

RICHARD J. TROPP

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EDUCATION:

Ph.D	1979	The University of Texas at Austin	Physics
B.S.	1965	City College of New York	Physics

PROFESSIONAL INTEREST:

Dr. Richard J. Tropp is an Associate Research Professor in the Division of Atmospheric Sciences (DAS) at the Desert Research Institute (DRI), University and Community College System of Nevada. He has more than 36 years of management and research experience in the areas of ambient air quality monitoring, aerosol and particulate measurements, visibility, acid deposition, data analysis, quality assurance, regulation development, and air pollution control. His experience includes university research, management of state agency regulation development and research, and management and participation in ~50 ambient air monitoring projects. These projects included particulate measurements for advanced aerosol models, visibility, acid deposition, dry deposition, wet deposition, ozone precursors, air toxics, air quality monitoring, and revised ambient air quality standards and monitoring guidance, most recently for PM_{2.5}.

He currently is Principal Investigator for a contract providing PM_{2.5} FRM and chemical speciation laboratory support to the Texas Commission on Environmental Quality, a continuation of contracts over a 13 year period. He also provides QA and QC support to DRI's Environmental Analysis Facility, including NELAC accreditation and QA oversight of DRI's laboratory carbon analysis for the IMPROVE program and EPA's chemical speciation network. He is co-Principal Investigator for a joint effort to study the health effect of particulate matter in New Mexico. He recently was co-Principal Investigator for a study of air toxics in El Paso, TX for EPA Region 6 and wrote EPA's guidance document on ambient air monitoring costs.

Dr. Tropp also managed PM_{2.5} laboratory support contracts for the TexAQSI study through The University of Texas at Austin, Oklahoma, Colorado, and Clark County. He was co-Principal Investigator for the Central California Ozone Study (CCOS) supplemental field measurements and assisted Clark County in preparing its PM₁₀ SIP revision. He managed acceptance tests for the new Teflon filters provided by EPA to State and local agencies for PM_{2.5} monitoring at SLAMS. He also served as an invited external reviewer of EPA's Quality Assurance Guidance Document 2.12 for monitoring PM_{2.5}. He previously had helped EPA prepare its regulatory package for the proposed PM_{2.5} particulate standard, respond to public comments on the proposal, and prepare the final promulgation package for the standard. Dr. Tropp has managed particulate and visibility monitoring projects in major urban areas in Texas, Manhattan, and Philadelphia, and in rural areas of the eastern United States. In addition, he provided technical advice to State, local, and tribal agencies on particulate sampling and analysis through EPA's Saturation Monitor Repository.

His experience in managing and conducting QA/QC projects includes Acid MODES field study databases, QC for EPA's Clinical Environmental Laboratory, QA/QC support for the Republic of China EPA, QA program support for the binational Integrated Atmospheric Deposition Network and the Canadian Atmospheric Environment Service's air toxics program

PROFESSIONAL EXPERIENCE:

1998 to Present	Associate Research Professor, Division of Atmospheric Sciences, Desert Research Institute, Reno, NV.
1989 to 1998	Principal Scientist, TRC Environmental Corporation, Chapel Hill, NC.
1987 to 1989	Senior Research Associate, Research and Evaluation Associates Inc., Chapel Hill, NC.
1984 to 1987	Chief, Atmospheric Sciences Section, Texas Air Control Board, Austin, TX.
1981 to 1984	Chief, Emissions Standards and Engineering Section, Texas Air Control Board, Austin, TX.
1979 to 1980	Postdoctoral Research Associate, Department of Chemical Engineering, The University of Texas at Austin, Austin, TX.
1972 to 1979	Research Assistant, Department of Chemical Engineering, The University of Texas at Austin, Austin, TX.
1966 to 1972	Research Assistant, Department of Physics, The University of Texas at Austin, Austin, TX.
1965 to 1972	Teaching and Graduate Assistant, Department of Physics, The University of Texas at Austin, Austin, TX.

