



IN MEMORIAM

William Sylvester Jewell

Professor of Industrial Engineering and Operations Research, Emeritus
Berkeley
1932 — 2003

William Sylvester Jewell, known to friends and colleagues as “Bill,” died on January 27, 2003 at John Muir Medical Center in Walnut Creek, California, after an illness of several months. He was in his 70th year.

Born in Detroit, Michigan on July 2, 1932, he earned his bachelor’s degree in engineering physics from Cornell University in 1954. As a graduate student at the Massachusetts Institute of Technology, he studied under several of the pioneers in the new field of operations research. There he earned his master’s degree in 1955 and, in 1958, the degree of doctor of science in electrical engineering, with a specialization in operations research.

In 1960, Bill joined the Department of Industrial Engineering at the University of California, Berkeley. Together with other new faculty, he expanded the academic and research programs, and even the name of the department to encompass the growing field of operations research. He served the department faithfully until his retirement in 1997, including terms as chair from 1967 to 1969 and from 1976 to 1980. He always had a lively interest in interdisciplinary research. He led the transformation of the Operations Research Center into the more broadly based Engineering Systems Research Center (ESRC), of which he served as acting director from 1985 to 1989 and again from 1991 to 1992. In that capacity he attracted many faculty from other departments of engineering, statistics, public health, and other fields into collaborative research in the ESRC. His cheerful manner, optimistic outlook, enthusiasm for the field, and thoughtful suggestions were essential elements of his effective leadership and influence with his colleagues.

As an early student of linear programming, Bill was attracted to a special class of problems associated with network flow theory. He was probably the first researcher to show the fundamental connections between the primal variables as current flows in electrical networks and the dual pricing variables as voltage potentials. Before a complete formal theory of quadratic programming was available, he developed special network-flow algorithms for computing global solutions to networks with a linear resistance-based relationship between current flow and voltage drop. His lectures on these topics displayed an intimate knowledge and deep understanding of two different but clearly related scientific disciplines.

A consistent theme of Bill’s later research was the mathematical analysis of random phenomena with applications to various domains, including traffic flow, project planning and scheduling, and microchip manufacture. His most significant contributions were in the analysis of risk and its applications to the insurance industry. For the problem of estimating the risk of a situation as more data become available, he developed methods based on Bayes’ Theorem that are computationally efficient and practical to use. He also made major contributions to the formulation and solution of difficult problems of reinsurance. This work brought him international recognition and collaboration with researchers with similar interests in Europe. In 1980 he was appointed guest professor at the Federal Institute of Technology in Zurich for a year. In the following two years, he was elected a corresponding member of the Association of Swiss Actuaries, and was awarded the Halmstad Memorial Prize by the Actuarial Education and Research Fund for the Society of Actuaries. He was also an active member of the International Actuarial Association.

His interest in applications of operations research led him to consult with many governmental organizations and private companies. He was one of the founders and a director of Teknekron Industries, Inc. This firm was organized in Berkeley to develop commercial applications for new technologies, and produced several successful spin off enterprises.

His love of travel and his interest in other languages took him to many countries. In 1965, he went to Paris under a Fulbright Research Travel Fellowship. In 1974, he had a one- year appointment as a research scholar and director of the Methodology Project at the International Institute of Applied Systems Analysis in Laxenburg, Austria.

His reputation among students was one of high expectations and exacting standards, combined with interest in and sympathy for them as persons. His graduate students speak of the care, attention, time and patience he lavished on them, including extending the hospitality of his home and table.

Bill is survived by Elizabeth, his wife of 46 years and traveling companion on many trips in various parts of the world, four children, and five grandchildren. Bill touched many lives with his caring, friendly manner. He enjoyed spending time with family and friends, keeping up with technologies, and listening to classical music. He was a member and supporter of his church's choir for many years. Following his retirement, he spent many pleasurable hours uncovering his family's genealogy, and continuing his travels around the world. His lively and intellectual wit, wise and thoughtful counsel, and a sympathetic ear endeared him to many; and so he is remembered.

C. Roger Glassey
Robert Oliver
Ronald Wolff