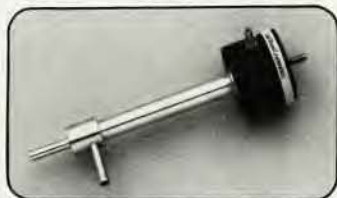


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rigorous methods of statistical mechanics, which began in the 1960s.

During World War II, Mayer served as a consultant to the Ballistics Research Laboratory, Aberdeen Proving Ground. He also began his eleven years as editor of the *Journal of Chemical Physics*. Prompted by Urey, Enrico Fermi, and Edward Teller, he accepted an appointment at the University of Chicago in 1946. He extended his work on liquids to ionic solutions, and in a landmark paper showed for the first time the real difficulties in proceeding beyond Debye-Hückel theory. Toward the end of his stay at Chicago, Mayer's interests grew in the direction of non-equilibrium phenomena and the approach of systems towards thermodynamic equilibrium. With Fermi's death and the subsequent dispersal of their friends from Chicago, the Mayers decided in 1960 to join Harold Urey and Carl Eckart at the University of California, San Diego, in La Jolla. Here, Mayer continued to work on transport theory and critical phenomena; he served as chairman of the chemistry department from 1963 to 1966, and did much to shape the character of the department in its formative years.

In 1972 Mayer retired from the University of California. His unbridled curiosity and clarity of thought continued to influence the scientific community about him. He remarried, and with his new wife, Peg Griffin, continued the Mayer traditions of warm hospitality in La Jolla. He was active on committees of the National Research Council and served as president of The American Physical Society in 1973. Among his many honors was membership in the National Academy of Sciences.

Several generations of students and colleagues will remember Joe Mayer as a compassionate scholar and friend who consistently took time to devote his full attention to their research, yet always challenged them to become better scientists. "Look beyond the mathematical formalism to the meaning of what you do," he would insist.

ELLIOTT W. MONTROLL

University of Maryland

HAROLD J. RAVECHÉ

National Bureau of Standards

GERALD A. DEVORE

California State University

Elliott Montroll died after the preparation of this obituary. An obituary of him will be published in a forthcoming issue.

Arthur C. Keller

Arthur C. Keller, retired director of the switching apparatus laboratory at Bell Laboratories, died on 25 August 1983. He was 82.

Born and raised in New York City, he obtained BS and EE degrees at Cooper Union. With a year's leave of absence from work, he acquired an MS at Yale and then went on to graduate studies in physics at Columbia.

In 1917, when Keller commenced his studies at Cooper Union, he embarked on a Bell System career of 48 years. He started at the Western Electric Engineering Department, predecessor of Bell Telephone Laboratories. At first he worked on the design and development of telephone instruments, then on sound systems. He achieved a first with his application in 1923 for his initial patent (in a total of 34) on a vented enclosure for loudspeakers to enhance low-frequency response. Through the next two decades he became deeply involved in the development of systems, apparatus and processes for disc recording and reproducing, encompassing electrical transcriptions for broadcasting and the development of the single groove stereo disc record (including the basic patent). In 1931-32, Keller and his associate, I. S. Rafuse, made the first known stereophonic and high-fidelity recordings of orchestral music (the Philadelphia Orchestra, conducted by Leopold Stokowski). The recordings were part of a Bell project aimed at improving the quality of recorded and reproduced sound to be transmitted over the telephone network.

As World War II approached, Keller was put in charge of sonar development for pro- and anti-submarine warfare. His patents on directional crystal arrays helped develop the versatile QJA sonar, which permitted the sending and receiving of pulses and sounds over various bands.

After the war, Keller turned his attention to switching apparatus. For 17 years, until his retirement in 1966, he administered the development, design and preparation for manufacture of all types of mechanical and electro-mechanical apparatus for telephone switching systems.

F. K. HARVEY

Bell Laboratories, retired

Erich Stefan Weibel

Erich Weibel, a foremost theoretician and international leader of the plasma-physics community, died at his home, Les Crets, in Grandvaux, Switzerland, on 16 May 1983. Founder and director of the Center for Research in Plasma Physics of the Association Euratom-Switzerland in Lausanne from 1961 through 1981, Weibel also carried out research at the forefront of plasma theory.

Born in Winterthur, Switzerland, in 1925, Weibel obtained a diploma in