

**J. WILLIAM MUNGER**  
**Curriculum Vitae**

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**PROFESSIONAL EXPERIENCE**

Senior Research Fellow, 2002- present, School of Engineering and Applied Sciences, Harvard University

Research Associate, 1991 - 2001, Division of Engineering and Applied Sciences, Harvard University.

Research Fellow, 1988 - 1991, Division of Applied Sciences, Harvard University.

Graduate Research Assistant, 1984 - 1988, Environmental Engineering Science,  
California Institute of Technology.

Associate Research Engineer, 1981 - 1984, Environmental Engineering Science,  
California Institute of Technology.

Graduate Research Assistant, 1980 - 1981, Environmental Engineering Program,  
Dept. of Civil and Mineral Engineering, University of Minnesota.

Graduate Research Assistant, 1977 - 1979, Dept. of Ecology and Behavioral Biology,  
University of Minnesota.

**EDUCATION**

Ph. D. (Environmental Engineering Science) Caltech, June 1989 (*M.R. Hoffmann advisor*)

M. S. (Ecology) University of Minnesota, 1981 (*E. Gorham advisor*)

B. S. (Biology) *summa cum laude* University of Minnesota, 1976

**MAJOR FIELD CAMPAIGNS**

NASA LBA, ABLE-3B, and BOREAS

Harvard Forest Environmental Measurement Site

Shenandoah Cloud and Photochemistry Experiment; carbonyl measurements

Greenland Ice Sheet Project; NO<sub>y</sub> fluxes at Summit Greenland

**HONORS**

Editor's Citation for Excellence in Refereeing, *Geophysical Research Letters*. (2001); ARCS Foundation Fellowship, (1987); ACS Division of Environmental Chemistry, Graduate Student Award, (1987)

**OTHER PROFESSIONAL RESPONSIBILITIES**

LBA-Ecology Science Team - LBA site selection and DIS subcommittee member

AmeriFlux Science Steering Committee

NEON: Design Consortium, Site selection committee, and instrumentation advisory groups

