

## **In Memory**

**Edward Joseph Masoro, Ph.D.**

**(1924-2020)**

Edward J. Masoro, pioneer in research on the biology of aging, died on July 11, 2020 the age of 95. Loved and respected, Ed died shortly after suffering a debilitating fall. He was attended to by caring members of the geriatric medicine, hospice and end-of-life community. This is a tribute not only to his scientific legacy but also to his exemplary character. During his 23-year tenure here, he created the scientific framework and laid the administrative foundation that enabled UT Health San Antonio to become internationally recognized as a center of excellence for aging research and the search for therapeutic interventions to extend healthy life.

The first half of Dr. Masoro's scientific life, beginning with dissertation research at UC Berkeley, was devoted to the study of lipid metabolism. He rapidly rose through the faculty ranks at Queens University, Canada, Tufts University, the University of Washington and the Medical College of Pennsylvania, where he served as the Chair of Physiology and Biophysics from 1969 to 1973. Ed joined UT Health San Antonio (then University of Texas Health Science Center at San Antonio) in 1973 as the founding chair of the Department of Physiology. He literally brought aging research to San Antonio, leading a cadre of scientists and leveraging university resources to probe the physiological changes that accompany aging and how those changes are affected by caloric restriction.

Dr. Masoro's shift to research on aging was a significant mid-career change in focus. It was stimulated intellectually by invitations to participate in workshops born from the nascent interest of the NIH the biology of aging and the establishment of the National Institute on Aging and the serendipitous confluence of four other investigators in Philadelphia who were drawn to the developing field.<sup>1</sup> His transition from lipid physiology to biology of aging is but one of many examples of a fluid intellect that followed wherever the questions and their answers led. Many colleagues have noted his exceptional ability to hone in on a problem, whether in science or policy, asking the key questions and striving for the most logical way to answer them. From the outset, his aging research and scientific leadership inspired others to study the biology of aging. A notable example was a program in the Department of Cellular and Structural Biology at UTHSA that pioneered the application of transgenic approaches to the study of aging. Many of those he mentored and attracted to aging research went on to assume national leadership positions in the field.

Dr. Masoro is highly regarded for pioneering studies in laboratory rats establishing that caloric restriction (CR) not only extends life but delays the onset of most pathophysiological changes and diseases of aging. CR remains one of the most robust interventions -- not only for the magnitude of its life-extending action but also for the breadth of age-sensitive diseases and deficits of aging that it attenuates. He led the scientific team that was the first to test and refute several mechanistic hypotheses to explain the life-extending action of caloric restriction, and then to strengthen arguments in support of other mechanisms. He and his research group developed criteria still employed to evaluate aging rodent husbandry and assess whether an intervention retards aging. He set high standards in aging research for rigor and reproducibility. His research

publications (>180), many of which have received up to 1000 citations, were matched by chapters, reviews and commentaries (>140) that identified important gaps in knowledge—some of which continue to challenge the field. An example is an insightful review, written in his 80's, of the problem of terminal weight loss and frailty, two major factors of immense clinical importance that remain poorly understood and have become a major research topic.<sup>2</sup> It is fitting that he wrote the first chapter on the physiology of aging ever written for a textbook on medical physiology, and that his final contribution was its revision in 2017.<sup>3</sup>

After stepping down from the chair of Physiology in 1991, Dr. Masoro turned his attention to ensuring the continuation and growth of research on aging at UT Health San Antonio. He obtained a NIA Academic Leadership Career Award which provided the support needed to create the Aging Research and Education Center (AREC). Establishing the AREC was visionary and is a major component of Dr. Masoro's legacy. It served as an umbrella organization linking scientists and clinical investigators studying aging at UT Health. The AREC was the catalyst that led to the Barshop Institute of Longevity and Aging Studies, one of the first centers in the nation devoted to research on the biology of aging.

Dr. Masoro served the scientific community in innumerable and consequential ways. He was elected President of the Association of Chairs of Physiology and of the Gerontological Society of America. He chaired and served on countless committees of these and other scientific societies and advisory panels. He was editor of the Journals of Gerontology: Biological Sciences and multiple editions of the Handbook of The Biology of Aging. His accomplishments were recognized by numerous awards given for research and leadership, including the Kleemeier Award of the Gerontological Society of America.

Arguably, Dr. Masoro's greatest legacy is his lasting influence on others—not only by direct mentorship, but also by the example he set as a scientist, leader and colleague. He was a dynamic and passionate teacher—recognized by numerous teaching awards. His mentorship extended well beyond the lecture hall. He advised countless faculty, postdoctoral fellows and predoctoral trainees. Members of his administrative staff loved him. He was always available for counsel despite his many responsibilities. Many faculty and colleagues remember his leadership style—efficient and democratic—which engendered respect and a spirit of cooperation that facilitated progress and action.

Ultimately, great accomplishment without matching character lacks resonance. Dr. Masoro had both. He was passionately devoted to truth and unafraid of speaking it, whatever the consequences. Although forthright in expression, he was gentle and kind. Those who knew him well recall innumerable manifestations of his empathy, gratitude and love—especially for Bobbie, his wife of nearly 70 years—but also for his beloved dogs, his gardener, his caregivers and his colleagues. His character—marked by honesty, fairness, timeliness, and compassion—was above reproach.

May his legacy continue. He will be greatly missed.

*"In academic science, you ask a question, and you are totally in control of being able to try to answer it... How many walks of life give you that kind of freedom?"*

-Edward J. Masoro

1. Adelman R. C. and Masoro E. J. In Memoriam: Vincent J. Cristofalo (1933-2006). *J. Gerontol.: Biol. Sci.* 61A:639-640, 2006
2. Masoro, E.J. Terminal weight loss, frailty and mortality in *Handbook of the Biology of Aging*, 7<sup>th</sup> ed., edited by E. J. Masoro & S. N. Austad, San Diego: Academic Press Elsevier, pp. 321-331, 2011.
3. Masoro, E. J. The physiology of aging in *Medical Physiology*, 3rd ed., edited by W. F. Boron & E. L. Boulpaep, Philadelphia: Saunders Elsevier, pp. 1235-1247, 2017.

