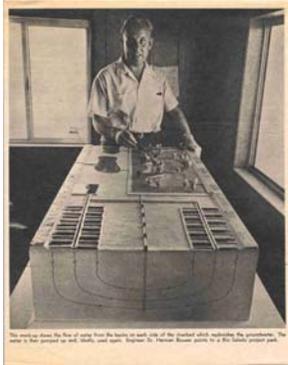


Dedication

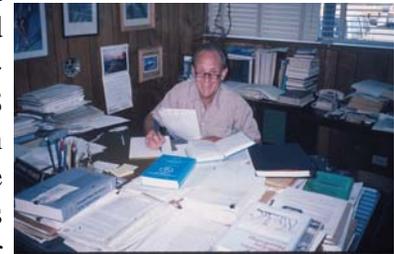
This year there are two employees who have made such an impact on our lab that we dedicate this year's Annual Report to them both.

Herman Bouwer received B.S. and M.S. degrees in land drainage and irrigation from the National Agricultural University of Wageningen, The Netherlands, in 1949 and 1952, respectively, and a



Ph.D. degree in hydrology and agricultural water management from Cornell University in 1955. He was then associated with Auburn University's agricultural engineering department in Alabama, where he was responsible for research and graduate teaching in soil and water management. In 1959, he became research hydraulic engineer with the U. S. Water Conservation Laboratory in Phoenix, Arizona, and served as Director from 1972 to 1990. His main current projects deal with the role of groundwater recharge in the treatment and storage of sewage effluent for reuse, the effect of groundwater pumping on streamflow, the effect of agriculture on groundwater quality, and regional salinity issues. He is adjunct professor at Arizona State University and the University of Arizona. He has written more than 300

research and technical publications, including one textbook: Groundwater Hydrology (McGraw-Hill, 1978), and 12 book chapters. He has frequently served as consultant to Federal, State, and local agencies in the U.S. and abroad on problems of underground movement of water, renovation and reuse of wastewater, groundwater recharge, and water conservation in general. He received the 1966 Walter L. Huber Research Prize from the American Society of Civil Engineers for early accomplishment and great potential, the 1984 R. J. Tipton Award from the American Society of Civil Engineers for sustained excellence in water management research, the 1985 Area Scientist-of-the-Year Award from the U. S. Department of Agriculture, the 1988 Hancor Award for soil and water engineering from the American Society of Agricultural Engineers, the 1992 Honorary Life Membership Award from the Association of Ground Water Scientists and Engineers of the National Ground Water Association for eminence in the groundwater industry and the many contributions to the field of groundwater recharge, and the 1997 Lifetime Achievement Award from the Arizona Hydrological Society. He has served on two National Academy of Sciences Committees, is a member of the Research Advisory Board of the National Water Research Institute, and serves on the Arizona State Board of Water Quality Appeals. He retired from USDA-ARS in January 2002 but still often comes to work.



Clarence L. Lewis, our favorite “Bud,” was the Machinist at the lab from September 20, 1981, until May 6, 2002. Bud was born in Pennsylvania and served in the Army for three years. After serving in the military, he worked as a machinist for Parker White Metal Company in Fairview, Pennsylvania, before moving to Arizona in 1978 to work for Rotorway Aircraft, Inc., in Chandler. In 1981 we were happy to hire him as a machinist to supervise and manage the

shop area. During his career, we were often amazed at his vast knowledge of machining, fabricating, welding, and designing. Examples of his abilities are shown in the many items he designed and fabricated that enhanced the success of our experiments from the 10-foot tall articulated "Bidirectional Reflectance Factor" measurement device (called "The Dinosaur" because it looked like an abstract brontosaurus) to an intricate, finely machined camera mount. His greatest value to the lab, however, was as a teacher. He had infinite patience in sharing the tricks he had learned in his lifetime of fabrication work with the rank amateurs among us who constantly peppered him with questions, often the same questions repeated many times. Bud's life has touched us all. Many remember the love and compassion he had for his first wife Ann until her death and his lovely children Toni and Ty. Then Bud was blessed with another love and eventually second wife, Laurie. Laurie and Bud worked numerous years together at the lab and many of us can tell you stories of the humor they shared. We still laugh about how Laurie bought Bud for \$2 and kept the receipt on her refrigerator. Bud and Laurie have been a big inspiration. Bud passed away on May 6, 2002 and, yes, Bud, we were all your family and will miss you dearly!