TITLE:	Preterm Birth, Low Birth Weight, Childhood Autism, Parkinson's and Alzheimer Disease and Air Pollution – California Studies
PRIME CONTRACTOR:	University of California, Los Angeles
SUBCONTRACTOR:	University of California, Berkeley $403,724
PRINCIPAL INVESTIGATOR:	Beate Ritz, Ph.D., M.D.
CONTRACT TYPE:	Interagency Agreement
TOTAL AMOUNT:	$998,789
CONTRACT TERM:	24 Months

I. SUMMARY

The California Air Resources Board (CARB) currently quantifies three adverse health outcomes associated with reductions in PM2.5 emissions resulting from its programs and regulations. These health endpoints are premature death from cardiopulmonary disease, hospital admissions from heart- and lung-related causes, and emergency room (ER) visits for asthma. However, scientific evidence supports the existence of additional PM2.5-related outcomes and impacts of other criteria pollutants such as ozone (O_3), as well as adverse effects of air toxics, including both cancer and non-cancer effects. Thus, in April 2020, CARB adopted Board Resolution 20-13 directing staff to expand their methodologies to include additional air pollutants and health endpoints. The proposed project will develop modeled daily air pollution surfaces at 30m spatial resolution for PM2.5, O_3, and nitrogen dioxide (NO2), as well as for six air toxics (benzene, 1,3-butadiene, chromium, lead, nickel, and zinc). The California-wide air pollution surfaces will extend from 1990 to 2019, and they will be used to investigate relationships between pollutant exposures and preterm birth (PTB), term low birth weight (TLBW), autism spectrum disorder (ASD), and Alzheimer's and Parkinson's disease (AD and PD, respectively). Economic valuations will be identified for these health impacts. These findings will inform CARB's efforts to expand its analysis of health benefits associated with its current and future programs and regulations.