

## Journal Articles

- Ryder O.S., DeWinter J.L., Brown S.G., Hoffman K., Frey B., and Mirzakhali A. (2020) Assessment of particulate toxic metals at an Environmental Justice community. *Atmospheric Environment: X*, 6, 100070 (STI-7173), April. Available at <https://doi.org/10.1016/j.aeaoa.2020.100070>.
- Wang, X.; Deane, G.B.; Moore, K.A.; Ryder, O.S.; Stokes, M.D.; Beall, C.M.; Collins, D.B.; Santander, M.V.; Burrows, S.M.; Sultana, C.M.; Prather, K.A. (2017) The role of jet and film drops in controlling the mixing state of submicron sea spray aerosol particles. *Proc. Natl. Acad. Sci. U.S.A.* 114 (27), 6978-6983.
- Cochran, R.E.; Ryder, O.S.; Grassian, V.H.; Prather, K.A. (2017) Sea spray aerosol: the chemical link between the oceans, atmosphere, and climate. *Accounts of Chemical Research*. 599–604.
- Ryder, O.S.; Campbell, N.R.; Morris, H.; Ruppel, M.; Tivanski, A.; Bertram, T.H. (2015) Role of organic coatings in regulating N<sub>2</sub>O<sub>5</sub> reactive uptake to sea spray aerosol. *J. Phys. Chem. A*, 119 (48), 11683–11692.
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- Ault, A.P.; Guasco, T.L.; Baltrusaitis, J.; Ryder, O.S.; Trueblood, J.; Collins, D.B.; Ruppel, M.J.; Cuadra-Rodriguez, L.A.; Prather, K.A.; Grassian, V.H. (2014) Heterogeneous reactivity of nitric acid with nascent sea spray aerosol: large differences observed between and within individual particles. *J. Phys. Chem. Lett.*, 5, 2493-2500.
- Ebben, C.; Ault, A.; Ruppel, M.; Ryder, O.; Bertram, T.; Grassian, V.; Prather, K.; Geiger, F. (2013) Size-resolved sea spray aerosol particles studied by vibrational sum frequency generation. *J. Phys. Chem. A*, 117 (30), 6589–6601.
- Prather, K. A.; Bertram, T. H.; Grassian, V. H.; Deane, G. B.; Stokes, M. D.; DeMott, P. J.; Aluwihare, L. I.; Palenik, B.; Azam, F.; Seinfeld, J. H.; Moffet, R. C.; Molina, M. J.; Cappa, C. D.; Geiger, F. M.; Roberts, G. C.; Russell, L. M.; Ault, A. P.; Baltrusaitis, J.; Collins, D. B.; Corrigan, C. E.; Cuadra-Rodriguez, L. A.; Ebben, C. J.; Forestieri S. D.; Guasco, T. L.; Hersey, S. P.; Kim, M. J.; Lambert, W.; Modini, R. L.; Mui, W.; Pedler, B. E.; Ruppel, M. J.; Ryder, O. S.; Schoepp, N.; Sullivan, R. C.; Zhao, D. (2013) Bringing the ocean into the laboratory: impacts of chemical complexity of sea spray aerosol on climate properties. *Proc. Nat. Acad. Sci. U.S.A.*, 110(19), 7550-7555.

Stokes, M.D.; Deane, G.B.; Prather, K.; Bertram, T.H.; Ruppel, M.J.; Ryder, O.S.; Brady, J.M.; and Zhao, D.A. (2013) Marine aerosol reference tank system as a breaking wave analogue. *Atmos. Meas. Tech.*, 6, 1085-1094.

Riedel, T.P.; Bertram, T.H.; Ryder, O.S.; Liu, S.; Day, D.A.; Russell, L.M.; Gaston, C.J.; Prather, K.A.; and Thornton, J.A. (2012) Direct N<sub>2</sub>O<sub>5</sub> Reactivity measurements at a polluted coastal site. *Atmos. Chem. Phys.*, 12, 2959-2968.

Bertram, T.H., Kimmel, J.R., Crisp, T.A., Ryder, O.S., Yatavelli, R.L.N., Thornton, J.A., Cubison, M.J., Gonin, M., and Worsnop, D.R. (2011) A field-deployable, chemical ionization Time-of-Flight Mass Spectrometer. *Atmos. Meas. Tech.*, 4, 1471-1479.

