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ARTHUR C. GUYTON, M.D. (1919-2003)

GUYTON'S LEGACY

Professor Arthur C. Guyton has been considered a major force in physiology, not only in the United States, but in the world. First, his physiology textbook was and is the leading physiology textbook in the world. Secondly, Prof. Guyton thought that physiological systems should be explained by applying mathematics, physics and engineering principles to physiological research models. This was done in other laboratories as well, but his insistence on quantitation produced an amazing number of excellent scientists in Jackson, Mississippi who used quantitative and mathematical models in order to evaluate and describe their findings in different physiological experimental models.

Thirdly, Prof. Guyton trained many, many students and postdoctoral fellows who later became chairs of physiology departments at various medical schools and also presidents of the American Physiological Society (APS), including Allen Cowley*, Harris Granger, Neil Granger, Kichi Sagawa, Carl Jones, Elvin Smith, Gabriel Navar*, Vernon Bishop*, John Hall* and myself* (* denotes past presidents of APS), and some of these and other students became presidents of other national and international scientific societies.

Dr. Guyton's father was the first dean of the University of Mississippi Medical School, so medicine training in Mississippi is a direct

result of Arthur's father's influence throughout the USA and also the world. Prof. Guyton was one of the first to recognize the importance of the lymphatic system in removing transcapillary filtration as a safety factor against pulmonary and tissue edema and also removed proteins from the tissues. Several of Prof. Guyton's students used lymph and lymph flux to expand our knowledge of the permeability properties of the microcirculation in different organs, and they also determined the various factors that prevent and/or produce tissue edema.

Interestingly, my last student, Dr. Timothy Moore, who is now at Johns Hopkins, also studied the inflammatory system in lungs subjected to periods of ischemia and reperfusion, which required an evaluation of the cytokine and chemokines carried in lymph that are involved in producing I/R endothelial changes. So, Prof. Guyton's influence on the use of lymph in physiological sciences continues.

Finally, the International Society of Lymphology was very important for several of Prof. Guyton's students, since we were allowed to attend the meetings, and also to meet the many outstanding lymphatic scientists throughout the world who were very influential in helping us to develop our research projects.

Unfortunately, Dr. Guyton and his wife were killed in an automobile accident in April of 2003. However, this marriage was also a most productive one, since all ten of their children became physicians and several are now chairs of medicine departments at various medical schools throughout the USA. As one assesses the Guytons' contributions to medicine and physiological sciences, they have no equal. Medicine and physiological sciences will continue to be blessed with his books, students, children and co-workers for many years to come. Dr. Guyton's career is absolutely unique, and his contributions to the microcirculation will continue for years to come in physiology and medicine — what a career, what an individual, what a wonderful mentor!

For all of these students, myself and my students too, I want to thank the many outstanding lymphologists for helping us to become better scientists and allowing us to use your knowledge and expertise in order to better understand the physiology of the microcirculation/lymphatic system.

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