

2010 Lifetime Achievement Award of Tissue Engineering and Regenerative Medicine International Society— North America: Arnold I. Caplan, Ph.D.



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DR. ARNOLD I. CAPLAN, Ph.D., is a Professor of Biology and the Director of the Skeletal Research Center at Case Western Reserve University. Dr. Caplan received his B.S. in chemistry at the Illinois Institute of Technology, Chicago, Illinois, and his Ph.D. from The Johns Hopkins University School of Medicine, Baltimore, Maryland. Dr. Caplan did a Postdoctoral Fellowship in the Department of Anatomy at The Johns Hopkins University, followed by Postdoctoral Fellowships at Brandeis University, Waltham, Massachusetts, with Dr. N.O. Kaplan and Dr. E. Zwilling. He came to Case Western Reserve University as Assistant Professor of Biology in 1969 and rose through the ranks to become Professor in 1981. He has taken three sabbatical leaves: one in 1973 as a Visiting Professor in the Department of Biochemistry and Biophysics at the University of California at San Francisco Medical School with Brian McCarthy and William Rutter; one in 1976 in the Institute de Chimie Biologique at the Faculty of Medicine de Strasbourg in the Laboratory of Pierre Chambon; and, lastly, the Edna and Jacob Michael Visiting Professor of the Department of Biophysics with Nathan Sharon at the Weizmann Institute of Science in Rehovot, Israel, in 1984. He has received a number of awards, including the

Elizabeth Winston Lanier Award given by the American Academy of Orthopaedic Surgeons as part of their 1990 Kappa Delta Awards Program, the 1999 Marshall R. Urist Award for Excellence in Tissue Regeneration Research given by the Orthopaedic Research Society, and the Genzyme Lifetime Achievement Award given by the International Cartilage Repair Society in 2007. He has trained over 125 researchers, has over 360 published articles, and has long been supported by the National Institutes of Health and other nonprofit and for-profit agencies for his efforts in trying to understand the development, maturation, and aging and regeneration of cartilage, bone, skin, and other mesenchymal tissues and for his pioneering research on mesenchymal stem cells (MSCs). Since the 1970s, he has published works on the embryonic development and tissue-engineered repair of bone, cartilage, muscle, tendon, dermis, and other tissues as a component of his interests in regenerative medicine. More recently, he and his collaborators have helped define the immunoregulatory and tropic activities of MSCs as manifested by the secretion of a complex array of bioactive molecules at sites of tissue injury or inflammation. With the identification of MSCs as perivascular cells, or pericytes, he has proposed how MSCs function *in vivo* at sites of tissue regeneration and, thus, defined the logics for self-repair within the context of regenerative medicine. He recently suggested as the secretory source of bioactive agents that the MSC be renamed as the medicinal signaling cell because of its controlling role in the regeneration of damaged tissue.