

BOARD MEETING DATE: March 7, 2008

AGENDA NO.

PROPOSAL: Annual Meeting of the Brain & Lung Tumor and Air Pollution Foundation

SYNOPSIS: This item is to conduct the annual meeting of the Brain & Lung Tumor and Air Pollution Foundation. The Foundation staff will present an annual report detailing the research supported by the Foundation over the past year, the Foundation's plans for the future, and a financial report.

COMMITTEE: Not Applicable

RECOMMENDED ACTIONS:

Receive and file the annual report and ratify the Foundation disbursements described in the annual report.

Barry R. Wallerstein, D.Env.
Executive Officer

KRW:vmr

2007 Annual Report

1. Background

In February, 2003, the Board established the Brain Tumor and Air Pollution Foundation. In March, 2004 the Foundation amended its Articles of Incorporation to change its name to Brain & Lung Tumor and Air Pollution Foundation (Foundation) and to specify that its purpose is related to the effects of air pollution on brain tumors and lung cancer. The mission of the Foundation is to support research studies on the association between air pollution and brain and lung tumors, as well as research for the development of novel therapeutics for such tumors. To carry out its purpose, the Foundation has funded research projects investigating the links between air pollution and brain and lung tumors. The dollar amount of the funding provided to date is \$2,237,590. The projects are described in greater detail below.

2. Directors and Officers

The Directors of the Foundation are: Michael D. Antonovich, Chairman
Robert Davidson, Vice Chairman
Bill Campbell
Gary Ovitt
Dennis Yates

The Foundation's staff is: Barry Wallerstein, Chief Executive Officer
Tania Christman, Secretary
Rick Pearce, Treasurer

Report on the Foundation's Activities and Plans

Research Projects Funded to Date and Progress

- A. Grant BTAP001: "Brain Tumors and Air Pollution"
Principal Investigator: Dr. Keith Black, Cedars Sinai Medical Center
Funding: \$559,250

The purpose of this grant was to investigate the biochemical and pathological changes in brain tissue of laboratory animals exposed to air pollutants, and whether any observed changes may be linked to formation and growth of tumors. The pollutants studied are ambient particulate matter, including coarse, fine, and ultrafine particulates, and toxic air contaminants that may be linked to brain tumor risk. Analyses include gene expression and tissue morphology changes.

This project has been completed, and the results were presented to the AQMD Governing Board in June, 2005. The findings from the animals exposed to ambient particulates indicate that the activities of some genes are altered in brain cells. One of these genes is related to production of a growth factor. These results, though preliminary, are intriguing and indicate that exposures to particles may be associated with alteration of cell regulation that could theoretically be associated with a pathway to cancer.

- B. Grant BTAP002: "Brain Tumor and Air Pollution: Studies of Existing Data"
Principal Investigators: Dr. Susan Preston-Martin and Dr. John Peters, USC School of Medicine
Funding: \$158,340

This project consists of two parts. One is to analyze existing data on cause of mortality and air pollution levels from a national cohort of individuals that the American Cancer Society (ACS) has been following for over 20 years. Previous

analysis of this database revealed that particulate levels were associated with an increased risk for lung cancer and cardiovascular disease. The task for the grant is to conduct a similar analysis for brain cancer deaths.

This portion has been completed, no elevated risks for measures of ambient air pollution were found.

The second component of the proposed study is to conduct an epidemiology study of exposure to air pollutants and the incidence of brain tumors in children living in the South Coast Air Basin. There were insufficient funds at the time of the project award to fund the complete proposal. This project received partial funding from the Foundation to cover the collection of data on children's brain tumor incidence in the AQMD's four-county area; and the preparation of this data for possible future study of the correlation of tumor incidence with past air pollution exposures should additional funding become available.

The acquisition of data on children's brain tumor incidence has been completed, and have been prepared in a format suitable for possible future study of the correlation of tumor incidence with past air pollution exposures.

Dr. Susan Preston-Martin, the original Principal Investigator, has retired. The project has continued under the direction of Dr. John Peters, the Co-Principal Investigator, and Dr. Roberta McKean-Cowdin.

The researchers have conducted a preliminary analysis on the association of childhood brain tumor diagnoses from 0-5 years of age for the data set collected for the period 1991 – 2002, and ambient levels of PM2.5. The PM2.5 exposures were estimated at the zip code level for the residence at birth using a GIS based extrapolation of available monitoring data. The initial results indicate an elevated risk for brain tumor risk associated with the estimated PM2.5 levels. This should be considered a preliminary result, and is subject to confirmation with further analyses.

The researchers have proposed to extend the analysis to a larger set of data, use the address at birth rather than zip code to estimate exposure, and to also include a metric for proximity to traffic in the analyses.

- C. Grant BTAP003: "Brain Tumors and Air Pollution"
Principal Investigator: Dr. Keith Black, Cedars Sinai Medical Center
Funding: \$1,500,000

Based on the results of the initial research project with Cedars-Sinai Medical Center, the Foundation Board approved this follow-up study. The project focuses on longer exposure periods to particulates and toxics. The exposures were conducted by the

U.C. Irvine Air Pollution Health Effects Laboratory and have been completed. The laboratory analyses are continuing and are expected to be completed by July 2008.

- D. Grant BTAP004: “Brain Tumors and Air Pollution: Studies with Existing Data.
Principal Investigator: Dr. Roberta McKean-Cowdin, USC School of Medicine
Funding: \$20,000

Additional funding was awarded to USC to continue the study of exposures to air pollution and risk of brain tumors in children. This project is an add-on to the work done in BTAP002, and will incorporate the distance of residence of brain tumor patients to roadways into the previously collected data base. This will be used to assess exposure to traffic emissions should additional funding become available.

3. Financial Report

As of December 31, 2007, the Foundation had a cash balance of \$2,996. Following is an accounting of the Foundation’s operations since its inception (7/23/03):

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Revenue from Operations	
Contributions	\$ 2,222,568
Interest Income	22,789
Total Revenue from Operations	\$ 2,245,357
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Operating Expenses	
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Grants Awarded	
-Cedars-Sinai	\$ 2,059,250
-USC	\$ 178,340
Corporation Filing Costs	\$ 790
Bank charges	\$ 381
Professional fees-audit	\$ 3,600
Total Operating Expenses	\$ 2,242,361
Cash Balance	\$ 2,996
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4. Plans for Upcoming Year

The Foundation will continue monitoring the progress of existing research projects. The Foundation will evaluate new projects and provide funding to the extent that additional funds become available.