

DOE Fermi Award to Vendryès and Wilson

The US Department of Energy last month presented the 1984 Enrico Fermi Award to Georges Vendryès, for his direction of the French nuclear power program, and to Robert R. Wilson, for his work in particle-accelerator design and construction. The Fermi Award, the highest scientific award given by DOE, recognizes "exceptional and altogether outstanding scientific and technical achievement in the development, use or control of atomic energy." Each award consists of a presidential citation, a gold medal and \$100 000—recently increased from the original award amount of \$50 000.

After World War II, Vendryès worked for a time as a civil engineer for the reconstruction of bridges and roads in southeastern France. He began studying experimental physics at the Laboratoire de Synthèse Atomique of the Collège de France, working under Frédéric Joliot-Curie, and received his doctorate in 1951. He then joined the Commissariat à l'Energie Atomique where he was initially involved in measurements of the neutron cross sections of fissile nuclei and in experiments on chain-reacting uranium lattices in various moderators. The information that came from these experiments was useful in the development of France's first electricity-generating reactor at Marcoule.

Vendryès was largely responsible for the zero-power critical facility, Proserpine, which used a solution of a plutonium salt in water, as well as for Rapsodie, an oxide-fueled, sodium-cooled experimental fast breeder reactor that went critical in 1967. He helped convince the French national utility, Electricité de France, to test a fast breeder—which increases operational efficiency a hundredfold—in the form of a medium-scale (250 MW) power plant; Phenix was placed on-line in 1973. Vendryès also played a major role in launching Super Phenix, a full-scale fast breeder reactor plant of 1200 MW that is expected to go critical in 1985. The project is an international joint venture of France, Germany and Italy.

At present, as director and senior adviser to the chairman of the French



VENDRYÈS

Atomic Energy Commission, Vendryès is working to increase cooperation between European breeder projects and similar efforts in the US and Japan. In addition, he is overseeing groups designing the "full-scale commercial breeder" to follow Super Phenix and he has helped launch the French nuclear-fusion program in cooperation with the European community. Among his scientific contributions, Vendryès explained the Oklo deposits, the results of a two-billion-year-old natural reactor discovered in a uranium mine in Gabon.

Wilson received his PhD in 1940 from the University of California and then taught at Princeton University until 1943, when he joined Los Alamos. His first duty there was to move the Harvard cyclotron to Los Alamos for experiments important to the Manhattan project. He was soon promoted to head the physics section, which entailed supervising the experimental physics groups at Los Alamos and at the Alamogordo test site. After the war, Wilson moved to Harvard and then to Cornell University, where he supervised the design and construction of four accelerators of successively higher energy. Of these, the 2-GeV and 10-GeV synchrotrons operated at the highest energies then attained worldwide by electron synchrotrons, and the 1.4-GeV synchrotron was the first



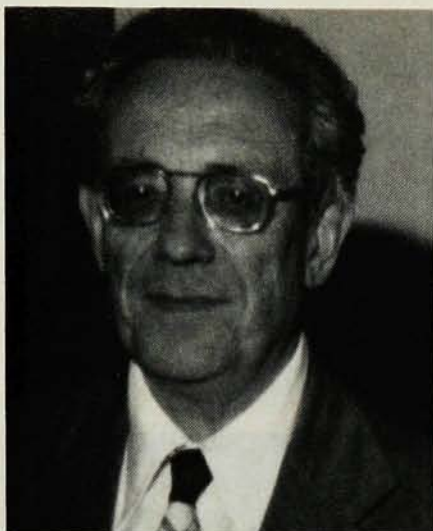
WILSON

strong-focusing accelerator ever operated. Wilson was director of the Fermi National Accelerator Laboratory from its beginning in 1967 until 1978. He was responsible for the fact that the design and construction of the accelerator and its associated laboratory were completed not only below budget, but also with an energy that was twice that of the original design. The Energy Doubler-Saver project he initiated, which culminated in the highly successful operation of the Tevatron, pioneered the use of superconducting magnets in large synchrotrons.

Apart from designing and building accelerators and laboratories, Wilson did pioneering work on pion and kaon photoproduction and in the investigation of excited states of nucleons; he was the first to apply Monte Carlo techniques to the study of electromagnetic showers. Wilson is currently Michael Pupin professor of physics at Columbia University and professor emeritus of physics at Cornell.