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## Meeting Presentations, Webinars, and Conference Proceedings

Ryder O.S. (2022) Turnkey air sensor kits for education & community engagement. Presentation given at the *2022 National Ambient Air Monitoring Conference, Pittsburgh, PA, August*, by Sonoma Technology, Petaluma, CA. STI-7706.

Ryder O.S., Lavezzo T., and McCoy W. (2022) Our planet is a classroom: using air sensors as an educational tool. Poster presented at the *Air Sensors International Conference, May 11-13, 2022, in Pasadena, CA*, by Sonoma Technology, Petaluma, CA. STI-7624.

Ryder O., Brown S., Lavezzo T., McCoy W., Duvall R., Clements A., Smoak R., Freed R., Batka S., and Young I. (2022) Air Sensors for Education & Community Engagement. Presented at the *Air & Waste Management Association, Air Quality Measurement Methods and Technology Conference, San Diego, CA, March 8-9*, by Sonoma Technology, Petaluma, CA. STI-600600-7681.

Ryder O.S., McCarthy M.C., Eisinger D.S., and Brown S.G. (2022) Recent trends in near road mobile source air toxics concentrations in the United States. Presentation given at the *10th CRC Mobile Source Air Toxics (MSAT) Workshop, February 8-10*, by Sonoma Technology, Petaluma, CA. STI-9200600-7666.

Ryder O. (2022) Empowering students: low-cost sensors for air quality and weather education. Presentation given at the *American Meteorological Society Education Conference, Denver, CO, January 24*, by Sonoma Technology, Petaluma, CA. STI-7936.

Ryder O.S., Lavezzo T., and McCoy W. (2021) Our planet is a classroom: using air sensors as an educational tool. Poster presented at the *AGU Fall Meeting, New Orleans, LA, December 13-17*, by Sonoma Technology, Inc., Petaluma, CA. STI-517300-7569.

Ryder O.S., Minor H.A., Brown S.G., Duvall R.M., Clements A.L., Freed R., Stewart K., Davidson K., and Byrd V. (2021) Design of an air sensor loan program with public libraries. Presentation prepared for the

*American Geophysical Union Fall Meeting, New Orleans, LA, December 13-17*, by Sonoma Technology, Inc., Petaluma, CA; U.S. EPA, Office of Research and Development, Research Triangle Park, NC; U.S. EPA, Region 9, San Francisco, CA; and the Los Angeles Public Library, Los Angeles, CA. STI-600600-7568.

Brown S.G., Ryder O.S., DeWinter J.L., and Hafner H.R. (2020) Apportionment of metals and particulate matter at an environmental justice community in California. Poster presented at the *2020 American Association for Aerosol Research Meeting, Virtual, October 5-9*, Sonoma Technology, Petaluma, CA. STI-7288.

Schoell B., Ryder O., and Lavezzo T. (2020) Making sense of wildfire smoke. Webinar presented for Kids Making Sense on September 17, by Sonoma Technology, Petaluma, CA. STI-7440.

Lavezzo T. and Ryder O. (2020) Kids Making Sense training. Webinar presented on July 23, by Sonoma Technology, Inc., Petaluma, CA. STI-920031-7399.

Brown S., Eisinger D., Landsberg K., Ryder O., Mukherjee A., DeWinter J., and McCarthy M. (2020) National assessment of measured near-road (NR) air quality work: sponsored by the Near-Road Air Quality Transportation Pooled Fund (TPF). Presentation given at the *U.S. Transportation Research Board 99th Annual Meeting, Washington, D.C., January 16*, by Sonoma Technology, Petaluma, CA. STI-7230.

Ryder O., McCarthy M., Mukherjee A., Brown S., and Eisinger D. (2020) Near-Road Mobile Source Air Toxics (MSATs): 2016-2018 monitoring data, analysis, and implications. Presented at the *U.S. Transportation Research Board, 99th Annual Meeting, Subcommittee on Regional and Project-Level Air Quality Innovations and Resources, Washington, D.C., January 13*, by Sonoma Technology, Inc., Petaluma, CA. STI-7224.

