

BOARD MEETING DATE: April 5, 2013

AGENDA NO. 30

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 a summary of the research supported by the Foundation over the past year, the Foundation's plans for the future, and a financial report.

COMMITTEE: No Committee Review

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:drw

2013 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 \$4,722,568. The current projects are described below.

2. Directors and Officers

The Directors of the Foundation are:

Michael D. Antonovich, Chairman
Dennis Yates, Vice Chairman
Josie Gonzales
Dr. Thomas Godfrey

The Foundation's staff is:

Barry R. Wallerstein, Chief Executive Officer
Denise Whitcher, Secretary
Michael O'Kelly, Treasurer

3. Report on the Foundation's Activities

Current Research Projects

In 2010 the Foundation Board accepted \$1,000,000 from the SCAQMD's Health Effects Research Fund, and approved funding for the following project.

The Impact of Air Pollution on Brain Stem Cell Activation
Principal Investigator: Keith Black, M.D., Cedars Sinai Medical Center
Approved Funding: \$1,000,000
Funding Allocated to Date: \$1,000,000

This project was approved by the Foundation Board in October, 2010 as a follow up to previous laboratory studies conducted by Cedars Sinai. In the current study, laboratory animals are exposed to ambient particulate matter, including ultrafine particles, for additional investigation of the stem cell activation into cancer precursor cells. The elucidation of such molecular pathways involved in survival, proliferation and differentiation of cancer stem cells may be fundamental information to help develop therapies for brain tumors and to develop potential preventive measures. The research is being done in collaboration with the UC Irvine School of Medicine. A summary of activities is presented below.

Normal and tumor human brain tissue was assessed for stem cell markers for biochemical pathways related to tumor formation. Results showed that the expression of the evaluated stem cell markers along with an angiogenic marker correlates with an increase in grade of malignancy. The differential expression of the angiogenic marker in tumor and normal brain samples suggests an association with tumor progression.

Laboratory mice were exposed to particulate matter for one, three, and six months. The tissues from these exposures are being analyzed for expression of pathways that may be related to tumor formation, including stem cell markers and the angiogenic marker. A report of findings is expected in 2013.

Publications:

Ljubimova JY, Gangalum PR, Portilla-Arias J, Patil R, Konda B, Paff M, Markman J, Inoue S, Espinoza A, Chesnokova A, Kleinman M, Holler E, Black KL. Molecular Changes in Rat Brain Due to Air Nano Pollution. NSTI-Nanotech, www.nsti.org, ISBN 978-1-4665-6276-9, vol.3: 261-263, 2012

Ljubimova, Julia Y, Michael T Kleinman , Natalya M Karabalin, Satoshi Inoue, Bindu Konda, Alexander V Ljubimov, Keith L Black. Gene expression changes in rat brain after acute and chronic exposures to particulate matter in Los Angeles basin air: Correlation with human brain tumors, Submitted to Brain Research Bulletin, 2012

4. Financial Report

As of February 28, 2013, the Foundation had a cash balance of \$561,722. Following is an accounting of the Foundation's operations since its inception (7/23/03):

Revenue from Operations	
Contributions	\$ 4,722,568
Interest Income	\$ 38,881
Total Revenue from Operations	\$ 4,761,449
Operating Expenses	
Grants Awarded	
-Cedars Sinai	\$ 3,809,250
-USC	\$ 377,967
Corporation Filing Costs	\$ 1,180
Bank charges	\$ 530
Professional fees-audit	\$ 10,800
Total Operating Expenses	\$ 4,199,727
Cash Balance	\$ <u>561,722</u>

5. 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.