



Air Quality Research Center
One Shields Avenue
Davis, CA 95616

Website: aqrc.ucdavis.edu

Email: aqrcinfo@ucdavis.edu

MONITORING NETWORK OPERATIONS
SAMPLING AND ANALYTICAL SERVICES
REINVESTMENT AND RESEARCH
EVENTS

The UC Davis Air Quality Research Center provides support for teams of collaborative researchers to conduct scientific, engineering, health, social, and economic research that educates and informs planning and regulations for air quality, visibility, and climate change. The AQRC educates and informs through conferences, outreach, scholarly publications, and training grants.



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AIR QUALITY AT UC DAVIS

Since the late 1970s, UC Davis has been a leader in characterizing airborne particulate matter that impairs visibility, impacts climate, and is detrimental to health. The air quality community at UC Davis includes more than 70 faculty and researchers who are experts in a wide range of fields, including atmospheric science, epidemiology and toxicology, chemistry, engineering, and policy. The Air Quality Research Center (AQRC) provides expertise in field and laboratory techniques for particulate matter collection and measurement, and custom data analysis methods and tools.

MONITORING NETWORK OPERATIONS

Since the mid-1980s, UC Davis has played a key role in the IMPROVE (Interagency Monitoring of PROtected Visual Environments) program, a cooperative measurement effort involving the US Environmental Protection Agency (EPA), National Park Service (NPS), and other federal land managers. The AQRC oversees operation of approximately 160 particulate matter sampling sites across the country, located in National Parks, National Forests, and Wilderness Areas. Sampling equipment, designed and installed by the AQRC, are programmed to automatically collect samples of airborne particulate matter on filters. The AQRC analyzes the samples for total mass, light absorption, and elemental content. Analytical and sampling data are processed at the AQRC to determine concentrations, and concentration data are validated using custom in-house tools.

Beginning in 2015, the AQRC was awarded the analytical and data validation portion of the EPA CSN (Chemical Speciation Network) contract. The CSN consists of approximately 140 particulate matter sampling sites across the country, located in urban areas.

Data from both the CSN and IMPROVE programs are publically available through the EPA Air Quality System (AQS) at epa.gov/aqs.

REINVESTMENT AND RESEARCH

The AQRC team at UC Davis works together combining their expertise, experience, and facilities. With an active and productive research program, the AQRC focusses on new measurement techniques and technologies for the analysis of particulate matter, including collaborative efforts with NPS and EPA researchers. Additionally, AQRC researchers explore data from the IMPROVE and CSN programs to evaluate composition and trends in ambient particulate matter, and develop new data validation tools and techniques.

EVENTS

Working with a wide range of partners and sponsors, the AQRC operates an active events program, hosting domestic and international symposiums, conferences, and meetings. The AQRC specializes in events focusing on atmospheric chemistry, emissions, meteorological modeling, and sensor technology to address contemporary air quality challenges.

Learn more and check out the AQRC events schedule at aqrc.ucdavis.edu/events.

Experts in Air Quality

Local to Regional Scales Visual Air Quality and Human Health



SAMPLING AND ANALYTICAL SERVICES

The AQRC offers sampling and analytical services for particulate matter on filter substrates. Sampling services include establishment and maintenance of particulate matter sampling sites. Analytical capabilities include:

- ✓ Energy Dispersive X-Ray Fluorescence: elemental content
- ✓ FT-IR Spectroscopy: organic functional groups and organic matter
- ✓ Light Absorption Analysis: black carbon
- ✓ Thermal/Optical Analysis: elemental and organic carbon
- ✓ Gravimetric Analysis: particulate matter mass
- ✓ Data Validation and Analysis

Contact us at aqrcinfo@ucdavis.edu to learn more and request custom analytical services!