



**Dr. Patrick V. Vail** died on Sunday, February 8, 2004. Dr. Vail was the Director of the USDA-Agricultural Research Service's Horticultural Crops Research Laboratory, Parlier, California, from 1982 until he retired in February of 2003. Pat received his BA and MS degrees from California State University, Fresno, and his Ph.D. from the University of California, Riverside in 1967, and was among the first graduate students in Entomology. Pat had been with the USDA since 1962.

Pat was a nationally and internationally recognized authority in the fields of entomology, insect pathology, microbial control of production and post-harvest pests, entomogenous viruses, mass rearing, in vivo virus production, basic insect biology, pest management, and insect ecology. He personally conducted research on alternative methods of insect control such as induced sterility, pheromones, and cultural practices as they might be used in pest management systems in pre- or postharvest situations.

He discovered the nucleopolyhedrovirus isolated from the alfalfa looper in 1966 while a staff member of the USDAARS Boyden Entomology Laboratory on the U.C. Riverside campus. His research on this virus changed classical views about the specificity of baculoviruses. He also developed in vitro methods for its production and plaque assay. The virus is used in agriculture research and as an expression vector for the production of unique biologically active compounds of importance to human and veterinary medicine and biology. Gross annual revenues from the baculovirus based expression system exceed \$1 billion dollars annually. Pat was a research scientist and program manager, serving as a Research Leader and Laboratory Director at several ARS locations during the 41 years of his professional career. He published over 200 articles in scientific journals and other media.

Pat provided technical leadership for complex, comprehensive and productive research programs on vegetable, cotton, and post-harvest insects (fresh fruits and vegetables and dried fruits and nuts). Under his direction and leadership, outstanding accomplishments and progress were made in developing new non-chemical alternatives for insect control in both the pre- and post-harvest areas. Pat served as head of the Insect and Pest Control Section of the Food and Agriculture Organization of the United Nations/International Atomic Energy Agency, Vienna, Austria, from 1975-78 with responsibilities for Agency tsetse fly and tropical fruit fly programs.

Pat was often invited to present the results of his research, as well as provide technical advice regarding the needs, development and initiation of research programs by international organizations, such as the United Nations International Atomic Energy Agency and Food and Agriculture Organization, the International Center for Insect Physiology and Ecology in Nairobi, as well as the Entomological Society of America (national and branch), American Association for the Advancement of Science, National Science Foundation, U.S.-Israeli Binational Agreement for Research and Development, industry and private agricultural groups, commodity marketing orders, Environmental Protection Agency, USDA-Animal and Plant Health Inspection Service, U.S. Department of Energy, California Department of Food and Agriculture, Department of Defense, National Cotton Council and Cotton Incorporated, post-harvest groups, and universities.

Pat held many positions in regional and national societies and was the President of the Pacific Branch of the Entomological Society of America in 1989. In 1992, Dr. Vail was one of three USDA scientists to be assigned to the Methyl Bromide Technical Options Committee of the United Nations Environmental Program (UNEP). Pat was the instrumental force in gaining support of the agricultural community for the new ARS San Joaquin Valley Agricultural Sciences Center as well as the construction of the 80,000 square foot state-of-the-art facility. He saw his dream of a new Center come to fruition in 2001 when the laboratory on Peach Avenue was closed and moved into the new facility in Parlier. For his efforts on behalf of research and agriculture, Pat received the USDA-ARS Distinguished Scientist of the Year Award in 1995 for first isolating and then conducting basic and applied research on a virus exceedingly important to insect pathology/ microbial control, genetic engineering, and human and veterinary medicine and the United Nations Environmental Programme Certificate of Appreciation in 1995. In 1996 he received the United States Department of Agriculture Award for Personal and Professional Excellence for "Sustained international contributions to entomology, insect pathology/microbial control, and human and veterinary medicine" from the Secretary of Agriculture. In 1997 Pat received the School of Natural Sciences Distinguished Scholar Award from California State University, Fresno. As a member of The Japan Varietal Testing World Trade Organization Group, Pat received the Secretary of Agriculture's Honor Award for Personal and Professional Excellence for exceptional performance, creativity, and perseverance in successfully challenging, in the World Trade Organization, Japan's long-standing varietal testing trade restrictions, June 1999.

In his spare time, Pat enjoyed traveling with his wife Susan, and visiting his three daughters who live in Miami, Lake Tahoe and Los Angeles. Pat was well known for his excellent tennis prowess, fishing, and construction of large-scale radio controlled airplanes. He will also always be remembered for his dry wit and optimistic outlook on life.

Services were held at the Newman Center at Fresno State on Thursday, February 12, 2004. Remembrances may be sent to: Cancer Center, Saint Agnes, c/o The Foundation, 1111 East Spruce, Fresno, CA 93720 and the Hines Hospice, 1616 West Shaw, Suite B6, Fresno, CA 93711.

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