Ryder O.S., DeWinter J.L., Brown S.G., Hoffman K., Frey B., and Mirzakhilili A. (2019) Assessment of particulate toxic metals at an Environmental Justice community. Poster presented at the *2019 American Geophysical Union Fall Meeting, San Francisco, CA, December 9-13*, by Sonoma Technology, Inc., Petaluma, CA, and the Delaware Department of Natural Resources and Environmental Control, Dover, DE. A21G-2644, STI-7151.

Hafner H., Brown S., and Ryder O. (2019) Air toxics and heavy metals: evaluating air quality at a Maywood, California, elementary school. Presented at the *A&WMA West Coast Section Annual Conference, Diamond Bar, CA, October 17*, by Sonoma Technology, Inc., Petaluma, CA. STI-7180.

Brown S.G., Ryder O.S., DeWinter J.L., Hoffman K., and Frey E. (2019) Assessment of airborne toxic metals at an Environmental Justice community in Wilmington, Delaware. Presented at the *American Association for Aerosol Research Conference, Portland, OR, October 15*, by Sonoma Technology, Inc., Petaluma, CA, and the Delaware Department of Natural Resources and Environmental Control, Dover, DE. STI-7188.

## Formal Reports

- Ryder O.S. (2023) Spokane Clean Air Kids Making Sense Pilot Program Report. Final report prepared for the Spokane Clean Air Agency, Spokane, WA, by Sonoma Technology, Petaluma, CA, STI-7928, June 21.
- Ryder O.S. (2023) Spokane air sensor loan program guide. Prepared for Spokane Clean Air Agency, Spokane, WA, by Sonoma Technology, Petaluma, CA, STI-7919, May.
- Baldauf R., Davidson K., Sullivant S., Bailey C., Ryder O.S., Eisinger D.S., and Chazan D. (2021) Best practices for reducing near-road pollution exposure at schools. Guidebook by the U.S. Environmental Protection Agency, Washington, D.C., Sonoma Technology, Petaluma, CA, and Arup North America, San Francisco, CA, EPA-420-R-21-022, October. Available at <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1013GDE.pdf>.
- Ryder O.S., Brown S., and DeWinter J. (2021) Air quality analysis of toxic metals and particulate matter concentrations in 2019-2020 in the city of Maywood, CA - an AB-617 environmental justice community. prepared for Comite Pro Uno and Coalition for Clean Air by Sonoma Technology Petaluma, CA, STI-918090-7518, June.
- Gostic C., Scarborough C., Pavlovic N., McClure C., Miller D., Ryder O., and Wang N. (2021) Exceptional event demonstration for ozone exceedances in Clark County, Nevada: June 26, 2020. Draft report prepared for the Clark County Department of Environment and Sustainability, Las Vegas, NV, by Sonoma Technology, Inc., Petaluma, CA, STI-920053-7477, June.
- Mukherjee A., DeWinter J., Huang S., McCarthy M., Drury S., Brown S., Hafner H., and Roberts P. (2020) Review: framework for research informing the ozone secondary NAAQS. Final report prepared for the Electric Power Research Institute, Washington, DC, by Sonoma Technology, Inc., Petaluma, CA, STI-918085-7269, March 25.
- Ryder O.S., McCarthy M.C., Eisinger D.S., and Brown S.G. (2019) Ambient near-road mobile source air toxics concentrations in the United States. Final report prepared for the Texas Department of Transportation, Austin, TX, by Sonoma Technology, Inc., Petaluma, CA, STI-914206-7206, December 31.
- Mukherjee A., Ryder O., McCarthy M., Brown S., and Eisinger D. (2019) Near-road particulate pollution: PM<sub>2.5</sub>, black carbon, and ultrafine particles at U.S. near-road monitoring sites. Final report prepared for the Texas Department of Transportation, Austin, TX, by Sonoma Technology, Inc., Petaluma, CA, STI-914206-7208, December 31.
- Marrero J.E., Ryder O.S., and Roberts P.T. (2019) Summary of air quality measurements at the San Rafael Rock Quarry during the first year of air quality monitoring. Technical memorandum prepared for the Marin County Department of Public Works by Sonoma Technology, Inc., Petaluma, CA, STI-918019-7150, July 31.
- Ryder O.S., DeWinter J.L., Brown S.G., Hoffman K., and Frey B. (2019) Assessment of particulate toxic metals at an Environmental Justice community in Wilmington, Delaware. Final report prepared for the

Delaware Department of Natural Resources and Environmental Control by Sonoma Technology, Inc., 918022-7112, May 31.

