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# OXYGEN TOXICITY AND RADIATION INJURY TO THE PULMONARY SYSTEM

A THESIS SUBMITTED FOR THE  
DEGREE OF DOCTOR OF PHILOSOPHY

BY

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## FOREWORD

These studies have taken a number of years to complete, but the findings remain relevant.

This work commenced almost 20 years ago, when I left Australia to work at the University of Iowa in full-time bench research. At that stage I had completed my FRACP, and had completed clinical training in pulmonary diseases. After two years at the University of Iowa, I returned to South Australia to a full time staff physician post in Thoracic Medicine at the Royal Adelaide Hospital. Research was discouraged within the Department of Thoracic Medicine, with clinical work being given absolute priority. Nevertheless, I wrote two seed grants that were funded by external bodies, and continued to pursue some of the unfinished work from Iowa. Mr. Grantley Gill, Reader in Surgery, generously provided laboratory space for me at the University of Adelaide. I established a small laboratory and continued observations in human PAM function.

I was successful with NH&MRC funding, and laboratory space in the Hanson Center, within the Royal Adelaide Hospital, was then made available to me. With limited time available for research, I put effort into supporting my own Ph.D. students and Advanced Trainees in Thoracic Medicine, including providing external funding support for salaries and consumables where necessary, as well as daily supervision.

At about this time, I also realized that a larger funding base for lung research in Australia was required. To that end I established the Australian Lung Foundation, with support of colleagues within the Thoracic Society of Australia and New Zealand, the British Lung Foundation, and Bedford Industries in South Australia, as well as business friends and associates. This effort, which I had to initiate from the very beginning, in an Australian economy during a downturn in economic activity, was much greater than I had realized at the beginning, taking six very full years of constant hard work. The result is a solid well-

organized research funding body for the benefit of all in Australia. The Australian Lung Foundation is now a very active supporter of lung research in Australia. However, this effort did greatly restrict the time available for my own thesis preparation.

However, I did finally take accumulated vacation time, and over this 3 month period, finished most of the statistical calculations. At that point I was ready to complete my thesis, but unfortunately I developed a malignant soft tissue sarcoma. This required wide surgical excision, and subsequent extensive radiation therapy. This further reduced my efforts towards my own Ph.D. thesis presentation, although I continued very actively supporting my own Ph.D. students, and Advanced Trainees in Pulmonary Medicine. Indeed, it took several years to regain excellent health after this serious illness. Even at this time, the active discouragement of my research continued in the Department of Thoracic Medicine at the Royal Adelaide Hospital.

Throughout all of this period, I did continue with a strong time and effort commitment to community service through volunteer work with the St John Ambulance Brigade, as Corp Surgeon in South Australia.

I feel very fortunate to have been able to complete my thesis, by virtue of recently being in a very supportive environment in the Pulmonary Division at the University of Iowa. In this environment I am currently very well funded with external grants and am actively pursuing several of the areas arising from this thesis.