REPORT OF THE MEMORIAL RESOLUTION COMMITTEE FOR
JAMES R. FAIR

The special committee of the General Faculty to prepare a memorial resolution for James R. Fair, professor emeritus, chemical engineering, has filed with the secretary of the General Faculty the following report.

Sue Alexander Greninger, Secretary
The General Faculty

IN MEMORIAM
JAMES R. FAIR

Professor Emeritus James R. Fair died on October 11, 2010, just three days short of age ninety. Jim made major contributions to the industrial practice of chemical engineering and in the education of young chemical engineers; he straddled the industrial-academic interface with great ease.

Jim was born in Charleston, Missouri, south of St. Louis and near where the Ohio River intersects with the Mississippi River, on October 14, 1920. He spent his early years in Tonganoxie, Kansas, and Little Rock, Arkansas. As a young boy Jim became very fond of watching baseball games and was fascinated by all aspects of trains and railroads; these were past-times that stayed with him throughout his life. He was very active in scouting and became an Eagle Scout before his sixteenth birthday.

At age eighteen, Jim entered The Citadel (The Military College of South Carolina) in the tradition of his father. In 1940, he transferred to the Georgia Institute of Technology, where he received a B.S. in chemical engineering in 1942. After graduation, he joined the Monsanto Chemical Company as a junior engineer in St. Louis but later had assignments in Karnack and Texas City, Texas. During World War II, he was vitally involved with the government’s high explosives and synthetic rubber programs.

As it turned out, Jim was transferred to Texas City just prior to what has been called the worst industrial accident in U.S. history, and he narrowly missed being one of its fatalities. On April 16, 1947, a French-registered ship, the Grandcamp, docked at the Port of Texas City adjacent to the Monsanto facility and, loaded with approximately 2,300 tons of ammonium nitrate, caught fire. On seeing the smoke, Jim and some of his colleagues went to the docks to investigate. However, very fortunately, Jim decided to return to his office to complete some calculations while the others remained on the dock watching the fire. On his way to the office, the ammonium nitrate detonated and the explosion destroyed the Monsanto plant, and many of Jim’s coworkers were among the nearly 600 who died. Jim was knocked unconscious and injured by the blast; he was quite fortunate to have survived the disaster.

Because of his outstanding work and promise as a young engineer, Jim was granted a Monsanto academic leave of absence for one year and used it to obtain a master’s degree in chemical engineering from the University of Michigan, which he completed in June of 1949. He returned to work at Monsanto in Texas City and soon met a lovely young Texas girl by the name of Merle Innis. Merle and Jim were married January 14, 1950. Their first child, James Rutherford Fair, was born in Texas City on February 8, 1951.

Following the Michigan experience, Jim gave a lot of thought to obtaining a Ph.D. and considered reaction kinetics as an important area to pursue. Thus, in 1952, he took unpaid leave from Monsanto and entered the graduate program in chemical engineering at The University of Texas at Austin, where he did research with Professor Howard F. Rase. After receiving his Ph.D. in 1954, he joined Shell Development Company in Emeryville, California, where he worked for approximately two years. Their second child, Elizabeth Fair, was born in Oakland, California, on April 30, 1955.
In 1956, he returned to the Monsanto Chemical Company in its Corporate Research Laboratories in Dayton, Ohio, as a research section leader. In 1961, he was transferred to Monsanto headquarters in St. Louis, where he took on ever increasing responsibilities, and served as director of corporate technology for a decade. While at Monsanto, he maintained several academic connections, including service as an affiliate professor of chemical engineering at Washington University during 1964-1979. Their third child, Richard Innis Fair, was born in St. Louis on April 26, 1963.

In the mid-1970s, the first endowed chair was established in the College of Engineering, now the Cockrell School of Engineering, at UT Austin by the family of Ernest Cockrell Jr., a successful graduate of the college. The faculty of the Department of Chemical Engineering was well aware that Jim Fair had a strong interest in engineering education, and with the strong support of Dean Earnest F. Gloyda, it was decided to see if this chair could be used to attract Jim to return to Austin as part of our faculty. In 1979, Jim began a full-time academic career at UT by accepting the offer of the Ernest & Virginia Cockrell Chair in Engineering. In 1985, Jim was appointed to the new John J. McKetta Centennial Energy Chair in Engineering that had been established to honor his friend and colleague.

Jim established the Separations Research Program (SRP) a very successful industrial-academic consortium, at UT in 1983, and he remained its head until 1996; there is still a strong legacy of the SRP that continues at the University to the present. At its zenith, this program had as many as forty corporate sponsors. As part of the SRP, Jim built an extremely successful separations pilot plant for research by undergraduate and graduate students, inventors, and small and large chemical and oil companies. This facility recently received over $3,000,000 of equipment upgrades and continues to be utilized and supported by industry under the leadership of Dr. A. Frank Seibert, one of Jim's former graduate students. The SRP eventually evolved into the Process Science and Technology Center that continues to provide collaboration of industry and academia and supports the research of graduate students into a wider area of chemical engineering; its director, Dr. Bruce Eldridge, is another one of Jim's former graduate students.

