

State of California  
AIR RESOURCES BOARD  
**DUTY STATEMENT**

EMPLOYEE NAME: CURRENT DATE: 1/7/19  
CLASSIFICATION: Air Pollution Specialist POSITION #: 673-310-3887-005  
DIVISION/OFFICE: Research Division CBID: R09  
SECTION: Emission & Exposure Research  
SUPERVISOR'S NAME: Abhilash Vijayan  
SUPERVISOR'S CLASS: ARS I

**I certify that this duty statement represents an accurate description of the essential functions of this position.**

**I have read this duty statement and agree that it represents the duties I am assigned.**

\_\_\_\_\_  
Supervisor's Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Employee's Signature

\_\_\_\_\_  
Date

**SPECIAL REQUIREMENTS OF POSITION (IF ANY):**

- Designated under Conflict of Interest Code.
- Duties performed may require annual physical.
- Duties performed may require drug testing.
- Duties require participation in the DMV Pull Notice Program.
- Requires the utilization of a 32-pound self-contained breathing apparatus.
- Operates heavy motorized vehicles.
- Requires repetitive movement of heavy objects.
- Works at elevated heights or near fast moving machinery or traffic.
- Performs other duties requiring high physical demand. (Explain below)

**SUPERVISION EXERCISED (check one):**

- None
- Supervisor
- Lead Person
- Team Leader

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FOR SUPERVISORY POSITIONS ONLY: Indicate the number of positions by classification that this position DIRECTLY supervises: N/A

Total number of positions in Section/Branch/Office for which this position is responsible: N/A

FOR LEADPERSONS OR TEAM LEADERS ONLY: Indicate the number of positions by classification that this position LEADS: N/A

**MISSION OF SECTION:** The mission of the Emission and Exposure Research Section is to design, implement, analyze, and synthesize applied research studies to evaluate the emission behavior, and air pollution, exposure, and climate impacts of important air pollution emission sources (mobile sources, oil and gas activities, landfills, dairies, etc.). The Section is at the forefront of conducting next generation air pollution and climate emissions research, and is responsible for conceptualizing and coordinating the use of advanced methods including satellites, aircrafts, drones, ground-based tools like mobile platforms, remote sensing systems, flux towers, infrared imagers, as well as personal and local air monitoring systems.

Section staff are responsible for undertaking in-house research studies, and routinely participates in advanced research efforts with leading researchers from various national and state research labs, and manage important extramural research contracts. Section staff are tasked with developing complex studies involving mobile measurement platforms, remote sensing applications, and emission flux towers, and responsible for managing ground-breaking research efforts including the Statewide Methane Surveys, and the Statewide GHG Monitoring Network.

The section employs its technical expertise to identify important local and regional sources of criteria pollutants, air toxics, and greenhouse gas emissions, and support the development of air pollution and climate mitigation strategies. The Section conducts technical analyses, provides expert opinions to decision-makers, networks with national and international stakeholders, and publishes research findings.

**CONCEPT OF POSITION:** Working independently, under the general direction and supervision of the manager of the Emission and Exposure Research Section, the incumbent will be responsible for leading in-house measurement research, and will be tasked with conducting field studies as well as analytical research to help improve our understanding of air pollution sources and their long-term emission trends, and their impacts on regional and local air quality and population and personal exposures. The selected candidate will also be tasked with leading measurement and analysis efforts including emission measurements

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using stationary and mobile observations and remote sensing, air pollution monitoring at community-scale using instrumented fleets, local and personal exposure studies. The individual is expected to bring to the Section significant technical expertise in the areas of air quality, vehicle emissions, emissions measurements, air quality measurement, exposure assessment, statistical analysis, and research project management. The individual is also expected to bring significant expertise and initiative to projects advancing the agency's understanding of exposure assessment and community level monitoring, including: how to better calculate exposures; how to better provide necessary data in support of exposure assessment needs; and how to use exposure concepts to advance the agency's public health goals of reducing exposures. The individual will be expected to participate in air pollution research with innovative and cutting edge research tools like CARB's state-of-the-art mobile measurement platforms, high fidelity air pollution research analyzers, and portable and low-cost air quality sensors to study real-world emission and exposure impacts of various emission sources. The candidate will be responsible for deploying advanced research monitoring systems and air quality instruments, building measurement and data acquisition systems for novel ground-based measurement studies, as well as developing and deploying low cost sensors systems for personal and community exposure studies, and required to participate in coordinating and analyzing satellite, airborne, and ground-based measurements. The candidate will also be responsible for creating a new framework for understanding these new air pollution observations, and using innovative methods including statistics, machine and deep learning to analyze the emission and exposure impacts on regional and local population. The incumbent will also provide consultation and coordination in the development of research concepts, conduct data analysis and prepare technical research projects, journal articles, and non-technical documents.

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<b>% of Time</b>		<b>RESPONSIBILITIES OF POSITION</b>
30%	E	Initiate and conduct novel research studies to help improve our understanding of air pollution sources and their long-term emission trends, and their impacts on regional and local air quality and population and personal exposures. Develop a new framework for understanding new air pollution observations using innovative methods including statistics, machine and deep learning to analyze the emission and exposure impacts on regional and local population.
25%	E	Review and assess scientific data on emission sources, air quality, and exposure using statistical and numerical modeling, and air quality, exposure, source apportionment models. Develop guidelines, reports, and papers to inform the Board on the findings associated with independent studies on air pollution and emissions research, community level monitoring, and exposure assessment studies.
15%	E	Identify data needs and scientific needs for research; evaluate research proposals including project design and scientific value; prepare and present reports and evaluations to the Research Screening Committee; and, provide study design and statistical review for other projects managed in the Section. Review, evaluate, and direct progress of contractors, including analysis of the data obtained and its relevance to CARB policy and potential policy recommendations.
15%	E	Provide expertise in mobile measurements, high fidelity air pollution analyzers, and portable and low-cost air quality sensors to study real-world emission and exposure impacts of various emission sources.
10%	E	Prepare presentations, white papers, and articles for peer-reviewed journals based on research in air pollution, mobile and stationary source emissions, exposure assessment, and other areas related to mobile source emissions and emissions control measures.
5%	M	Maintain liaison with other CARB Divisions and other research organizations and agencies for the purpose of keeping abreast and applying relevant work to meet California's needs.