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Dr. Arthur Guyton, Author and Researcher, Dies at 83

By STUART LAVIETES

r. Arthur C. Guyton, the author of one of the world's most widely used medical textbooks, a researcher who made significant contributions to the understanding of hypertension and who was the father of 10 Harvard-educated doctors, died in an automobile accident near his home in Jackson, Miss., on April 3. He was 83.

His wife of 59 years, Ruth, was injured in the crash and died on Thursday at the University of Mississippi Medical Center. She was 80.

A graduate of Harvard Medical School, Dr. Guyton turned to teaching and research after contracting polio in 1946 in his surgical residency at Massachusetts General Hospital. Suffering paralysis in his right leg, left arm and both shoulders, he spent nine months in Warm Springs, Ga., then returned home to Mississippi to join the faculty of the medical school at the University of Mississippi.

He published his Textbook of Medical Physiology in 1956. Based on his classroom lectures, it provides one of the foundations of medical education and explains in detail the functioning of the organs.

One of the rare medical books written by one author, it is now in its 10th edition and has been translated into 15 languages. Recent editions have been updated by his former student and successor as chairman of the physiology department at the University of Mississippi Medical Center, Dr. John E. Hall.

Dr. Guyton helped clarify the workings of the cardiovascular system through his research into the causes of high blood pressure. In the 1950's, he overturned the conventional wisdom that the heart controlled the amount of blood pumped, demonstrating that cardiac output is instead determined by body tissues' need for oxygen.

In 1966, he used a computer model to establish that the kidneys are the important long-term controllers of blood pressure and that other systems regulate pressure only over the short term.

Arthur Clifton Guyton was born in Oxford, Miss., to Dr. William S. Guyton, an ophthalmologist and dean of the University of Mississippi medical school, and Kate S. Guyton, a math and physics teacher who had been a missionary in China before their marriage.

Arthur Guyton received his undergraduate degree from the University of Mississippi and served in the Navy in World War II.

As the father of 10 children, Dr. Guyton had a family life that was every bit as busy as his professional one. A 1982 article in Reader's Digest, "A Doctor Who's Dad to Seven Doctors — So Far!," described the many family projects that he led, including the design and construction of the family's house and swimming pool.

When asked why all of the Guyton children had decided to go into medicine, David, the eldest, said, "Daddy never lectured us about medicine: He stimulated our interest."

Thomas, the ninth child, said, "He instilled the work ethic in all of us, but I think I learned most from his disability."

There were, of course, other motivating factors.

In a 1993 article in Harvard Magazine celebrating his father's 50th reunion and the graduation of his youngest sibling from medical school, Douglas, the seventh child, admitted: "The pressure on me was intense. I can only imagine what it must have been like for the three youngest."

The Guyton children are David, of Baltimore; Robert, of Atlanta; John, of Durham, N.C.; Steven, of Seattle; Catherine Greenberger of Sewickley, Pa.; Jean Gispen of Oxford, Miss.; Douglas, of Reno; James, of Memphis; Thomas, of Memphis; and Gregory, of Baltimore.

The young men all received their medical degrees from Harvard; Catherine Greenberger received hers from the University of Miami after earning a bachelor's and doctorate in organic chemistry from Harvard, and Jean Gispen graduated from the Duke University medical school after finishing her undergraduate work at Harvard.

Dr. Guyton is also survived by a sister, Ruth Smith of Frederick, Md.; a brother, William, of Austin, Tex.; 32 grandchildren; and 2 great-grandchildren.

Dr. Guyton received many honors, including awards from the American Medical Association, the American Heart Association and medical organizations in Russia, Japan and the Netherlands.

He told Harvard Magazine that one held special meaning for him: the 1978 invitation from the Royal College of Physicians in London to deliver a lecture honoring the 400th anniversary of the birth of William Harvey, the doctor who first described the circulation of blood.