

Thomas E. Pierce, Associate Director for Science, in EPA's National Exposure Research Laboratory

Computational Exposure Division

[Mailing Address](#)

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Area of Expertise: My career over the past four decades has focused on the improvement of air quality simulation models. After contributing to and leading the development of dispersion models like MPTER, PTPLU, and SCREEN, I began work on regional chemical transport models (like the CMAQ modeling system). Models such as these are key tools used by decision makers to protect humans and the environment from exposure to harmful levels of air pollution. More recently, my research included the development of algorithms like the Biogenic Emissions Inventory System (BEIS) to characterize emissions influenced by meteorological processes -- such as VOCs and NO_x from soils and vegetation, NO from lightning, and PM_{2.5} emissions from wildland fires and fugitive dust. Now as Associate Director, I provide scientific and administrative leadership to the hard-working scientists and technical support staff in EPA's Computational Exposure Division.

Select Publications:

- Pierce, T., et al. (2010) Towards an improved characterization of dispersion near major roadways. Douw G. Steyn and S.T. Rao (ed.), *Air Pollution Modeling and its Applications XX*. Springer, Netherlands, C(1.16):95-98.
- Xu, Y., M. Wesley, and T. Pierce (2002) Estimates of biogenic emissions using satellite observations and influence of isoprene emission on O₃ formation over the eastern U.S., *Atmos. Environ.* 36:5819-5829.
- Roelle, P., V. Aneja, B. Gay, C. Geron, and T. Pierce (2001) Biogenic nitric oxide emissions from cropland soils, *Atmos. Environ.* 35:115-124.
- Guenther, A., C. Geron, T. Pierce et al. (2000) Natural emissions of non-methane volatile organic compounds, CO, and oxides of nitrogen from North America, *Atmos. Environ.* 32:2205-2230.
- Simpson, D., W. Winiwarter, G. Borjesson, S. Cinderly, A. Ferreiro, A. Guenther, C. Hewitt, R. Janson, M. Khalil, S. Owen, T. Pierce, et al. (1999) Inventorying emissions from nature in Europe, *J. Geophys. Res.* 104:8113-8152.
- Pierce, T., C. Geron, L. Bender, R. Dennis, G. Tonnesen, and A. Guenther (1998) Influence of increased isoprene emissions on regional ozone modeling, *J. Geophys. Res.* 103:25611-25629.

View more research publications by [Thomas Pierce](#).

Education:

- B.S. Meteorology, North Carolina State University, 1979
- M.S. Atmospheric Sciences, North Carolina State University, 1984
- Graduate level courses at NCSU and UNC, 1985-2014

Professional Experience:

- Associate Director for Science, Computational Exposure Division, NERL/EPA, RTP, NC, 2015–present.
- Deputy Director, Atmospheric Modeling and Analysis Division, NERL/EPA, RTP, NC, 2011–2015
- Chief, Emissions & Model Evaluation Branch, AMAD/NERL/EPA, RTP, NC, 2008–2011
- Acting Director, Ecosystems Research Division, NERL/EPA, Athens, GA, 2007
- Chief, Air-Surface Processes Modeling Branch, ASMD/ARL/NOAA, RTP, NC, 2003–2008
- Chief, Modeling Systems Analysis Branch, ASMD/ARL/NOAA, RTP, NC, 2001–2003
- Research Meteorologist, Atmospheric Sciences Modeling Division, ARL/NOAA, RTP, NC, 1985–2001
- Air Quality Meteorologist, Martin Marietta, Columbia, MD, 1984–1985
- Environmental Meteorologist, NUS Corporation, Gaithersburg, MD, 1982–1984
- Meteorology Intern, Meteorology Laboratory, ARL/NOAA, RTP, NC, 1978–1982