

While at the University of Illinois as a postdoctoral research associate in 1970–73, Jacob changed his field of research from condensed matter physics to pulsars, the newly discovered rapidly spinning neutron stars. He returned to Hebrew University in 1973 to take a series of positions at the Racah Institute, where he played a key role in developing the astrophysics program, becoming Hebrew University's youngest full professor in 1977. An outstanding popular lecturer, Jacob interviewed leading scientists and examined their work on "Tatzpit" ("Observation"), an immensely popular weekly program he created for Israeli television in the early 1980s; it received the Israeli equivalent of the Emmy.

From 1982 to 1984 Jacob was a visiting professor at Columbia University, and in 1984 he became a professor of physics there. In 1994 he was appointed deputy chairman of Columbia's department of physics and codirector of the Columbia Astrophysics Laboratory.

Jacob participated in the first investigations of the unpinning of neutron superfluid vortices in neutron star crusts as the origin of spin-period "glitches" in pulsars. Immediately after the discovery of the first millisecond pulsar, he was among those who proposed that millisecond pulsars are weakly magnetized neutron stars that have been spun up to millisecond rotation periods by accretion in x-ray binaries. The idea of accretion spin-up of neutron stars to millisecond pulsars—since borne out by observations of many such systems—was a leitmotif in Jacob's subsequent work. Recent work included seminal research on the "normal branch" quasiperiodic x-ray intensity oscillations from the accretion disks and recurrent transient x-ray flares in some neutron star binaries.

In all this work, Jacob's coworkers cherished his clear and innovative physical insights and his flair for illuminating basic features in simple but ingenious ways. He was also a stimulating and devoted teacher whose approach in the classroom reflected the originality and simplicity that characterized his research. He will be remembered for his warmth, happy disposition and generosity and for his devotion to his exceptionally talented family.

**ALI ALPAR**

*Middle East Technical University  
Ankara, Turkey*

**TSVI PIRAN**

*Hebrew University  
Jerusalem, Israel*

**DAVID PINES**

*University of Illinois  
Urbana, Illinois*

**MALVIN RUDERMAN**

*Columbia University  
New York, New York*

## John Louis Vossen

John Louis Vossen, a good friend and colleague of many in the vacuum and thin-film communities, passed away suddenly of an aneurysm on 20 May 1995, at the age of 58.

A 1958 graduate of Saint Joseph's College in Philadelphia, John spent the next 27 years with the RCA Corp. In 1965 he joined RCA's David Sarnoff Research Laboratory in Princeton, New Jersey, where he began the work in thin films and sputtering processes that established him as an authority in those fields. In 1978 he became the manager of the thin film technology laboratory at the David Sarnoff Lab, which was responsible for the research, development and commercialization of a wide variety of applications of thin film deposition and etching processes involving a vacuum environment. Under his leadership this laboratory became one of the foremost US groups devoted to thin films. In 1986, foreseeing the demise of company-sponsored research as we had known it, he formed his own very successful consulting firm in Bridgewater, New Jersey, specializing in thin film areas.

John's career encompassed the broad area of physical vapor deposition in the emerging electronics and semiconductor industry. His major contributions were in the application of plasma-based processes to industrial manufacturing. He made key contributions to advances in metallization and to the development of sputtered dielectrics, sputter and plasma etching processes and transparent conductors. He coedited several editions of the book *Thin Film Processes* (Academic Press, 1978), which has become a classic in the field. He also coedited several volumes of the "Physics of Thin Films" series (vols. 12–20, Academic Press). A prolific writer, he published extensively on the applications of rf sputtering. His early papers became classics in the field. His emphasis was always on practical implementation; he held more than 25 patents.

John was an active member of the American Vacuum Society for over 25 years, serving in the thin-film division, as a founding member of the greater New York chapter, on many committees and finally as president of the society in 1984. During John's presidency AVS was unwillingly thrust into international politics in a conflict with the US Government, which wished to require organizers of conferences to place restrictions not only on those who attended but also on the content of their papers. John played a key role in this incident as a firm advocate for the

freedom of scientific societies. He also served as a director of the governing board of the American Institute of Physics (1981) and as a director of the Society of Vacuum Coaters (1991–95).

The facts of John's technical activities do not do justice to the person. John was a man who could always be counted on to fulfill any responsibility he accepted. He was honest with himself and with others. He was a man of principle who looked through the pretenses and posturing of those who considered themselves powerful, and he could poke fun at himself as well as others. John will be missed by all who knew him, especially those who worked in his old group at the RCA laboratories.

**DOROTHY M. HOFFMAN  
BAWA SINGH**

*David Sarnoff Research Center  
Princeton, New Jersey*

**TED MADEY**

*Rutgers University  
Piscataway, New Jersey*

## Leopoldo M. Falicov

Leopoldo M. Falicov, a professor of physics at the University of California, Berkeley, died of cancer in Berkeley on 24 January 1995, at the age of 61. He was a distinguished condensed matter theorist and teacher who was known internationally for his tireless service to science and education.

Born in Buenos Aires, Argentina, Falicov received his Doctor en Fisica degree from the Instituto J. A. Balseiro of the University of Cuyo in Argentina in 1958. He then went to England, where he obtained his PhD in physics from the University of Cambridge in 1960.

Falicov then went to the James Franck Institute at the University of Chicago. He became a full professor in 1968 and came to Berkeley in 1969.

While at Berkeley, Falicov served concurrently as a senior scientist in the Materials Sciences Division of the Lawrence Berkeley Laboratory, and he held visiting appointments at more than 20 universities around the world. He chaired the Berkeley physics department from 1981 to 1983.

Falicov's lectures, publications and research reflected his clarity of thought and precision. Using geometrical illustrations and creative models, he solved problems related to the electronic structure of solids, superconductivity, magnetism, surfaces and phase transitions. The intense experimental research on Fermi surfaces of metals and semimetals in the 1960s and 1970s produced data that could be viewed as parts of puzzles. Falicov proposed Fermi surface geometries that allowed consistent interpretation of the data and