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Michael A. Becker; Theodore Friedmann; Kari O. Raivio; Michael S. Hershfield; George Nuki

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IN MEMORIAM: J. EDWIN SEEGMILLER, M.D. (1920–2006)



Dr. J. Edwin Seegmiller, a pioneer investigator in human biochemical genetics, an internationally honored scientist and academic leader, and a charter participant and host of the International Purine and Pyrimidine Metabolism Symposia, died on May 31, 2006 in La Jolla, California at the age of 85 years. Dr. Seegmiller's career as an investigator spanned more than five decades. Over this time, he was a major contributor to and an expeditor of biomedical scientific advances that, even with his consummate optimism, he could not have foreseen as an aspiring scientist growing up in rural Utah. That he chose to devote much of his scholarly effort to the study of human genetic disease ("experiments of nature") was fortunate for those of us whom he mentored (his "scientific children") and who came to share his enthusiasm, curiosity, demanding work ethic, and joy in creating knowledge.

Jarvis Edwin Seegmiller (known as Jay) was born on June 22, 1920 in St. George, Utah. Growing up as the youngest of nine siblings in a farming family, he displayed at an early age his pleasure in testing his hypotheses about how things worked, clearly a precursor of his life-long scientific commitment. Jay was graduated Phi Beta Kappa from the University of Utah in 1942 with a degree in chemistry and then received his medical degree from the University of Chicago in 1948. After internship at the Johns Hopkins Hospital, Jay trained with Bernard Horecker at the National Institute of Arthritis and Metabolic Diseases (NIAMD) of the NIH. He then served as a research associate at the Thorndike Memorial Laboratory of Harvard Medical School and as a visiting investigator at the Public Health Research

Institute of the City of New York prior to returning to the NIAMD in 1954, as a senior investigator. Over the next 15 years, Dr. Seegmiller and his collaborators devised and assembled the novel methodologies (isotopic labeling; cell culture, metabolic intermediate analysis) and the conceptual framework that permitted them to accomplish a series of biochemical and clinical studies of gout and several human hereditary diseases of purine and amino acid metabolism (Lesch-Nyhan Syndrome, HPRT deficiency, alcaptonuria, cystinosis), that validated the classical approach to the study of "inborn errors" resulting from single gene defects. Dr. Seegmiller was appointed Assistant Scientific Director of NIAMD in 1960 and Chief of the Section on Human Biochemical Genetics in 1966.

Upon retirement from the U.S. Public Health Service in 1969, Dr. Seegmiller joined the faculty of the new University of California, San Diego (UCSD) Medical School as Professor of Medicine and Chief of the Arthritis Section. Over the course of more than three decades at UCSD, Jay not only continued his investigations of purine metabolism, he also organized and supervised one of the first NIH-supported multi-investigator human genetics program project grants. During this time, work in his laboratory and with his collaborators advanced in many areas, including: the role of PRPP in the regulation of purine nucleotide synthesis; the molecular and metabolic mechanisms involved in the association of ADA and PNP deficiencies with defects in immune function; and the role of pyrophosphatases in the pathogenesis of calcium crystal-associated arthropathies. In addition, Dr Seegmiller's boundless scientific intellect led him to explore a new area of science: the processes involved in normal and pathological aging. Jay was the prime mover in the establishment of what has become the internationally acclaimed Stein Institute for Research on Aging at UCSD, a multidisciplinary scientific and educational program that now includes more than 100 faculty members.

The international scientific community has long recognized and honored Jay for pioneering proof of the concept that the combination of biochemistry, cell biology, and genetics provides an elegant means for mechanistic characterization of inborn metabolic disease and a model for approaching multigenic diseases. He was a member of the National Academy of Sciences of the United States and the American Academy of Arts and Sciences. He received the United States Public Health Distinguished Service Award in 1969 and was honored as Master of the American College of Rheumatology (ACR) in 1992. Dr. Seegmiller was a member of the American Society of Biological Chemists, the American Chemical Society, the American Society of Human Genetics, the American Society for Clinical Investigation, the American Association for the Advancement of Science, and the Association of American Physicians. During his distinguished career, Dr. Seegmiller served as a Macy Scholar both at Oxford University and at the Basel Institute in Switzerland, and as a John Simon Guggenheim

Foundation Fellow at the Swiss Institute for Experimental Cancer Research in Lausanne.

Dr. Seegmiller is survived by his wife, Barbara; his daughters, Dale Seegmiller Maudlin of Solana Beach and Lisa Seegmiller Taylor of Palo Alto; sons Robert Edwin of San Diego and Richard Lewis of Sugarland, Texas; stepsons Gary, David, and Randy Ellertson; sisters Rose and Deola Bell and 17 grandchildren. His first wife, Roberta, passed away in 1992.

The purine and pyrimidine research community has fond memories of Jay Seegmiller as a creative scientist, active participant in conferences, and a warm and generous human being.

Michael A. Becker, Chicago, Illinois, USA

Theodore Friedmann, La Jolla, California, USA

Kari O. Raivio, Helsinki, Finland

Michael S. Hershfield, Durham, North Carolina, USA

George Nuki, Edinburgh, Scotland, UK