State of California
AIR RESOURCES BOARD

RESEARCH PROPOSAL

Resolution 12-4

January 26, 2012

Agenda Item No.: 12-1-1

WHEREAS, the Air Resources Board (ARB) has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code sections 39700 through 39705;

WHEREAS, a research proposal, number 2729-272, entitled "Long Range Transport of Air Pollutants into California," has been submitted by the University of California, Davis;

WHEREAS, the Research Division staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

> Proposal Number 2729-272 entitled "Long Range Transport of Air Pollutants into California," submitted by the University of California, Davis, for a total amount not to exceed $499,363.

NOW, THEREFORE, BE IT RESOLVED that the Air Resources Board, pursuant to the authority granted by Health and Safety Code section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

> Proposal Number 2729-272 entitled "Long Range Transport of Air Pollutants into California," submitted by the University of California, Davis, for a total amount not to exceed $499,363.

BE IT FURTHER RESOLVED that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein, and as described in Attachment A, in an amount not to exceed $499,363.

I hereby certify that the above is a true and correct copy of Resolution 12-4, as adopted by the Air Resources Board.

Mary Alice Morency, Clerk of the Board

ATTACHMENT A

"Long Range Transport of Air Pollutants into California"

Background
Wind patterns in the Northern Hemisphere typically carry pollutants across the Pacific Ocean from Asia to North America. The natural and anthropogenic emissions in Asia contribute to the background concentrations of air pollutants in the air masses crossing California. This baseline in pollutant concentrations has been increasing and, with limited prospects for reductions in Asian emissions in the short-term, more stringent control efforts on emission sources in California may be needed if all health-based ambient air quality standards are to be attained.

Objective
The objective of this project is to establish a small monitoring network to quantify and characterize the variable ozone and particulate pollution arriving in northern California from over the Pacific Ocean.

Methods
Most of what we know about Asian transport is from short-term intermittent measurements or modeling studies. To more fully characterize air quality, particularly when ozone ambient air quality standards are exceeded, this project will make continuous measurements of ozone as well as size and composition measurements of particulate matter (PM) for two years during the extended summer season (March-October) at two remote monitoring sites in northern California. The measurements will include chemical markers previously shown to be indicative of emission sources (e.g., Asian dust, Asian pollutants, North American pollutants, forest fires, stratosphere) impacting pollutant concentrations in the air mass.

Expected Results
The measurements and data analysis associated with this project will refine the contributions of Asian transport (and other sources) to the observed ozone and particulate matter air quality in northern California.

Significance to the Board
This information is critical for ensuring that emission control efforts are sufficient to achieve ambient air quality standards and to avoid federal sanctions. In addition, the data will help define policy-relevant background (PRB) ozone concentrations in California. The results of this study will help identify the need for international emission reductions, which would avoid the imposition of additional controls on California's businesses and residents.

Contractor:
University of California, Davis

Contract Period:
36 months

Principal Investigator (PI):
Professor Anthony Wexler

Contract Amount:
$499,363

Basis for Indirect Cost Rate:
The State and the UC system have agreed to a ten percent indirect cost rate.

Past Experience with this Principal Investigator:
Professor Wexler is the Director of both the Air Quality Research Group and the Crocker Nuclear Lab at the University of California, Davis. Professor Wexler's expertise has been (and is being) used in several ARB contracts related to aerosols, ranging from instrument development, to emission source testing in the lab, to field measurements, to health effects evaluations (in lab and in different communities). The PI has published extensively and is well-respected in the research community.

Prior Research Division Funding to the University of California, Davis:

Year	2011	2010	2009
Funding	$1,394,560	$508,267	$1,588,387

BUDGET SUMMARY

Contractor: University of California, Davis

"Long Range Transport of Air Pollutants into California"

DIRECT COSTS AND BENEFITS			
1.	Labor and Employee Fringe Benefits	$ 189,779	
2.	Subcontractors	$ 0	
3.	Equipment	$ 87,816[1]	
4.	Travel and Subsistence	$ 22,250	
5.	Electronic Data Processing	$ 0	
6.	Reproduction/Publication	$ 0	
7.	Mail and Phone	$ 3,000	
8.	Supplies	$ 35,881	
9.	Analyses	$ 102,400[2]	
10.	Miscellaneous	$ 20,824	
	Total Direct Costs		$461,950
INDIRECT COSTS			
1.	Overhead	$ 37,413	
2.	General and Administrative Expenses	$ 0	
3.	Other Indirect Costs	$ 0	
4.	Fee or Profit	$ 0	
	Total Indirect Costs		$ 37,413
TOTAL PROJECT COSTS			**$499,363**

[1] Estimated cost of a continuous analyzer measuring CO and multiple greenhouse gases (H_2O and CO_2, CH_4, or N_2O) for confirming stratospheric intrusion (tropopause folding) events.

[2] Laboratory costs of analyzing elemental composition of more than 61,000 filter samples.