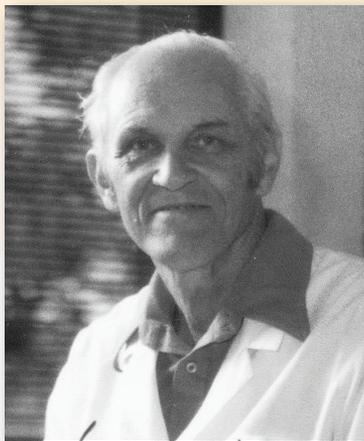


David W. Talmage, M.D., AAI '54

1919–2014

AAI President 1978–1979

AAI mourns the loss of David W. Talmage, M.D., a past AAI president (1978-1979) and recipient of the AAI Lifetime Achievement Award (1994) who is credited with conceptualizing many central tenets of immunology, in particular those that led to the clonal selection theory. The following tribute is based upon an obituary published by the Talmage family in March 2014 on the Monarch Society website and Dr. Talmage's own words drawn from a narrative of his life work appended to his CV. AAI gratefully acknowledges the family's permission to extend the obituary in presenting the tribute here. AAI also thanks Drs. Ann Feeney and David Nemazee for their comments.



David W. Talmage

A life begun in 1919 ended peacefully on March 6, 2014, as David W. Talmage died at home on his own terms. David was an intellectual giant who was determinedly practical. At 94 years, he knew he was failing in health and resolutely planned his passing. He was pleased to have seen all five of his children and their spouses as well as most of his ten grandchildren and their significant others in the few weeks before his death.

Born of Presbyterian missionaries, he was raised in Korea by his parents and his beloved Grandmother Emerson. He was the sixth of seven children and spent his entire young life in Korea. He attended a mission boarding high school in Pyongyang (also known as Pyeng Yang) in what is now North Korea. He had little formal schooling until high school, having been educated at home and in small mission schools.

His was an interesting young life in the countryside of South Korea in the small town of Kwangju. His first visit to the United States didn't occur until he was 13 when he spent a few months in Decatur, Georgia, while his father was on furlough from his mission work. After returning to Korea, Talmage would not visit the United States again until he returned to attend college. He attended Maryville College for one year before transferring to Davidson College where he graduated in 1941. He attended medical school at Washington University in St. Louis during World War II, graduating in 1944 when the war required an accelerated path for medical school graduations. From 1945 to 1947, he served as a United States Army medical adviser to the Korean government. He served two internships: the first at

Georgia Baptist Hospital in Atlanta (1944-1945) and the second at Barnes Hospital in St. Louis (1948-1949). He later served a residency at Barnes Hospital (1949-1950) and a fellowship at Washington University (1950-1951).

Talmage married the love of his life, LaVeryn, in 1944, and remained devoted to her until her death in 2013. Together, they raised five children, Janet Lynn "Jenny" Bock (Jim), Marilyn Talmage-Bowers (Kent), David Hall Talmage (Ellie), Mark Talmage (Karen), and Carol Talmage, all of whom reside in the Denver area. With LaVeryn, he raised their family, travelled the world,

and distinguished himself in his career. In late life, he supported her painting career and took care of her while studying his own new interest, physics.

Talmage had an illustrious career with appointments at the University of Colorado Health Sciences Center (UCHSC), the University of Chicago, and the University of Pittsburgh. He was a distinguished professor at the University of Colorado from 1986 until his death. He also served as the associate dean for research affairs at the University of Colorado Health Sciences Center (UCHSC) from 1983 to 1986. He was the director of the Webb Waring Lung Institute from 1973 to 1983, the dean of faculty at UCHSC from 1969 to 1971, acting dean of faculty at UCHSC from 1968 to 1969, associate dean of faculty from 1966 to 1968, and professor and chairman of the Microbiology Department at UCHSC from 1963 to 1966. He was a professor in the UCHSC Department of Microbiology and Immunology from 1960 to 1986 and a professor in the UCHSC Department of Medicine from 1959 to 1960. He also served as assistant professor at the University of Chicago (1952-1956) and the University of Pittsburgh (1951-1952).