PROFESSIONAL MEMBERSHIPS

Air and Waste Management Association
(Technical Council Chair and Board of Directors)
American Association for Aerosol Research
American Physical Society
American Association for the Advancement of Science
American Society for Quality
New York Academy of Sciences

PUBLICATIONS

Tropp, R.J., J.R. Brock, and P.J. Kuhn (1980). Spectral Analysis of Tropospheric Aerosol Measurements Obtained with a New Method of Measuring the Particle Size Distribution of Aerosols. *Rev. Sci. Instrum.*, **51**, 516-520.

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- Price, J., S. Dattner, B. Lambeth, J. Kamrath, M. Aguirre Jr., G. McMullen, R. Tropp, and J. Chow (1998). Preliminary Results of Early PM_{2.5} Monitoring in Texas: Separating the Impacts of Transport and Local Contributions. . In *PM_{2.5}: A Fine Particle Standard*, J. Chow and P. Koutrakis, eds. Air & Waste Management Association, Pittsburgh, PA, pp. 191-202.
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- Chow, J.C.; J.G. Watson; D.H. Lowenthal; L.-W.A. Chen; R. Tropp; K. Park; and K. Magliano (2006). PM_{2.5} and PM₁₀ Mass Measurements in California's San Joaquin Valley. *Aerosol Sci. Technol.*, **40**(10):796-810.
- Chow, J.C.; J.G. Watson; P. Doraiswamy; L.-W.A. Chen; and R.J. Tropp (2007) Rilevamento, Modellistica, Aspetti Normativi ed Effetti Sulla Salute del Particolato Atmosferico. In *Il Particolato Fine in Atmosfera*. S. Cernuschi, M. Giugliano, M.Grosso, and G. Lonati, Eds. CIPA SRL, Milan, Italy, pp. 139-156 (In Italian)

PRESENTATIONS

- Tropp, R.J., J.R. Brock, and P.J. Kuhn (1982). Spectral Analysis of Ambient Aerosol and Trace Gas Measurements Paper 82-31.3, presented at the Air Pollution Control Association 75th Annual Meeting, New Orleans, LA, 20-25 June 1982.
- Tropp, R.J. (1983a). An Inhalable Particulate Matter Standard (PM-10) - Evaluating the Need for a New Regulation in Texas. Presented at the AIChE Spring Meeting, Houston, TX, 27-31 March 1983.

