

State of California  
**Air Resources Board**  
**BOARD ITEM SUMMARY**

**ITEM # 20-7-5:      Public Meeting to Consider Research Contract with the University Of California, San Francisco Titled "Impact of Air Pollution on COVID-19 Case and Death Risk in California"**

**STAFF RECOMMENDATION:**

The California Air Resources Board (CARB or Board) staff recommends that the Board approve funding of the proposed research contract with the University of California, San Francisco Titled "Impact of Air Pollution on COVID-19 Case and Death Risk in California."

**Note:** This item is listed on the agenda due to the contract amount and to comply with Board approval requirements in Government Code section 1091, since Board Member Balmes is affiliated with the proposed contractor, the University of California, San Francisco.

**DISCUSSION:**

In a preliminary study (Wu et al.) using data from 3,000 U.S. counties across the country (98 percent of the U.S. population) Harvard investigators examined whether long-term exposure to PM<sub>2.5</sub> increased COVID-19 death risk and found that an increase in 1 µg/m<sup>3</sup> in PM<sub>2.5</sub> was related to an 8 percent increase in COVID-19 death rates. The University of California, San Francisco investigators propose a similar study using more spatially refined data on case/death counts, exposure estimates, and an expanded set of pollutants. Researchers propose to study the relationship of several air pollutants: PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub> and O<sub>3</sub>, with COVID-19 case/death rates in California. The study will focus on not only long-term exposures, but also more proximal exposures before the COVID-19 outbreak. The study will also be able to examine the risk of more severe cases of COVID-19 using hospitalization and Intensive Care Unit counts and also focus specifically on the impact of COVID-19 on environmental justice and vulnerable communities in California as well as examining the vulnerabilities due to race/ethnicity.

**SUMMARY AND IMPACTS:**

Long-term exposure to air pollution is emerging as one of the important risk factors for deaths from coronavirus disease 2019 (COVID-19) infections. Given the high levels of pollution in California and the concern for community and individual exposure to air pollution, this study is critical to be able to determine the vulnerability of Californians to COVID-19. Also, with a much higher risk of COVID-19 deaths and cases being seen in African American populations, direct attention should be given to the role of race/ethnicity and historic exposure to environmental toxicants on COVID-19 risk. Approximately \$106,000 is requested to fund this contract. Approval by the Board will authorize staff to put this contract in place to undertake the activities described in this proposal.