Talmage's professional achievements earned him much acclaim. He was elected to the National Academy of Sciences in 1976 and served on the Council of the National Institute of Allergy and Infectious Diseases from 1974 to 1978. He was president of The American Association of Immunologists 1978-1979, and a member of the AAI Council from 1973 to 1980. He also served as chair of the AAI Awards Committee (1979-1980) and as an AAI representative to the FASEB Board (1977-1980) and to the FASEB Public Affairs Committee (1981-1983). In

addition, he was a member of the editorial board for *The Journal of Immunology*, including as an associate editor (1968-1972) and a member (1973-1977) of what is today the AAI Publications Committee.

In 1994, he received the AAI Lifetime Achievement Award; the highest honor bestowed by the AAI Council in recognition of a member's career of scientific achievement and contributions to AAI and fellow immunologists. His additional career appointments and honors included service as president of the American Academy of Allergy, Asthma, and Immunology, editor for the *Journal of Allergy*, recipient of the Bonfils-Stanton Award, the Sewall Award from the University of Colorado, and the Sandoz Immunology Prize. He was awarded the University of Colorado Faculty Research Lectureship, the Fulbright-Hays Senior Scholar Award, honorary doctorates from Colorado State University and Buena Vista College, and an Alumni Recognition Award from the University of Chicago. He was a Markle Scholar and a member of Phi Beta Kappa and Alpha Omega Alpha honorary societies.

Between 1948 and 2007, Dr. Talmage authored more than 150 articles in leading scientific journals predominantly addressing immunobiology. In 1995, he published his first physics article. Three weeks before his death, he submitted a paper to a physics contest with an essay on physics related to gravity and inertia.

His immunology research included a large body of work on many aspects of the interaction of antigen and antibody, and the formation of antibodies by B cells after antigenic exposure, as well as other areas such as transplantation biology and immunological tolerance. He began his research in St. Louis in the laboratory of Frank Dixon, where they proposed a two-step process for the formation of antibodies, based on his studies using radiolabeled proteins. They demonstrated that the first radiosensitive phase was followed by a radioresistant phase, and that the first phase was absent from the more rapid anamnestic response. After his move to Chicago, his work led him to propose that the avidity of antibody for antigen is variable. He proposed that each B cell would make only one particular antibody, a concept which was expanded upon later that year by Burnet, who coined the term "clonal selection theory."¹

Talmage brought together a number of studies in his 1957 *Annual Reviews in Medicine*² article, leading him to note that "...only those cells are selected for multiplication whose synthesized product has affinity for the antigen

injected." Hence, Talmage, along with Ehrlich, Jerne, and Burnet, all contributed to the development of the clonal selection theory. His work in 1955 and 1956 with Taliaferro demonstrated antibody diversity and showed, using transferred spleen cells, that immunological memory consisted of newly made, not preformed, antibodies. His analysis, with Lee Hood, of the available amino acid sequences of Bence Jones proteins led to their 1970 *Science* article "Mechanism of Antibody Diversity: Germ Line Basis for Variability."³

Personally, Talmage was described by his family as a peacemaker above all. He was remarkably patient and loving. He disliked conflict and advised forgiveness and restraint in judging others. He gave everyone the benefit of the doubt and counseled respect for all humans. He was seldom critical, and was empathetic and concerned about others. He was a humble person despite his many accomplishments.

In addition to his children and grandchildren, Talmage is survived by his sister, Mariella Provost, Black Mountain, North Carolina, as well as many nieces and nephews. He was predeceased by his other siblings: John, Franklin, William, Janet (Keller), and Roy.

Gifts in his honor may be made to Montview Boulevard Presbyterian Church (montview.org) or Colorado Homeless Families (coloradohomelessfamilies.org). Personal condolences may be sent to the family via Marilyn Talmage-Bowers, Psy.D., at marilyntalmagebowers@gmail.com.

View highlights of Dr. Talmage's AAI service and career achievements, including his 2012 video interview for the AAI Oral History Project, at http://www.aai.org/About/History/Notable_Members/Presidents/Talmage_David.html

1. Burnet, F.M. 1957. A modification of Jerne's theory of antibody production using the concept of clonal selection. *Aust. J. Sci.* 20:67-69.
2. Talmage, D. W. 1957. *Allergy and Immunology Ann. Rev. Med.* 8:239-245.
3. Hood, L., and D. W. Talmage. 1970. *Mechanism of Antibody Diversity: Germ Line Basis for Variability. Science* 168:325-334.