

By: Senator(s) Dawkins, Tollison, Frazier,
Browning, Bryan, Burton, Chaney, Clarke,
Dearing, Gordon, Horhn, Jackson (15th), King,
Kirby, Little, Mettetal, Michel, Morgan,
Posey, Robertson, Ross, Thames

To: Rules

SENATE CONCURRENT RESOLUTION NO. 507

1 A CONCURRENT RESOLUTION COMMENDING THE LIFE AND LEGACY OF
2 RESEARCH OF WORLD-RENOWNED MISSISSIPPI PHYSIOLOGIST DR. ARTHUR
3 GUYTON, AND EXPRESSING THE SYMPATHY OF THE LEGISLATURE FOR HIS
4 UNTIMELY DEATH.

5 WHEREAS, Dr. Arthur C. Guyton, 83, Professor Emeritus of
6 Physiology and Biophysics at the University of Mississippi Medical
7 Center, died April 3, 2003, in an automobile accident; and

8 WHEREAS, Dr. Guyton was chairman of the Department of
9 Physiology and Biophysics at the Medical Center from 1955 until
10 his retirement in 1989. Considered one of the world's leading
11 physiologists, he is recognized for three major discoveries of the
12 cardiovascular system. In the 1950's, he overturned the
13 conventional wisdom that the heart controlled the amount of blood
14 pumped or "cardiac output." He demonstrated that the need of body
15 tissues for oxygen determined cardiac output and called this
16 concept the "permissive heart." He also measured the pressure of
17 the interstitial fluid between cells that makes up about one-sixth
18 of the body, a pressure that no one had been able to measure.
19 These contributions were key to understanding clinical conditions
20 such as congestive heart failure. In 1966, an early computer
21 model led to his theory of "infinite gain," which gave the kidney
22 preeminence as the long-term regulator of blood pressure; and

23 WHEREAS, in addition to his huge research contributions that
24 clarified and defined the cardiovascular system, Dr. Guyton was
25 the author of what is probably the best-selling medical textbook
26 of all-time, the *Textbook of Medical Physiology*, now in its 10th
27 edition and translated into 15 foreign languages. It has been in

28 print and in use in use for more than 45 years by students all
29 over the world; and

30 WHEREAS, acknowledging the book's influence on the education
31 of physicians, the Association of American Medical Colleges
32 honored Dr. Guyton with its 1996 Abraham Flexner Award in Medical
33 Education; and

34 WHEREAS, his successor as chairman of the department, Dr.
35 John Hall, says Dr. Guyton has taught and been a mentor to more
36 than 150 scientists and at least 27 who are now department chairs;
37 and

38 WHEREAS, Dr. Guyton was born in Oxford, Mississippi, the son
39 of Dr. Billy S. and Kate Smallwood Guyton. His father was an
40 ophthalmologist and dean of the two-year medical school at the
41 university from 1935 until 1944. His mother, a mathematician and
42 physics teacher, had been a missionary in China for five years
43 before she married; and

44 WHEREAS, he graduated at the top of his class from the
45 University of Mississippi and entered Harvard Medical School in
46 1939. His surgery internship at Massachusetts General Hospital in
47 Boston was interrupted by military service at Camp Detrick,
48 Maryland. After World War II, he went back to Massachusetts
49 General to complete surgery training, but contracted polio in
50 1947; and

51 WHEREAS, the disease left him with residual paralysis that he
52 knew would prevent a career in surgery. After a period of
53 recovery in Warm Springs, Georgia, he came back to Oxford to begin
54 a career in research. He earned a presidential citation in 1956
55 for instruments and aids he designed for the handicapped after
56 seeing the need for them at Warm Springs. His first full-time
57 teaching job was in pharmacology department at the two-year
58 medical school in Oxford. In 1948, he was named chairman of the
59 physiology department. He moved to Jackson as chairman when the

60 medical school was expanded to a four year curriculum and the
61 University Medical Center opened in 1955; and

62 WHEREAS, he received every scientific honor a physiologist
63 can receive, including the *Special Scientific Achievement Award*
64 from the American Medical Association, the *William Harvey Award*
65 from the American Society of Hypertension, the *CIBA Award for*
66 *Research in Hypertension*, the *Research Achievement Award* of the
67 American Heart Association. He was President of the American
68 Physiological Society and the Federation of American Societies of
69 Experimental Biology. He was editor-in-chief of the
70 *International Review of Physiology* and editor of *Cardiovascular*
71 *Volume of the International Review of Physiology*. In 1978 he was
72 invited to give the William Harvey Lecture for the Royal College
73 of Physicians in London honoring the 400th anniversary of the
74 birth of William Harvey, who first described the circulation of
75 blood. He was invited to lecture at universities all over the
76 globe, wrote scores of books and hundreds of scientific papers and
77 edited many journals. Yet, as former Vice Chancellor, Dr. Norman
78 C. Nelson has recalled, "he was always attentive to the needs
79 here. He never closed his door to students, and he was the only
80 teacher I ever knew to turn down an invitation to give a
81 prestigious lecture if it conflicted with his teaching schedule";
82 and

83 WHEREAS, Dr. Guyton and his wife, Ruth Weigle Guyton, built
84 their present home in Jackson soon after they moved here. Their
85 10 children, all of whom are now physicians, grew up in the house
86 in north Jackson that their father designed and built.

87 WHEREAS, it is with great sadness that we note the passing of
88 this medical giant of the 20th Century, whose widely used medical
89 textbooks and research has brought distinction to the University
90 Medical Center and to the State of Mississippi:

91 NOW, THEREFORE, BE IT RESOLVED BY THE SENATE OF THE STATE OF
92 MISSISSIPPI, THE HOUSE OF REPRESENTATIVES CONCURRING THEREIN, That

93 we do hereby commend the life and legacy of research of
94 world-renowned Mississippi physiologist Dr. Arthur Guyton, and
95 express the sympathy of the Legislature for his untimely death.

96 BE IT FURTHER RESOLVED, That this resolution be presented to
97 the surviving family of Dr. Guyton and to the University Medical
98 Center and be made available to the Capitol Press Corps.