

Application for Renewal of Research Grant
Application For Research Grant

Date: 12/23/55

1. Name of Investigator: Herbert R. Hawthorne, M. D.

2. Title: Chairman, Department of Surgery, Graduate School of Medicine, University of Pennsylvania; Professor of Surgery, Graduate School of Medicine, University of Pennsylvania, and Chief of Surgical
3. Institution Service, Graduate Hospital of the University of Pennsylvania.
& Address: Graduate School of Medicine, University of Pennsylvania, 237 Medical Laboratories Bldg., University of Pennsylvania, Philadelphia 4, Penna., and the Graduate Hospital of the University of Pennsylvania, 19th and Lombard Sts., Philadelphia 46, Pa.
4. Project or Subject:
The Attempted Production of Pulmonary Neoplasms in Experimental Animals by Exposure of the Tracheo-bronchial System to Tobacco Smoke.

5. Detailed Plan of Procedure (Use reverse side if additional space is needed)(See also Progress Report of 12-55)

A colony of 42 healthy adult, female, mongrel dogs has been established. Baseline studies on these animals included an x-ray examination of the chest, and an endoscopic examination of the trachea and main bronchi under general anesthesia. Then tracheostomies were constructed and patency of the stomas has been maintained by silver cannulas. These animals have received passive immunization against canine distemper and hepatitis. In order to assure long-term survival, their diets and weights are carefully observed by the veterinarian where they are housed. The housing consists of large permanent cages, and each three animals have a large outdoor run to maintain normal health and assure long-term survival so vital in an experiment of this nature. Each animal is observed by the veterinarian daily for the presence of any evidence of illness. If any is present the animal is treated accordingly.

A smoking robot has been constructed according to our specifications by the Drummond Scientific Instrument Company of Philadelphia and is in operation. This is a multiple unit smoker. It handles 8 animals simultaneously. Each animal is connected to a unit consisting of a piston type smoker and receives smoke derived from 1 cigarette at a time. The

6. Budget Plan:

(See more detailed breakdown on Appendix, Page 2.)

Salaries	\$11,400
Expendable Supplies	16,360
Permanent Equipment	2,000
Overhead	5,130
Other	
Total	\$34,890

7. Anticipated Duration of Work: Thirty-six months.

8. Facilities and Staff Available:

- a. Harrison Department of Surgical Research of the University of Pennsylvania.
- b. The Tumor Clinic of the Veterinary School of Medicine of the University of Pennsylvania (an animal pathologist is available.).
- c. The Tumor Clinic of the Graduate Hospital of the University of Pennsylvania.
- d. The Research Division of the Bronchology Department of the Graduate School of Medicine of the University of Pennsylvania. (William A. Lell, M. D., Associate Professor of Broncho-esophagology,

9. Additional Requirements:

(see bottom of page)

A more ideal experiment would require additional study animals. This is not possible under the above budget. If more study animals are added the budget requirements would have to be supplemented accordingly.

10. Additional Information (Including relation of work to other projects and other sources of supply):

See Progress Report, December, 1955.

8. (Cont'd)

Graduate School of Medicine of University of Pennsylvania is actively participating in this project.)

- e. The Research Division of the Radiology Department of the Graduate Hospital of the University of Pennsylvania. (George N. Stein, M. D., Assistant Professor of Radiology, Graduate School of Medicine of University of Pennsylvania is actively participating in this project.)
- f. Research Associate in the project is Alfred S. Frobese, M. D., Associate Professor of Surgery, Graduate School of Medicine, University of Pennsylvania.
- g. Research Fellow is Howard Graham, M. D.

Signature Herbert D. Hawthorne
Director of Project

approved:

Norman H. Topping
Business Officer of the Institution
Norman H. Topping, M.D.
Vice-President for Medical Affairs

6. Detailed Breakdown of Budget Plan

Salaries:

a. Research Associate	\$ 4,800 per annum	
b. Full time Research Fellow	3,600 per annum	
c. Full time technical ass't.	2,600 per annum	
d. Part time animal attendant in second animal room at Graduate Hospital	400 per annum	
	<u>\$11,400</u>	\$11,400.00
e. Overhead (45% of salaries)	\$ 5,130	\$ 5,130.00

(Note: These employees are on the present payroll of this project at the above salaries.)

Expendable Supplies:

Research animals	\$ 100.00	
Tobacco (600 cartons of cigarettes)	1,300.00	
Drugs (antidistemper, antihepatitis vaccine, antihelminthetics, antibiotics, anesthetic agents)	300.00	
X-ray supplies	560.00	
Small tools	300.00	
Equipment for cleaning smoking robots, tracheotomy tubes, etc.	200.00	
Glassware and connecting tubes	200.00	
Physician services in x-ray interpretation and technical help	400.00	
Services of bronchologist	500.00	
One year's housing and board for 42 animals at 80¢ per day. (These animals are at present housed in kennels at this rate.)	12,300.00	
Food for animals at temporary kennel. When animals are at Graduate Hospital.	200.00	
	<u>\$16,360.00</u>	\$16,360.00

Permanent Equipment:

Replacement tracheotomy tubes, 20 @ \$15.00 each	\$ 300.00	
Temperature recording equipment	1,700.00	
	<u>\$ 2,000.00</u>	\$ 2,000.00
	Total	<u>\$34,890.00</u>

Note: This is a realistic breakdown of expenditures at present cost of operating this project as it is set up. Any less funds would necessarily curtail part of the program.

6. (Cont'd)

It is anticipated that there will be a surplus or residium of approximately \$4000.00 from this past year's grant from the Tobacco Industry Research Committee. These funds will not have been spent by February 1, 1956. It is requested that they be allowed to remain with us and carried over for use in 1956.