State of California
AIR RESOURCES BOARD

RESEARCH PROPOSAL

Resolution 08-1

January 24, 2008

Agenda Item No.: 08-1-2

WHEREAS, the Air Resources Board 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 2641-258, entitled "Economic Value of Reducing Cardiovascular Disease Morbidity," has been submitted by San Diego State University Research Foundation, in response to RFP No. 07-301;

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 2641-258 entitled "Economic Value of Reducing Cardiovascular Disease Morbidity," submitted by San Diego State University Research Foundation, for a total amount not to exceed $392,036.

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 2641-258 entitled "Economic Value of Reducing Cardiovascular Disease Morbidity," submitted by San Diego State University Research Foundation, for a total amount not to exceed $392,036.

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 $392,036.

I hereby certify that the above is a true and correct copy of Resolution 08-1, as adopted by the Air Resources Board.

Lori Andreoni

Lori Andreoni, Clerk of the Board

ATTACHMENT A

"Economic Value of Reducing Cardiovascular Disease Morbidity"

Background
Biological and epidemiological research continues to uncover new associations between airborne pollutants and human health. Recent health effects studies provide evidence that pollution exposure is a risk factor for developing cardiovascular disease, not just for aggravating existing disease. This is an extremely serious health risk and one that will be important to include in benefits assessment for pollution control.

Previous health benefits analyses have estimated cost of illness (COI) values for cardiovascular hospitalizations and heart attacks, based on medical costs and work loss during the episode. However, these episodes represent only a small component of an entire lifetime profile of cardiovascular disease. The economic significance (in terms of the monetary value of the total effect on the well-being of the affected individuals) of reducing the chances that cardiovascular disease will develop is probably significantly understated by the monetary estimates currently used in health benefits analysis.

Objective
This study uses willingness-to-pay (WTP) methodology to estimate the individual's economic valuation of avoiding a lifetime of cardiovascular disease morbidity.

Methods
The study team will design, implement, and analyze a WTP survey that develops a monetary estimate of individual WTP to reduce the risk of developing cardiovascular disease. Maximum WTP for an individual reflects how much of other goods and services the individual is willing to give up to obtain a reduction or prevent an increase in adverse health effects. This yields a dollar measure of the change in well-being that the individual expects to experience. The WTP is usually estimated using a survey method.

Expected Results
The results of the study will help ARB and others improve and extend their quantitative estimates of the benefits of air pollution control by providing economic values for reducing risks of a serious morbidity endpoint that has not been previously included in these assessments. The proposed study will obtain the empirical information needed to do so.

Significance to the Board
Recent health effects research points toward air pollutants as risk factors for the onset of several chronic respiratory and cardiovascular illnesses. These include cardiovascular disease, asthma onset, and permanent lung function decrements. This project will make an important contribution to better quantifying the health benefits of air pollution control in California, because there are no WTP estimates, or even very good COI estimates, for lifetime cardiovascular disease morbidity.

Contractor:
San Diego State University (SDSU) Research Foundation

Contract Period:
27 months

Principal Investigator (PI):
Professor Mark Thayer

Contract Amount:
$392,036

Basis for Indirect Cost Rate:
The San Diego State University Research Foundation's federally-negotiated rate for research projects is 49.5% of modified total direct cost (MTDC), however, the Foundation has agreed to reduce its indirect cost rate to 26% MTDC in support of this project.

Past Experience with this Principal Investigator:
The study team includes principal investigator Prof. Mark Thayer of SDSU and Lauraine Chestnut of Stratus Consulting Inc., who previously worked together to fulfill ARB Contract No. 99-329, The Economic Value of Respiratory and Cardiovascular Hospitalizations, in 2003.

Prior Research Division Funding to SDSU:

Year	2007	2006	2005
Funding	$0	$0	$0

BUDGET SUMMARY

San Diego State University Research Foundation

Economic Value of Reducing Cardiovascular Disease Morbidity

DIRECT COSTS AND BENEFITS			
1.	Labor and Employee Fringe Benefits	$ 91,474	
2.	Subcontractors	$247,736[1]	
3.	Equipment	$ 0	
4.	Travel and Subsistence	$ 4,500	
5.	Electronic Data Processing	$ 0	
6.	Reproduction/Publication	$ 0	
7.	Mail and Phone	$ 1,050	
8.	Supplies	$ 4,500	
9.	Analyses	$ 0	
10.	Miscellaneous	$ 0	
	Total Direct Costs		$349,260
INDIRECT COSTS			
1.	Overhead	$ 42,776	
2.	General and Administrative Expenses	$ 0	
3.	Other Indirect Costs	$ 0	
4.	Fee or Profit	$ 0	
	Total Indirect Costs		$42,776
TOTAL PROJECT COSTS			**$392,036**

[1] Stratus Consulting, Inc. ($112,090) will work collaboratively with SDSU and will lead the design of the valuation survey instrument. Stratus Consulting will also collaborate on survey data analysis and report writing.

Knowledge Networks Inc. ($122,646) will take primary responsibility for implementing the willingness-to-pay survey, data entry and for preliminary analyses of survey results.

Dr. James Murdoch ($10,000) will provide econometric expertise for use in designing and estimating the empirical models.

TBN ($3,000) will provide survey review.

Attachment #1

SUBCONTRACTORS' BUDGET SUMMARY

Subcontractor: Stratus Consulting Inc.

Stratus Consulting, Inc. will work collaboratively with SDSU and will lead the design of the valuation survey instrument. Stratus Consulting will also collaborate on survey data analysis and report writing.

DIRECT COSTS AND BENEFITS			
1.	Labor and Employee Fringe Benefits	$ 103,490	
2.	Subcontractors	$ 0	
3.	Equipment	$ 0	
4.	Travel and Subsistence	$ 2,400	
5.	Electronic Data Processing	$ 0	
6.	Reproduction/Publication	$ 0	
7.	Mail and Phone	$ 400	
8.	Supplies	$ 800	
9.	Analyses	$ 0	
10.	Miscellaneous	$ 5,000	
	Total Direct Costs		$112,090
INDIRECT COSTS[1]			
1.	Overhead	$ 0	
2.	General and Administrative Expenses	$ 0	
3.	Other Indirect Costs	$ 0	
4.	Fee or Profit	$ 0	
	Total Indirect Costs		$0[1]
TOTAL PROJECT COSTS			**$112,090**

Attachment #2

[1] Indirect costs are included in hourly labor rates.

SUBCONTRACTORS' BUDGET SUMMARY

Subcontractor: Knowledge Networks, Inc.

Knowledge Networks Inc. will take primary responsibility for implementing the willingness-to-pay survey, data entry and for preliminary analyses of survey results.

DIRECT COSTS AND BENEFITS			
1.	Labor and Employee Fringe Benefits	$ 36,604	
2.	Subcontractors	$ 0	
3.	Equipment	$ 0	
4.	Travel and Subsistence	$ 0	
5.	Electronic Data Processing	$ 0	
6.	Reproduction/Publication	$ 0	
7.	Mail and Phone	$ 0	
8.	Supplies	$ 0	
9.	Analyses	$ 0	
10.	Miscellaneous	$ 56,975[1]	
	Total Direct Costs		$93,579
INDIRECT COSTS			
1.	Overhead	$ 16,189	
2.	General and Administrative Expenses	$ 0	
3.	Other Indirect Costs	$ 12,878	
4.	Fee or Profit	$ 0	
	Total Indirect Costs		$29,067
TOTAL PROJECT COSTS			**$122,646**

[1] Miscellaneous costs include $50,075 for Knowledge Networks panel utilization (1000 interviews @ $50+).