- Tropp, R.J. (1983b). Trends and Approaches in Regulatory Control of Fugitive VOC Emissions. Presented at the AIChE Spring Meeting, Houston, TX, 27-31 March 1983.
- Heisler, S.L., J.J. Shah, G.H. Hay, and R.J. Tropp (1983). Evaluation of Size-Specific Particulate Matter Emissions in Houston and El Paso, Texas. Paper 83-21.5, presented at the Air Pollution Control Association 76th Annual Meeting, Atlanta, GA, 19-24 June 1983.
- Smith, C.C. and R.J. Tropp (1984). Air Quality Data and Air Quality Standards in the Regulation of Toxic Air Pollutants. Paper 84-7.2, presented at the Air Pollution Control Association 77th Annual Meeting, San Francisco, CA, 24-29 June 1984.
- Tropp, R.J., C.C. Smith, C.J. Durrenberger, and S.L. Dattner (1984). Developing Short-Term Net Ground Level Concentration Limits for Lead. Paper 84-7.4, presented at the Air Pollution Control Association 77th Annual Meeting, San Francisco, CA, 24-29 June 1984.
- Zimmermann, K., R.J. Tropp, J. Barta, and K. Crum (1985). Atmospheric Visibility Trends in Dallas-Fort Worth and El Paso. Paper V814, presented at the Texas Academy of Science 88th Annual Meeting, Dallas, TX, 14-16 March 1985.
- Tropp, R.J., J. Barta, K. Crum, S.L. Dattner, and K. Zimmermann (1985). Time Series and Spectral Analysis of Ozone-Hydrocarbon Monitoring Data. Paper 85-21.1, presented at the Air Pollution Control Association 78th Annual Meeting, Detroit, MI, 16-21 June 1985.
- Dattner, S., J. Moneysmith, and R.J. Tropp (1987). Minimum Sampling Frequency Requirements for Sampling Toxic Pollutants Dominated by a Major Point Source, Paper 87-66.5, presented at the Air Pollution Control Association 80th Annual Meeting, New York, NY, 21-26 June 1987.
- Zimmermann, K.A., R.J. Tropp, and J. Barta (1987). The Relationship of Weather Patterns to Ozone in the Houston, Texas Area. Paper 87-113.4, presented at the Air Pollution Control Association 80th Annual Meeting, New York, NY, 21-26 June 1987.
- Einfeld, W.S., S.L. Dattner, J. Yarbrough, and R.J. Tropp (1988). The Dallas Winter Visibility Study. Paper 88-57.2, presented at the Air Pollution Control Association 81st Annual Meeting, Dallas, TX, 20-24 June 1988.
- Tropp, R.J., E.S. Ringler, and E.G. Evans (1991). Results from the Eastern Fine Particle and Visibility Monitoring Network. Paper 91-49.5, presented at the Air & Waste Management Association 84th Annual Meeting, Vancouver, BC, 16-21 June 1991.
- Evans, E.G., R.J. Tropp, and T. Fitz-Simons (1992). Meteorological and Site Influences Affecting the Comparison of Nephelometer and Photographic Determinations of Light Extinction at Rural Sites in the Eastern United States. Paper 92-60.04, presented at the Air & Waste Management Association 85th Annual Meeting, Kansas City, MO, 21-26 June 1992.
- Tropp, R.J. and S.F. Sleva (1994). The Use of Data Quality Objectives as a Tool in Total Quality Management and Project Planning. Paper 94-MP15.01, presented at the Air & Waste Management Association 87th Annual Meeting, Cincinnati, OH, 19-24 June 1994.
- Elkins, J.B., S.F. Sleva, T.K. Moody, R.J. Tropp, and S.M. Murchie (1994). The Application of EPA's Compendia of Toxic Organic and Inorganic Methods to Ambient Air Monitoring at Superfund Sites. Paper 94-RA127A.03, presented at the Air & Waste Management Association 87th Annual Meeting, Cincinnati, OH, 19-24 June 1994.

- Tropp, R.J., S.F. Sleva, W. Ramadan, and C.J. Harris (1996). Results of the 1994 Philadelphia PM_{2.5} and PM₁₀ Saturation Study. Paper 96-MP3.03, presented at the Air & Waste Management Association 89th Annual Meeting, Nashville, TN, 23-28 June 1996.
- Tropp, R.J., M. Mustafa, and R. Werner (1998). The Manhattan Community Based Particulate Study. Paper 98-TA31A.02, presented at the Air & Waste Management Association 91st Annual Meeting, San Diego, CA, 14-18 June 1998.
- Price, J., S. Dattner, B. Lambeth, J. Kamrath, M. Aguirre Jr., G. McMullen, K. Loos, W. Crow, R. Tropp, and J. Chow (1998). Interim Results of Early PM_{2.5} Monitoring in Texas: Separating the Impacts of Transport and Local Contributions. Presented at the AWMA 91st Annual Meeting, San Diego, CA, 14-18 June 1998. Air & Waste Management Association, Pittsburgh, PA.
- Walk, C.J., J.W. Kachtick, K. Loos, W.L. Crow, J. Price, B. Lambeth, M. Aguirre, Jr., G. McMullen, J.C. Chow, and R.J. Tropp (1999). The Results of a Collaborative Effort to Measure and Speciate PM_{2.5} in Houston and Other Texas Cities. Paper 99-413, presented at the Air & Waste Management Association 92nd Annual Meeting, St. Louis, MO, 20-24 June 1999.
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- Tropp, R.J., J.C. Chow, S.D. Kohl, and J.H. Price (2001). PM_{2.5} Mass and Composition Results in Texas. 94th Annual Meeting, Orlando, FL, 24-28 June 2001. Air & Waste Management Association, Pittsburgh, PA.
- Tropp, R.J., J. Engelbrecht, D.H. Lowenthal, S.D. Kohl, J.C. Chow, J.G. Watson, D.W. DuBois, R.J. Countess, S.J. Countess, and E.L. Michel (2003). Preliminary Assessment of PM_{2.5} Chemical Speciation Results for Texas. Presented at the International Air Quality Conference IV – Mercury, Trace Elements, and Particulate Matter, Arlington, VA 22-24 September 2003.
- Tropp, R.J., S.D. Kohl, A. Dickerson, B.C. Cristani, J.C. Chow, R.J. Countess, S.J. Countess, J.B. Flanagan, and E.L. Michel (2004). Quality Assessment of EPA PM_{2.5} Chemical Speciation Results for Texas. Presented at the US EPA and AWMA Symposium on Air Quality Measurement Methods and Technology - 2004, Research Triangle Park, NC, 20-22 April 2004.
- Tropp, R., J. Engelbrecht, S. Kohl, A. Dickerson, J.C. Chow, J.G. Watson, D. DuBois, R. Countess, S. Countess, and E. Michel (2004). Assessment of PM_{2.5} Chemical Speciation Results for Texas. Presented at the 97th Annual Meeting of the Air and Waste Management Association, “Sustainable Development: Gearing up for the Challenge!” Indianapolis, IN, 24 June 2004.

