2010) | Environment & Resources - CHANGE | Air Quality Co-Benefits of Carbon Reduction Policies in the Electricity Sector | ESH Consulting (Sheboygan, WI) |
| <i>Graduated</i> (Mentor: Dr. C. Barford) | Mitchell Myhre | M.S. (2010) | Environment & Resources | Bioenergy feedstock production | Alliant Energy |
| <i>Graduated</i> | Matthew Luedke | M.S. (2011) | CEE - ARM | Air quality impacts of expanded natural gas utilization | Snowshoe, Inc. (Madison, WI) |
| <i>Graduated</i> | Jami Morton | M.S. (2011) | Environment & Resources - ARM | Constraining uncertainties in atmospheric mercury chemistry | Snowshoe, Inc. (Madison, WI) |
| <i>Graduated</i> (Mentor: Dr. C. Barford) | Keith Cronin | M.S. (2011) | Environment & Resources -EAP | Carbon balance of bioenergy feedstock production | Meier Engineering Research, part-time (Madison, WI) |
| Currently enrolled | Phillip Duran | M.S. (2012) | Environment & Resources - EAP | Air Quality Impacts of Solar Energy in Urban Areas | *** |

Please note: AOS = Atmospheric and Oceanic Sciences; ARM = Air Resources Management Certificate Program; CEE = Civil and Environmental Engineering; CHANGE = Certificate in Humans and the Global Environment; EAP = Energy Analysis and Policy Graduate Certificate Program; TMP = Transportation Management and Policy Graduate Certificate Program; Environment & Resources (formerly Land Resources), ARM, CHANGE, EAP, and TMP are all administered by the Nelson Institute for Environmental Studies.

| Non-Degree Scholars Advised | | | | | |
|-----------------------------|------------|-------------------|---------------|---|---------------------------------|
| Status | Name | Employment Period | Program | Thesis Title/Topic | Current Employment |
| Post-Doc | Meiyun Lin | 3/2008-3/2010 | Funding: NASA | Global and Regional Air Pollution in Asia | Scientist, Princeton University |

| Undergraduate research mentees & advisees | | | | | |
|---|--|---------------|---|--|--|
| Status | Name | Degree (date) | Program | Thesis Title/Topic | Employment following graduation |
| <i>Graduated</i> | Susanna Ehlers - URS - 3 yrs in lab - Thesis mentor | B.S. (2007) | Geography (NOAA Hollings Fellow) | Export of Ozone Precursors from the North American Boundary Layer | M.S., CEE Carnegie Mellon University, NDSEG Fellow |
| <i>Graduated</i> | Daniel Barker - research asst. - mentee | B.S. (2008) | Biology | Climate & Air Quality (undergrad. rsch asst; informal advisee) | M.S., University of Washington—Seattle |
| <i>Short-term</i> | Philip Thomas - URS | B.S. (2011) | Undecided | Climate & Air Quality | <i>supervised 1 year</i> |
| <i>Short-term</i> | Thomas Langel | B.S. (2011) | Chemical Eng. (NOAA Hollings Fellow) | Energy & Air Quality | <i>supervised 1 year</i> |
| <i>Short-term</i> | Erik Gould | B.S. (2012) | AOS. (NOAA Hollings Fellow) | Air Quality & Emissions Modeling | <i>supervised 1 year</i> |
| Currently enrolled | Olivia Clifton | B.S. (2012) | Applied Math-Ecology | Air quality observations | *** |
| Currently enrolled | Alexandra Karambelas | B.S. (2012) | AOS Certificate in Environmental Studies | Impacts of global pollution on U.S. air quality | *** |
| Currently enrolled | Jacob Oberman | B.S. (2012) | Chemical Eng. (NOAA Hollings Fellow; UW Holstrom Fellow; Wisconsin Space Grant) | Spatial and Temporal Variability in NO ₂ from Satellite | *** |
| Currently enrolled | Keith Maki | B.S. (2014) | Computer Science | Satellite data processing | *** |

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