



Marshall R. Urist, MD
1914-2001

Dr. Marshall R. Urist of Los Angeles, California, died at his home on February 4, 2001, after a lengthy illness. Dr. Urist had been associated with the University of California at Los Angeles since 1948.

Dr. Urist was born in Chicago and lived on a small farm in South Haven, Michigan. He received a Bachelor of Science degree from the University of Michigan in 1936 and a Master of Science degree from the University of Chicago in 1937. He then attended the Johns Hopkins University School of Medicine, where he received his MD degree in 1941. After completing an internship in surgery at Johns Hopkins Hospital, he entered the orthopaedic residency program at Children's Hospital School in Baltimore, Maryland. It was in Baltimore that he met and successfully courted Alice Elizabeth Pfund, daughter of Herman Pfund, Professor of Physics at Johns Hopkins University. Marshall and Alice were married in 1941.

In 1943, Dr. Urist enlisted in the United States Army and his unit was eventually assigned to England, where he served as the Chief of Orthopaedic Surgery. He was appointed Regional Consultant of the 802nd Hospital Center and then in 1945 was designated Chief of Orthopaedic Surgery of the 97th General Hospital in Germany. He was assigned to the Surgeon General's office in 1946 to record the advances made during World War II in the management of compound fractures of the lower extremity. For his efforts, he received the Sir Henry Wellcome Award for a Major Advance in Military Surgery in 1947. He also received a Bronze Star and two special citations from General Leonard Heaton and General Dwight D. Eisenhower.

After resigning from the military, he became a senior resident at Massachusetts General Hospital and completed his training with a fellowship in orthopaedic surgery at Children's Hospital in Boston, where he worked on the management of poliomyelitis. He returned to the University of Chicago in 1947 as an Instructor and Research Associate in the Department of Physiology, where he worked with Dr. Franklin McLean, who became his mentor. In 1948, he joined the fac-

ulty of the new School of Medicine at the University of California at Los Angeles as an Assistant Professor (Adjunct) of Surgery. He was promoted to Associate Professor in 1954 and to Professor of Surgery, Orthopaedics in 1969.

Dr. Urist contributed to the discipline of orthopaedic surgery in many ways. First, he pursued an interest in basic research. In 1950, Drs. Urist, Budy, and McLean received a Kappa Delta Award for their work on the effects of estrogen on bone formation. In 1955, Drs. Urist and McLean collaborated on *Bone: An Introduction to the Physiology of Skeletal Tissue*, which was revised and reprinted in 1961 and 1968. Dr. Urist's attention then extended to the identification of an inductor substance for bone formation. His initial report, entitled "Bone: Formation by Autoinduction," appeared in *Science* in 1965 and was designated a landmark publication. For the remainder of his career, he worked to isolate and identify this factor, which he again reported on in *Science* in 1983, in an article entitled "Bone Cell Differentiation and Growth Factors." We now know that there is a family of bone morphogenetic proteins (BMPs), several of which have been synthesized and have demonstrated osteoinductive capacity. Specific BMPs have been shown to have an important role in skeletal differentiation. Dr. Urist's research efforts resulted in the publication of over 400 papers and the presentation of more than 200 lectures throughout the world. Under his supervision at UCLA, patients with difficult nonunions and bone defects have been successfully treated with native BMPs.

Marshall served as Editor of *Clinical Orthopaedics and Related Research* from 1966 to 1993. His format of presenting a specific topic or symposium with a respected guest editor was unique. Some of these subjects were controversial and represented early presentations of important topics. The blend of symposia, original publications, and classic articles reflected Marshall's varied interests and leadership. He was frequently found working on weekends in the editorial office that he established adjacent to his laboratories.

Dr. Urist received many other awards and honors, including two Kappa Delta Awards, the Claude Bernard Medal, a John Simon Guggenheim Foundation Fellowship, and the Bristol-Myers Squibb/Zimmer Distinguished Award for Achievement in Orthopaedic Research. He received an honorary degree in Medicine from the University of Lund and an Honorary Fellowship and Degree from the Royal College of Surgeons, Edinburgh. He gave the Shands Lecture at the Combined Meeting of the American Academy of Orthopaedic Surgeons and the Orthopaedic Research Society in 1981 on "Bone Cell Differentiation." The Orthopaedic Research Society honored Marshall by establishing an annual award in his name for Excellence in Tissue Research. Marshall was a past President of the Association of Bone and Joint Surgeons, the Society of International Research in Orthopaedic Surgery and Traumatology (SIROT), and the Hip Society.

Marshall particularly enjoyed his visits to his avocado farm, Bone Hill, in Fallbrook, California, and he would frequently provide his visitors and laboratory staff with avocados, accompanied by an instructional discourse regarding their species and growing characteristics. He loved to attend UCLA basketball games with his children and, in later years, with his grandchildren. He also loved to attend movies with his wife, Alice, and he read extensively. Their home was always open for holidays, and frequently their special occasions were shared with the many foreign fellows who spent a year in the Bone Research Laboratory at UCLA.

Marshall Urist is survived by his wife and life partner, Alice; their children, Nancy Miller, John Baxter Urist, and Marshall Urist Jr., an oncologic surgeon at the University of Alabama School of Medicine; and eight grandchildren.

—G.F.