



Jonathan M. Silberstein, PhD

Air Quality Data Scientist



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Dr. Silberstein joined Sonoma Technology's Air Data Science Department in 2025. He brings five years of academic research experience and extensive expertise in designing and deploying novel measurement systems for atmospheric monitoring, source apportionment of urban aerosols, and evaluating the air quality impacts of climatic events. His work integrates atmospheric chemistry, computational modeling, field experimentation, and statistical analysis to support data-driven decision-making for identifying air pollution hotspots and mitigating exposure.

At Sonoma Technology, Dr. Silberstein contributes to a range of technical research efforts across industrial air quality, community monitoring, and wildfire and smoke analysis sectors.

He earned his PhD in Mechanical Engineering from the University of Colorado Boulder, where he conducted research in the Hannigan Lab. His doctoral work focused on identifying and characterizing localized and transient urban air pollution hotspots. He utilized a combination of low-cost sensors and advanced instrumentation, such as gas chromatography–mass spectrometry, to measure both the concentrations and chemical compositions of atmospheric pollutants. These data informed source attribution and improved understanding of the impacts of meteorological events—such as inversions and wildfires—on urban air quality.

Education

- PhD, Mechanical Engineering, CU Boulder
- MS, Mechanical Engineering, CU Boulder
- BS, Physics, The College of William and Mary

For a list of publications, see sonomatech.com/ResPub/JMSpub.pdf.

Dr. Silberstein has led several projects aimed at advancing low-cost sensor technology. He pioneered data weighting methods for sensor calibration, significantly improving the ability of these sensors to detect short-term, high-concentration pollutant spikes. He also demonstrated the value of integrating low-cost sensors with small uncrewed aircraft systems for three-dimensional pollution mapping, contributing to a more nuanced understanding of their capabilities.

He is proficient in R, Python, MATLAB, and ArcGIS, and is passionate about technical writing and science communication. Dr. Silberstein remains committed to continuous learning and professional growth as a scientist.