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- Tropp, R., J.C. Chow, J.G. Watson, S. Kohl, R. Countess, and E. Michel (2005). PM_{2.5} Chemical Speciation Results for Texas. Presented at the A&WMA’s Symposium on Air Quality Measurement Methods and Technology 2005, San Francisco, CA, 21 April 2005.
- Tropp, R.J., S.D. Kohl, J.C. Chow, J.G. Watson, R.J. Countess, S.J. Countess, and E.L. Michel (2005). PM_{2.5} Chemical Speciation Results for Texas. Presented at the International Air Quality Conference V – Mercury, Trace Elements, SO₂ and Particulate Matter, Arlington, VA 18-21 September 2005.
- Tropp, R.J., S.D. Kohl, J.C. Chow, J.G. Watson, M.R. Peterson, R.K.M. Jayanty, and J.B. Flanagan (2006). A Comparison of PM_{2.5} Chemical Speciation Analytical Results from Research Triangle Institute and Desert Research Institute. Presented at the A&WMA’s Symposium on Air Quality Measurement methods and Technology – 2006, Durham, NC, 9-11 April 2006.
- Chow, J.C., J.G. Watson, and R.J. Tropp (2006). Status and Development of PM_{10-2.5} NAAQS. Presented at the Workshop on Recent Advances in Aerosol Measurement, National Central University, Taipei, Taiwan, 5 June 2006.
- Tropp, R., J.C. Chow, J.G. Watson, S. Kohl, R. Countess, and S. Countess (2006). PM_{2.5} Chemical Speciation Results for Texas – 2001-2004. Presented at the A&WMA’s 99th Annual Conference & Exhibition, “Healthy Environments: Rebirth & Renewal”, New Orleans, LA, 20 June 2006.
- Tropp, R.J., S.D. Kohl, J.C. Chow, J.G. Watson, J.B. Flanagan, and R.K.M. Jayanty (2006). Comparison of PM_{2.5} Chemical Speciation Results for Texas Sites. Presented at the 7th International Aerosol Conference, IAC – 2006, St. Paul, Minnesota, 12 September 2006.
- Chow, J.C., J.G. Watson, and R.J. Tropp (2006). Status and Development of PM_{10-2.5} National Ambient Air Quality Standards in the US. Presented at Il Particolato Fine in Atmosfera, Milan, Italy, 12 October 2006.
- Tropp, R.J., S.D. Kohl, J.C. Chow, J.G. Watson, J.B. Flanagan, R.K.M. Jayanty, C. McDade, and W. White (2007). Developments in PM_{2.5} Chemical Speciation – The View from Texas. Presented at A&WMA’s Symposium on Air Quality Measurement Methods and Technology – 2007, San Francisco, CA, 30 April – 3 May, 2007.
- Tropp, R.J., J.C. Chow, J.G. Watson, S.D. Kohl, R.J. Countess, and S.J. Countess (2007). PM_{2.5} Chemical Speciation Results for Texas – 2001-2005. Presented at the 100th Annual meeting of the Air & Waste Management Association, Pittsburgh, PA, 26-29 June 2007.
- Tropp, R.J., S.D. Kohl, J.C. Chow, J.G. Watson, J.B. Flanagan, R.K.M. Jayanty, C. McDade, and