During his academic career, Jim taught courses for undergraduates, from beginning freshmen to seniors about to graduate, and for advanced-level graduate students. For freshmen, he gave the students an introduction to what a career in chemical engineering could be like based on his unique perspective. His technical courses on separation techniques, mass transfer, and design gave students the benefit his long experience as an industrial practitioner in these areas. Jim directed the research for twenty-one masters' theses and twenty-two doctoral dissertations. Many of these students went on to have very distinguished careers in various industries.

Over his professional career, Jim published more than 200 technical papers and book chapters. He also served as technical consultant to many companies. For twenty-five years, he taught a continuing education course under the sponsorship of the American Institute of Chemical Engineers; the course was the most popular of that organization and was offered over 125 times. Jim officially retired his academic position at age seventy-two but continued to work every day while holding emeritus status.

The majority of the technical work Jim did during his thirty-three years in industry was of a proprietary nature; however, he was able to establish a remarkable publication record in the archival literature. His technical expertise and interest was always in the design of the components that make up chemical manufacturing plants, viz., reactors, heat exchangers, separations devices, etc. His true love was the design and operational efficiency of distillation columns. He wrote many review articles and contributions to handbooks in these areas. After joining the faculty at UT, Jim started an active research program on separations, mainly in the areas of distillation and extraction; these topics had been largely abandoned in most universities, owing in part to the lack of government funding for topics of such practical concern to companies. However, Jim solved the funding problem by using his strong industrial background and connections to obtain very generous support of both fundamental and applied separation research from a wide array of corporations. He added professional staff and included a number of his faculty colleagues and supported their contributions via the industrially funded Separations Research Program.

Jim Fair was involved in many professional activities with service on many boards and committees, and he was widely recognized for his contributions to engineering practice and education. He served as vice-president of Fractionation Research, Inc. and was a Registered Professional Engineer in Texas and Missouri. He received the
Professional Achievement Award from *Chemical Engineering* magazine in 1968 “for contributions to chemical engineering design education and to the field of separations technology” and was elected to the National Academy of Engineering in 1974.

He was especially active in the American Institute of Chemical Engineers (AIChE), where he served a term as an elected director and held the grade of fellow since 1971. He received the following awards from the AIChE: William H. Walker Award (1973), the Chemical Engineering Practice Award (1975), the Founders Award (1976), and the Gerhold Award in Separations Technology (1994). In November 1979, he delivered the Annual Institute Lecture before AIChE, and in November 1983, he was recognized as one of thirty living Eminent Chemical Engineers at the AIChE Diamond Jubilee meeting. In November 2000, he was honored in a special symposium of AIChE for his many contributions to the distance-learning program of that organization. He received the Malcolm Pruitt Award from the Council for Chemical Research (1991), the Gold Medallion award from the American Society for Engineering Education (1993), and the Separations Science and Technology Award of the American Chemical Society (1993). In October 1993, he was honored by a Festschrift of the international journal, *Industrial and Engineering Chemistry Research*, published by the American Chemical Society. He was inducted into the Engineering Hall of Fame at Georgia Tech in 1994.

He received honorary doctorates from Washington University (1977) and Clemson University (1987). He was named a Distinguished Engineering Graduate from The University of Texas at Austin (1976), where he also received the Joe J. King Professional Engineering Achievement Award (1987) “for exemplary leadership in the engineering profession.”

Following his childhood interest in trains, he conducted research on railroad history and, to this end, published a number of articles as well as two full-length books on the subject. His very large collection on railroad history and operations has been given to the Railroad and Heritage Museum at Temple, Texas. He was an avid book collector, and his extensive collection of technical books was given to the University of Guanajuato in Mexico. Jim wrote his memoirs for his family and a few friends that he sub-titled, *Recollections of a Good Life*.

Jim led an active church life and served University Presbyterian Church in Austin, including session membership. He is survived by his wife of sixty-one years, Merle, their two sons (their daughter died earlier in 2010), and six grandchildren.

This memorial resolution was prepared by a special committee consisting of Professors Donald R. Paul (chair), Thomas F. Edgar, and Dr. A. Frank Seibert.

Distributed to the dean of the Cockrell School of Engineering, the executive vice president and provost, and the president on January 31, 2011. This resolution is posted under “Memorials” at: [http://www.utexas.edu/faculty/council/](http://www.utexas.edu/faculty/council/).