Wigner Medal to Michel for work in group theory

The Group Theory and Fundamental Physics Foundation presented its 1984 Wigner Medal to Louis Michel of the Institut des Hautes Etudes Scientifiques



MICHEL

in Paris in recognition of "his ability to relate abstract notions and constructions of modern mathematics to concrete physical problems." His work has ranged from applications of cohomology theory to the analysis of polarization measurements. In 1950 he first proposed what has become known as the Michel parameter, which appears in equations describing the momentum spectra of muon decay and whose value depends on the nature of the weak interaction. He developed, in 1953, the concept of isotopic (or G -) parity, the eigenvalue of a system under inversion in isotopic spin space; it is conserved in strong interactions. Also during this period he wrote, with Valentine Bargmann and Valentine Telegdi, an article on the precession of polarization of a particle with arbitrary spin moving in a homogeneous electromagnetic field; this article is still cited in the literature. Michel's work on dynamical and spontaneous symmetry breaking started in the late 1960s, in collaboration with L. Radicati, and continues today. His insistence through the years on the consistent use of adequate invariant mathematical formulation in physical applications of group theory has helped physicists adopt such new mathematical concepts as group orbits and strata as a natural way of describing their work.

The Wigner Medal is awarded approximately every two years in recognition of "outstanding contributions to the understanding of physics through group theory." The Foundation considers such work as: the creation and development of mathematical tools that have become important in the description of physical phenomena, the application of group-theoretical methods in chemistry and other sciences, the calculation of experimental numbers, and formulation of general laws of nature using group- and representation-theoretical methods.

in brief

B. Hobson Wildenthal, formerly professor of physics and member of the research staff of the National Superconducting Cyclotron Laboratory at Michigan State University, has been appointed head and professor at the physics and atmospheric science department of Drexel University. **Joan Centrella**, formerly instructor of astronomy at the University of Texas at Austin, has been appointed associate professor at Drexel, and **John DiNardo**, formerly a research fellow at the IBM Thomas J. Watson Laboratory, has been appointed assistant professor.

James F. Gibbons, professor of electrical engineering at Stanford University, became dean of that university's school of engineering on 31 August. A member of the Stanford faculty since 1957, Gibbons succeeds William Kays, who last year announced his plans to return to teaching and research at the end of the summer.

The European Physical Society has awarded the 1984 Hewlett-Packard Europhysics Prize in solid-state physics to **Gerd Binnig** and **Heinrich Rohrer** for their work concerning the invention of a new type of highly sensitive microscope, which is based upon the phenomenon of vacuum tunneling.

Cathleen Synge Morawetz, chairman and professor of the department of mathematics at New York University, was appointed director of the Courant Institute of Mathematical Sciences at NYU on 1 September 1984. Her research interests have concerned partial differential equations and, particularly, their use in analyzing transonic flow and acoustic wave propagation.

Thomas H. Lee of the Massachusetts Institute of Technology was appointed the director of the International Institute for Applied Systems Analysis, effective 1 September. His predecessor, C. S. Holling, has returned to the University of British Columbia in Vancouver, Canada. The Institute is a research organization supported by scientific institutions from both Eastern and Western nations.

The physics department at Montana State University has added to its faculty: **Sachiko Tsuruta** and **William Hiscock**, both of whom do research in theoretical astrophysics; **John Carlsten** whose research is in laser and atomic physics; and **Wayne Ford** who works in experimental surface science.

Daniel E. Koshland, professor of biochemistry at the University of California at

Berkeley, has been named as the new editor of *Science* magazine, effective 1 January 1985. He succeeds Philip H. Abelson, who has served as editor of the AAAS publication since 1962.

Harry G. Drickamer, professor in the chemical engineering, chemistry and physics departments at the University of Illinois, has been awarded the John Scott award of the City of Philadelphia for the "development of high-pressure tuning of electronic orbitals." The award was created in 1816 by John Scott, a chemist, who directed that it should be presented to "ingenious men and women who make useful inventions."

Darleane Hoffman (Los Alamos National Laboratory) has accepted a joint appointment as professor of chemistry at the University of California at Berkeley and research scientist in nuclear chemistry at Lawrence Berkeley Laboratory.

John S. Mallinson, senior physicist and manager of the recording technology department of Ampex Corporation, has been named director of the Center for Magnetic Recording Research at the University of California at San Diego. He succeeds **Albert Hoagland**, who had been granted leave from his duties at IBM to help found the Center and who has served as its acting associate director since February of 1983.

Mathematical Sciences Northwest has added to its research staff: **Kem E. Robinson**, formerly of Stanford University, who will work on designs for a new wiggler system as part of the free-electron laser group; and **David M. Shemwell**, formerly of the University of Texas, who will work on optical system designs, especially for free-electron lasers.

A. Battacharjee has joined the department of applied physics, mathematics and nuclear engineering at Columbia University as an assistant professor. He has spent the past year at the plasma physics program of the Physical Research Laboratory at Ahmedabad, India.

B. Henderson, formerly the Erasmus Smith Professor of Natural and Experimental Philosophy at Trinity College, Dublin, has been appointed to the Chair of Physics (Photonics), at the University of Strathclyde, Glasgow. Henderson will be chairman of the department in succession to **A. L. S. Smith**.