

On 1 January **Augustus Oemler Jr** became director of the Observatories of the Carnegie Institution in Pasadena, California. In this capacity Oemler, who had been an astronomy professor at Yale University, holds the Crawford H. Greenwalt Chair for the Director of the Observatories. Oemler succeeds **Leonard Searle**, who will remain at the observatories as a staff member and director emeritus.

The 1995 Dannie Heineman Prize has gone to **Donald Eigler** of the IBM Almaden Research Center in San Jose, California, for "his landmark investigations of the quantum mechanical behavior of atomic-scale devices." The prize is awarded biennially by the Göttingen Academy of Sciences and Humanities in Göttingen, Germany.

Carlo Rovelli, a professor in the physics and astronomy department at the University of Pittsburgh, has won the Xanthopoulos Award for "his wide ranging contributions to classical and

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quantum gravity, in particular for his stimulating papers on the issue of physical observables in diffeomorphism invariant theories and his pioneering ideas in the development of the loop representation in quantum general relativity." The award is given every three years by the International Society of General Relativity to a physicist under 40 who has made a significant contribution to gravitational theory.

At the LASERS '95 conference held last month in Charleston, South Carolina, the Einstein Medal for Laser Science was awarded to **Theodor W. Hänsch** and **Carl E. Wieman**. Hänsch, who is director of the Max Planck Institute for Quantum Optics in Garching, Germany, and a professor of physics at the University of Munich, was honored for "pioneering contributions to laser cooling and high precision laser spectroscopy." Wieman, a fellow of the Joint

Institute for Laboratory Astrophysics and a professor of physics at the University of Colorado at

Boulder, was recognized for "making the technology of laser cooling generally accessible, and for its applications to fundamental problems in physics."

Albert Cho and **Akira Hasegawa** have been awarded the C&C Prize, funded by the NEC Corp to recognize work on computers and communications technologies. Cho, director of the semiconductor research laboratory at AT&T Bell Laboratories in Murray Hill, New Jersey, was cited for "seminal contributions to molecular beam epitaxy, a technology which is revolutionizing high-performance optoelectronics and electronics for computers and communications." Hasegawa, a professor of communication engineering at Osaka University, in Japan, was recognized for the discovery of solitons in optical fibers and the pioneering contributions made in applications for ultra-high-speed optical fiber communications.

OBITUARIES

Shechao Charles Feng

Shechao Charles Feng, a professor in the physics department of the University of California, Los Angeles, died on 16 September in Paris.

Shechao was born on 1 October 1960 in Beijing, China. He graduated from Peking University with a BS in physics in 1981. He received one of the highest scores in the first CUSPEA (China-US Physics Examination and Applications program, organized by Nobel laureate T. D. Lee) and entered Harvard University as a graduate student in the physics department. There, he studied theoretical condensed matter physics with Bertrand Halperin and received his PhD in 1986. During his graduate-school summers, he worked at the Schlumberger-Doll Research Laboratories, where he began his pioneering work on elasticity percolation in disordered media. During 1985-86 Shechao worked on universal conduction fluctuations and on other aspects of mesoscopic physics at MIT, where he was a postdoctoral fellow with Patrick A. Lee. He made extremely important contributions on the effect of single impurity motion and $1/f$ noise. He returned to Schlumberger in 1986 as a member of the professional staff.

In the summer of 1987 Shechao became an assistant professor in the physics department at UCLA, where



SHECHAO CHARLES FENG

he expanded the scope of his research into optical fluctuations in random media. He also made significant contributions in several other areas, including the theory of the quantum Hall effect and magnetic flux motion in superconductors. Most recently, he was engaged in theoretical and experimental research of a near-infrared medical imaging scanner, a cheap, portable device he proposed for the detection of hematoma and tumors. Just last July Shechao became one of the youngest full professors in the history of the University of California.

In his leisure time, Shechao enjoyed playing violin, sailing and swimming. He

was an extremely energetic person and a truly talented scientist. His death at such a young age, at the prime of his life and career, is an indescribable loss, and Shechao will be painfully missed.

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Jacob Shaham

Jacob Shaham, a professor of physics at Columbia University known for his landmark contributions to the study of neutron stars, died on 20 April 1995, after a brief illness.

Born Jacob Bronstein in Tel Aviv in 1942, Jacob received a BSc in 1963 and an MSc in 1965 from Hebrew University, Jerusalem. In 1968 his family took the surname "Shaham," the Hebrew equivalent of Bronstein. After serving in the Israeli Army from 1965 to 1968, Jacob returned to Hebrew University and was awarded a PhD in physics in 1971.

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.

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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
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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