

James Jerome Schwab

Atmospheric Sciences Research Center
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Education and Training

Harvard University, Ph.D., 1983, Chemical Physics. Field: Atmospheric Chemistry.
Thesis title: *Spectroscopy and Reaction Kinetics of Halogen-, Hydrogen-, and Oxygen-Containing Free Radicals*
University of Minnesota, B.S., 1977, Physics.

Research and Professional Experience

Senior Research Faculty (permanent tenured position), Atmospheric Sciences Research Center, University at Albany, 1988-present. Interim Director 2011-2013
Dr. Schwab oversees and coordinates all atmospheric chemistry and aerosol field measurements at ASRC, including ASRC field stations at Whiteface Mountain and Pinnacle State Park. Responsible for selecting, outfitting, and operating the Pinnacle State Park atmospheric chemistry research site in Addison New York. Measurements of ozone and ozone precursor gases began in 1995 and measurement of PM_{2.5} and PM precursors began in 1999. Site operations manager/coordinator for PMTACS-NY EPA Supersite activity in New York City. Responsible for numerous instruments and all logistics, including electrical modifications to site buildings and all interactions with Queens College personnel. Coordinated additional intensive field operations at Whiteface Mountain and Pinnacle State Park. Supervise particulate matter laboratory used to characterize aerosols and evaluate measurement systems. Previous work included design, testing and building infrared laser based instruments for the measurement of atmospheric CH₄ and H₂O₂.

Research Professor (Adjunct), Department of Atmospheric and Environmental Sciences, University at Albany, 1988-present.
Teach Atmospheric Chemistry course to first and second year graduate students. Served on the Department Graduate Admissions Committee.

Associate Professor (Adjunct), Department of Chemistry, University at Albany, 1988-present

Research Fellow (Postdoctoral Scholar), Harvard University, 1983-1988.

Projects included leading project to measure water vapor in the stratosphere, pressure and flow sensors for ER-2 CIO instrument measuring in Antarctica, and laboratory measurements of rate constants for gas phase free radical reactions.

Research Support

PI and Co-PI on grants from NSF, NOAA, NASA, EPA, ESEERCO, and NYSERDA with a total value of more than \$25M.

Professional Organizations

American Physical Society – life member
American Geophysical Union – life member
American Association for Aerosol Research
Air and Waste Management Association

Students Mentored

Advisor or thesis reader for more than ten M.S. students at the University at Albany.

Thesis advisor and/or committee member for more than fifteen Ph.D. students at the University at Albany.

Summer research supervisor for more than ten undergraduates from the University at Albany and elsewhere, including two Ronald. E. McNair Summer Scholars.

Community Outreach and Service (selected)

School Board Member, Bethlehem Central School District, 1996-1999.

Appeared on local television stations numerous times as air pollution and climate change expert.

Recorded "Academic Minute" spot for WAMC/NPR. Appeared on "Vox Pop" call-in show.

Selected Publications (total of over 100 in peer-reviewed journals)

Zhang, J., M. Ninneman, E. Joseph, M.J. Schwab, B. Shrestha, and J.J. Schwab (2020), "Mobile laboratory measurements of high surface ozone levels and spatial heterogeneity during LISTOS 2018: Evidence for sea-breeze influence", *J. Geophys. Res. Atmospheres*, <https://doi.org/10.1029/2019JD031961>

Ninneman, M., K.L. Demerjian, and J.J. Schwab, "Ozone Production Efficiencies at Rural New York State Locations: Relationship to Oxides of Nitrogen Concentrations", *J. Geophys. Res.: Atmospheres*, 124, <https://doi.org/10.1029/2018JD029932>.

Zhang, J. S. Lance, R. Brandt, J. Marto, M. Ninneman, and J. J. Schwab, "Observed below-cloud and cloud interstitial aerosol chemical and physical properties at Whiteface Mountain, New York during August 2017", *ACS Earth Space Chem.*, DOI:10.1021/acsearthspacechem.9b00117

Ninneman, M., S. Lu, P. Lee, J. McQueen, J. Huang, K. Demerjian, and J. Schwab, "Observed and Model-Derived Ozone Production Efficiency over Urban and Rural New York State", *Atmosphere* **2017**, 8, 126; doi:10.3390/atmos8070126.

Schwab, J.J., D. Wolfe, P.W. Casson, R.E. Brandt, K.L. Demerjian, L. Husain, V.A. Dutkiewicz, K.L. Civerolo, O.V. Rattigan (2016), "Atmospheric Science Research at Whiteface Mountain, NY: Site Description and History". *Aerosol and Air Quality Research*, special issue on Atmospheric Chemistry and Physics and Chemistry at Mountain Sites. 16, 827-840, doi: 10.4209/aaqr.2015.05.0343

Y.L. Sun, Q. Zhang, J.J. Schwab, K.L. Demerjian, W.-N. Chen, M.-S. Bae, H.-M. Hung, O. Hogrefe, B. Frank, O.V. Rattigan, Y.-C. Lin, (2011). "Characterization of the sources and processes of organic and inorganic aerosols in New York City with a high-resolution time-of-flight mass spectrometer" *Atmos. Chem. Phys.*, 11, 1581-1602, doi:10.5194/acp-11-1581-2011.

M.-S. Bae, J.J. Schwab, W.-N. Chen, C.-Y. Lin, O.V. Rattigan, K.L. Demerjian, (2011). "Identifying pollutant source directions using multiple analysis methods at a rural location in New York" *Atmos. Environ.*, 45, 2531-2540, doi:10.1016/j.atmosenv.2011.02.020.

M.-S. Bae, J.J. Schwab, O. Hogrefe, B.P. Frank, G.G. Lala, and K.L. Demerjian, (2010), "Characteristics of size distributions at urban and rural locations in New York" *Atmos. Chem. Phys. Discuss.* 10, 69-108, www.atmos-chem-phys-discuss.net/10/69/2010

J.J. Schwab, J.B. Spicer, and K.L. Demerjian, (2009), "Ozone, Trace Gas, and Particulate Matter Measurements at a Rural Site in Southwestern New York State: 1995-2005" *J. Air & Waste Manage. Assoc.*, 59, 293-309, doi:10.3155/1047-3289.59.3.293.

J.J. Schwab, Y. Li, M.-S. Bae, K.L. Demerjian, J. Hou, X. Zhou, B. Jensen, and S. Pryor (2007), "A Laboratory Intercomparison of Real-Time Gaseous Ammonia Measurement Methods", *Environ. Sci. Technol.*, 41, 8412-8419, doi:10.1021/es070354r.