- W. White (2007). A Comparison of PM_{2.5} Chemical Speciation Results for Texas Sites. Presented at the 14th IUAPP World Congress, Brisbane, Australia, 9-13 September 2007.
- Tropp, R.J., L.-W. A. Chen, J.C. Chow, and J.G. Watson (2008). Assessment of Carbon Sampling Artifacts in PM_{2.5} Chemical Speciation Networks. Presented at the 101st Annual Meeting of the Air & Waste Management Association, Portland, OR, 24-27 June 2008.
- Tropp, R.J. (2009). Assessment of Data Quality Indicators for PM_{2.5} Chemical Speciation Compounds using Data from Texas. Presented at the 102nd Annual Meeting of the Air & Waste Management Association, Detroit, MI, 24-27 June 2008.
- Chow, J.C.; J.G. Watson; and R.J. Tropp (2009). Quality Assurance Plan for the U.S. PM Supersites. Presented at National Cheng Kung University, Tainan, Taiwan, 15 May 2009.
- Chen, L.-W. A., R.J. Tropp, D. Zhu, W.-W. Li, and E. Rodriguez-Hefner (2009). Air Toxics in El Paso, Texas: Implications for Cross-Border Transport. Presented at EPA's National Ambient Air Monitoring Conference, Nashville, TN, 2-5 November 2009.
- Tropp, R.J. (2010). PM_{2.5} Chemical Speciation Results for Texas. Presented at the TCEQ FY11 Annual Air Training, San Antonio, TX, 20 October 2010.

REPORTS

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- Tropp, R.J., T.H. Porter, and V. Anselmo (1984). Rainfall Collection and Analysis. Texas Air Control Board, Austin, TX.
- Porter, T.H., R.J. Tropp, B.A. Fowler, and J.H. Price (1986). Acid Rain - A Texas Perspective. Texas Air Control Board, Austin, TX.
- Price, J.H., R.J. Tropp, and J. Wiersema, (1987). Research Objectives, 1988. Texas Air Control Board, Austin, TX.
- Tropp, R.J. (1989). Acid Aerosol Measurements Workshop, February 1-3, 1989, Research Triangle Park, NC, Final Report. EPA-600/9-89-056, U.S. Environmental Protection Agency, Research Triangle Park, NC.
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- Tropp, R.J., S.F. Sleva, W. Ramadan, and C.J. Harris (1995). 1994 Philadelphia PM_{2.5} and PM₁₀ Saturation Study. Final Revised Report, TRC Environmental Report No. CH95-105. Prepared for U.S. EPA OAQPS, Research Triangle Park, NC.
- Tropp, R.J. (1997). Manhattan Community Based Particulate Study. Final Report, TRC Environmental Report No. CH97-02. Prepared for U.S. EPA Region II, New York, NY.
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- Chow, J.C., and R.J. Tropp (1998). Quality Assurance Project Plan for PM_{2.5} Laboratory Support for the TNRCC PM_{2.5} Ambient Air Monitoring Program. Prepared for Texas Natural Resource Conservation Commission, Austin, TX, by Desert Research Institute, Reno, NV. December 1998.
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