## Educational Materials

Ryder O. (2021) The history of unequal air pollution distribution and Assembly Bill 617: investigating your community. Science curriculum prepared for Blue Lake Rancheria, Blue Lake, CA, by Kids Making Sense and Sonoma Technology, Petaluma, CA, STI-920304-7583, August.

Ryder O. (2021) Maker Lab: build an indoor air sensor. Science curriculum prepared for Blue Lake Rancheria, Blue Lake, CA, by Kids Making Sense and Sonoma Technology, Petaluma, CA, STI-920304-7591, August.

Ryder O. (2022) Inversion layer and pollution investigation; one way that weather impacts air pollution levels. Science curriculum activity prepared for Kids Making Sense by Sonoma Technology, Petaluma, CA, STI-517300-7669, February. Available at <https://kidsmakingsense.org/free-resources/inversion-layer-investigation/>.

Ryder O. and Blakey T. (2020) Air quality science activity series: the hunt for dust. Science curriculum activity prepared for Kids Making Sense by Sonoma Technology, Petaluma, CA, STI-517300-7386, June. Available at <https://resources.kidsmakingsense.org/the-hunt-for-dust>.

Ryder O. (2021) Quest for pollen: explore the hidden world of air pollution particles. Science curriculum activity prepared for Kids Making Sense by Sonoma Technology, Petaluma, CA, STI-517300-7524, April. Available at <https://resources.kidsmakingsense.org/quest-for-pollen>.

Ryder O. and Blakey T. (2021) Kids Making Sense: How does particulate matter affect the view. Kids Making Sense curriculum activity prepared for EarthDay.org by Sonoma Technology, Petaluma, CA, STI-517300-7520, March. Available at [https://www.earthday.org/wp-content/uploads/2021/04/EarthDay-Visibility\\_FINAL.pdf](https://www.earthday.org/wp-content/uploads/2021/04/EarthDay-Visibility_FINAL.pdf).

Ryder O.S., Minor H.A., Brown S.G., Duvall R.M., Clements A.L., and Freed R. (2020) What is in the outdoor air? Exploring particulate matter (PM) sources and air quality outdoors. Activity #1 prepared for the Los Angeles Public Library Air Sensor Loan Program by Sonoma Technology, Inc. Funded by the U.S. Environmental Protection Agency, STI-915513-7285, June.

Ryder O.S., Minor H.A., Brown S.G., Duvall R.M., Clements A.L., and Freed R. (2020) Hidden particulate matter indoors! Explore your environment. Activity #2 prepared for the Los Angeles Public Library Air Sensor Loan Program by Sonoma Technology, Inc. Funded by the U.S. Environmental Protection Agency, STI-915513-7285, June.

Ryder O.S., Minor H.A., Brown S.G., Duvall R.M., Clements A.L., and Freed R. (2020) My pollution bubble! Exploring my personal particulate matter (PM) exposure. Activity #3 prepared for the Los Angeles Public Library Air Sensor Loan Program by Sonoma Technology, Inc. Funded by the U.S. Environmental Protection Agency, STI-915513-7285, June.

Ryder O.S., Minor H.A., Brown S.G., Duvall R.M., Clements A.L., and Freed R. (2020) Advanced topics in air quality. Presentation supporting the Los Angeles Public Library Air Sensor Loan Program, funded by the U.S. Environmental Protection Agency, May. STI-915513-7283.

Ryder O.S., Minor H.A., Brown S.G., Duvall R.M., Clements A.L., and Freed R. (2020) Resource materials: Los Angeles Public Library Air Sensor Loan Program, funded by the U.S. Environmental Protection Agency. STI-915513-7283, May.