## PUBLICATIONS

### Journal Articles

- Wang, Y., X. Wang, Y. Kondo, M. Kajino, J. W. Munger, and J. Hao (2011), Black carbon and its correlation with trace gases at a rural site in Beijing: Top-down constraints from ambient measurements on bottom-up emissions, *J. Geophys. Res.*, doi:10.1029/2011JD016575, in press
- Blonquist, J. M., Jr., S. A. Montzka, J. W. Munger, D. Yakir, A. R. Desai, D. Dragoni, T. J. Griffis, R. K. Monson, R. L. Scott, and D. R. Bowling (2011), The potential of carbonyl sulfide as a proxy for gross primary production at flux tower sites, *J. Geophys. Res.*, 116, G04019, doi:10.1029/2011JG001723
- Dang, X., C.-T. Lai, D. Y. Hollinger, A. J. Schauer, J. Xiao, J. W. Munger, C. Owensby, and J. R. Ehleringer (2011), Combining tower mixing ratio and community model data to estimate regional-scale net ecosystem carbon exchange by boundary layer inversion over four flux towers in the United States, *J. Geophys. Res.*, 116, G03036, doi:10.1029/2010JG001554.
- Richardson, A. D., and 32coauthors (2011), Terrestrial Biosphere Models Need Better Representation of Vegetation Phenology: Results from the North American Carbon Program Site Synthesis, *Global Change Biology*, (in press).
- McKinney, K. A., Lee, B. H., Vasta, A., Pho, T. V., and Munger, J. W. (2011), Emissions of isoprenoids and oxygenated biogenic volatile organic compounds from a New England mixed forest, *Atmos. Chem. Phys.*, 11, 4807-4831, doi:10.5194/acp-11-4807-2011, 2011.
- Lee, B. H., E. C. Wood, M. S. Zahniser, J. B. McManus, D. D. Nelson, S. C. Herndon, G. W. Santoni, S. C. Wofsy, J. W. Munger (2011), Simultaneous measurements of atmospheric HONO and NO<sub>2</sub> via absorption spectroscopy using tunable mid-infrared continuous-wave quantum cascade lasers, *Applied Physics B*, 102, 417-423, DOI 10.1007/s00340-010-4266-5.
- Wu, Z., X. Wang, F. Chen, A. A. Turnipseed, A. B. Guenther, D. Niyogi, U. Charusombat, B. Xia, J. W. Munger, and K. Alapathy (2011), Evaluating the calculated dry deposition velocities of reactive nitrogen oxides and ozone from two community models over a temperate deciduous forest, *Atmospheric Environment*, 45(16), 2663-2674.
- Xiao, J., et al. (2011), Assessing net ecosystem carbon exchange of U.S. terrestrial ecosystems by integrating eddy covariance flux measurements and satellite observations, *Agricultural and Forest Meteorology*, 151(1), 60-69.
- Medvigy, D., S. C. Wofsy, J. W. Munger, and P. R. Moorcroft (2010), Responses of Terrestrial Ecosystems and Carbon Budgets to Current and Future Environmental Variability, *Proceedings of the National Academy of Sciences of the United States of America*, 107(18), 8275-8280, doi: 10.1073/pnas.0912032107.
- Wu, C. Y., J. W. Munger, Z. Niu, and D. Kuang (2010), Comparison of Multiple Models for Estimating Gross Primary Production Using MODIS and Eddy Covariance Data in Harvard Forest, *Remote Sensing of Environment*, 114(12), 2925-2939, doi: 10.1016/j.rse.2010.07.012.
- Phillips, S. C., R. K. Varner, S. Frohling, J. W. Munger, J. L. Bubier, S. C. Wofsy, and P. M. Crill (2010), Interannual, seasonal, and diel variation in soil respiration relative to ecosystem respiration at a wetland to upland slope at Harvard Forest, *J. Geophys. Res.*, 115, G02019, doi:10.1029/2008JG000858.
- Wang, Y., Munger, J. W., Xu, S., McElroy, M. B., Hao, J., Nielsen, C. P., and Ma, H. (2010) CO<sub>2</sub> and its correlation with CO at a rural site near Beijing: implications for combustion efficiency in China, *Atmos. Chem. Phys.* 10, 8881-8897 DOI: 10.5194/acp-10-8881-2010
- Richardson, A. D., T. A. Black, P. Ciais, N. Delbart, M. A. Friedl, N. Gobron, D. Y. Hollinger, W. L. Kutsch, B. Longdoz, S. Luyssaert, M. Migliavacca, L. Montagnani, J. W. Munger, E. Moors, S. L. Piao, C. Rebmann, M. Reichstein, N. Saigusa, E. Tomelleri, R. Vargas, and A. Varlagin (2010), Influence of spring and autumn phenological transitions on forest ecosystem productivity, *Philos. Trans. R. Soc. B-Biol. Sci.*, 365(1555), 3227-3246, doi: 10.1098/rstb.2010.0102.
- Wang, Y. X., J. M. Hao, M. B. McElroy, J. W. Munger, H. Ma, C. P. Nielsen, and Y. Q. Zhang (2010), Year round measurements of O<sub>3</sub> and CO at a rural site near Beijing: variations in their correlations, *Tellus Ser. B-Chem. Phys. Meteorol.*, 62(4), 228-241, doi: 10.1111/j.1600-0889.2010.00464.x.
- Xiao, J., Q. Zhuang, B. E. Law, J. Chen, D. D. Baldocchi, D. R. Cook, R. Oren, A. D. Richardson, S. Wharton, S. Ma, T. A. Martini, S. B. Verma, A. E. Suyker, R. L. Scott, R. K. Monson, M. Litvak, D. Y. Hollinger, G. Sun, K. J. Davis, P. V. Bolstad, S. P. Burns, P. S. Curtis, B. G. Drake, M. Falk, M. L. Fischer, D. R. Foster, L. Gu, J. L. Hadley, G. G. Katul, R. Matamala, S. McNulty, T. P. Meyers, J. W. Munger, A. Noormets, W. C. Oechel, K. T. Paw U, H. P. Schmid, G. Starr, M. S. Torn, and S. C. Wofsy (2010), A continuous measure of gross primary production for the conterminous United States derived from MODIS and AmeriFlux data, *Remote Sensing of Environment*, 114(3), 576-591.

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- Mahadevan, P., S. C. Wofsy, D. M. Matross, X. Xiao, A. L. Dunn, J. C. Lin, C. Gerbig, J. W. Munger, V. Y. Chow, and E. W. Gottlieb (2008), A satellite-based biosphere parameterization for net ecosystem CO<sub>2</sub> exchange: Vegetation Photosynthesis and Respiration Model (VPRM), *Global Biogeochem. Cycles*, 22, GB2005, doi:10.1029/2006GB002735.
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- Xiao, J., Q. Zhuang, D. D. Baldocchi, B. E. Law, A. D. Richardson, J. Chen, R. Oren, G. Starr, A. Noormets, S. Ma, S. B. Verma, S. Wharton, S. C. Wofsy, P. V. Bolstad, S. P. Burns, D. R. Cook, P. S. Curtis, B. G. Drake, M. Falk, M. L. Fischer, D. R. Foster, L. Gu, J. L. Hadley, D. Y. Hollinger, G. G. Katul, M. Litvak, T. A. Martin, R. Matamala, S. McNulty, T. P. Meyers, R. K. Monson, J. W. Munger, W. C. Oechel, K. T. Paw U, H. Peter Schmid, R. L. Scott, G. Sun, A. E. Suyker, M. S. Torn (2008) Estimation of net ecosystem carbon exchange for the conterminous United States by combining MODIS and AmeriFlux data, *Agricultural and Forest Meteorology*, 148, 1827-1847, DOI: 10.1016/j.agrformet.2008.06.015.
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