

Rachelle M. Duvall, Environmental Engineer in EPA's National Risk Management Research Laboratory

Air and Energy Management Division

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Areas of Expertise:

- Evaluation of methods for measurement of particulate matter and gas phase pollutants
- Source apportionment receptor modeling
- Citizen Science and educational outreach

Select Publications:

Williams R., **Duvall R.**, Kilaru V., Hagler G., Hassinger L., Benedict K., Rice J., Kaufman K., Judge R., Pierce G., Allen G., Bergin M., Cohen R.C., Fransioli, P., Gerboles M., Habre R., Hannigan M., Jack D., Louie P., Martin N.A., Penza M., Polidori A., Subramanian R., Ray K., Schauer J., Seto E., Thurston G., Turner J., Wexler A.S., Ning Z. Deliberating performance targets workshop: potential paths for emerging air sensor progress. *Atmospheric Environment, under review.*

Kimbrough S., Krabbe S., Baldauf R., Barzyk T., Brown M., Brown S., Croghan C., Davis M., Deshmukh P., **Duvall R.**, Feinberg S., Isakov V., Logan R., McArthur T., Shields A. Characterizing community air pollution impacts near complex sources: The Kansas City Transportation and Local-scale Air Quality Study (KC-TRAQS). *International Journal of Environmental Research and Public Health, under review.*

Knepp, T., Jim Szykman, R. Long, **R. Duvall**, J. Krug, M. Beaver, K. Cavender, K. Kronmiller, M. Wheeler, R. Delgado, R. Hoff, T. Berkoff, E. Olson, R. Clark, D. Wolfe, D. Van Gilst, and D. Neil. [Assessment of mixed-layer height estimation from single-wavelength ceilometer profiles.](#) *Atmospheric Measurement Techniques*, 10:3963-3983. 2017.

Duvall R.M., Long R.W., Beaver M.R., Kronmiller K.G., Wheeler M.L., Szykman J.J. [Performance evaluation and community application of low-cost sensors for ozone and nitrogen dioxide.](#) *Sensors*, 16(10): 1698. 2016.

Kim Y.H., Krantz T.Q., McGee J., Kovalcik K.D., **Duvall R.M.**, Willis R.D., Kamal A.S., Landis M.S., Norris G.A., Gilmour M.I. [Chemical composition and source apportionment of size fractionated particulate matter in Cleveland, Ohio, USA.](#) *Environmental Pollution*, 218:1180-1190. 2016.

Hall E.S., Kaushik S.M., Vanderpool R.W., **Duvall R.M.**, Beaver M.R., Long R.W., Solomon P.A. [Integrating sensor monitoring technology into the current air pollution regulatory support paradigm: practical considerations.](#) *American Journal of Environmental Engineering*, 4(6):147-154. 2014.

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Education:

- Ph.D., University of Wisconsin-Madison, Madison, WI; Civil & Environmental Engineering, 2005
- M.S., University of Wisconsin-Madison, Madison, WI; Civil & Environmental Engineering, 2002
- B.S., University of Rochester, Rochester, NY; Chemical Engineering, 2000

Professional Experience:Workgroups and Projects

- Rubbertown (Louisville, KY) Next-Generation Emissions Monitoring (NGEM) Demonstration Project, 2016-present
- Odor Tracking Mobile App ('Odor Explore') Project, 2017-present
- PI on Cooperative Research and Develop Agreement (CRADA) with Aeroqual, Ltd, 2017-present
- Village Green Project, 2016-present
- KC-TRAQS, 2016-present
- Sensor 3rd Party Performance Workgroup, 2017-present

Affiliations and Memberships:

- Manuscript reviewer for: Atmospheric Environment; Environmental Science & Technology; Journal of the Air & Waste Management Association; Chemosphere; Sensors.
- EPA-RTP Speakers Bureau and Educational Outreach Program, member

Awards and Honors

- EPA ORD Bronze Medal, Primary SO₂ NAAQS Integrated Science Assessment Team, 2018
- EPA OEI Bronze Medal, Smart City Air Challenge, 2017
- EPA ORD Bronze Medal, Community Air Monitoring Training Team, 2015
- EPA ORD Exceptional/Outstanding ORD Technical Assistance to the Regions or Program Offices, Developing Nitric Oxide Chemiluminescence FRM for Ozone, 2013
- EPA ORD Silver Medal, Detroit Exposure and Aerosol Research Study, 2009
- EPA ORD Bronze Medal, NERL Receptor Model Development Team, 2008
- EPA ORD Bronze Medal, Multiple Air Pollutant Study, 2007

[Science Matters: Meet EPA Researcher Rachelle Duvall, Ph.D.](#)

[Science Matters: Measuring Air Pollution in Southern California Using Low-Cost Sensors](#)

[Science Matters: EPA Combines Expertise with New Zealand Company to Advance Air Sensor Technologies](#)

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