effects of nuclear weapons, scintillation detectors, the free neutrino, and cosmic rays.

German Physical Society awards 1981 prizes

The German Physical Society has awarded its 1981 prizes. Klaus von Klitzing, Technischen Universität München, has won the Walter Schottky Prize in Solid State Physics "in honor of his precise determination of the fine-structure constant from the quantized Hall resistance of the two-dimensional electron gas in semiconductor boundary layers."

Kurt Symanzik, of the Deutsches Elektronen-Synchrotron, Hamburg, is the winner of the Max Planck Medal "for his contributions to Euclidean quantum field theory and its application to the renormalization group."

The Max Born Prize is awarded jointly by the Institute of Physics (London) and the Deutsche Physikalischen Gesellschaft in alternate years to English and German physicists. Cyril Domb, professor of theoretical physics at Kings College, University of London, is the winner "for his outstanding contributions to the field of statistical physics, especially in connection with modern theories of critical phenomena."

in brief

Geoffrey N. Epstein has become assistant professor of physics at Boston University.

The Physics Department of Brown University has appointed **Stephen Libby** of the Institute for Theoretical Physics at Stonybrook, **Junko Shifemitsu** of the Institute for Advanced Study in Princeton, and **Robert Pelcovits**, of Brookhaven National Laboratory, assistant professors.

Steven M. Grimes, formerly of the Lawrence Livermore Laboratory, has been appointed professor of physics at Ohio University.

The first recipient of the American Crystallographic Association's A. L. Patterson Award is **Wayne A. Hendrickson**, a research biophysicist at the US Naval Laboratory in Washington, D. C. He is to receive $1000 and deliver an address on "Anomalous Scattering and Protein Structure."

The National Endowment for the Humanities has named **Gerald Holton** to deliver the 1981 Jefferson Lecture, the highest honor the federal government confers for intellectual achievement in the humanities. Holton, professor of physics and professor of the history of science at Harvard University, has done research on the properties of molecules under high pressure, but is best known for work in identifying central themes connecting scientific advances. His studies of Einstein and Kepler reveal that root ideas of outstanding scientists remain fairly constant despite the spectacular changes that science undergoes decade to decade.

He is cited for contributing "to our understanding of the fundamental human motivations behind scientific achievements" and for presenting "important ethical and value issues related to science and technology."

obituaries

Jorge Andre Swieca

SWIECA

Jorge Andre Swieca died in São Carlos, Brazil, on 22 December 1980. Born in Warsaw, he escaped from Nazism with his family and settled in Brazil. He received his BSc in physics from the University of Brazil in Rio and his PhD in 1963 at the University of São Paulo after having spent one year at the Max Planck Institut with Werner Heisenberg and his coworkers in 1961. His academic career started at the University of São Paulo, where he remained from 1959 up to 1970, when he moved to the Catholic University of Rio. In 1978 he went to the Federal University of São Carlos in São Paulo. There he stayed until his death.

Swieca's scientific contributions are important landmarks within the quantum field theoretic development of almost two decades. He helped recapture confidence in quantum field theory at a time—the 1960s—when its usefulness outside perturbation applications in QED was being questioned. He demonstrated that the finding, that spontaneously broken symmetries produced Goldstone bosons, could be obtained from general field theoretic principles of locality and spectral properties.

Among his finest pieces of work was the structural statement on the connection of charge screening and mass spectrum in Abelian gauge theories. In the last year of his life he worked on the corresponding problem on non-Abelian gauge theories and obtained partial results on what he termed "kinematical color screening." His work on conformal invariance and global operator expansions was also motiviated by his interest in the dynamical consequences of mode-independent general principles.

Complementary to this general structural investigation, Andre studied concrete field theoretical models as a source of new dynamical intuition.

At the beginning of the 1970s, several years before terms like "confinement," "color bleaching," "θ vacua" and "the U(1) problem" entered common usage, he developed some physical ideas relevant to two-dimensional gauge models. Lacking experimental motivation, he first obtained these results by means of internal theoretical logic. He later refined them in his work on screening versus confinement. He was convinced that mathematically controllable models—even if as a result of their two-dimensional nature, they do not represent the reality of elementary particle physics—are valuable theoretical laboratories. Consequently, he thoroughly enjoyed the discovery of a new class of models with an infinite number of conservation laws leading to form factors and an explicitly calculable spectrum S-matrix. In the study of one of these models he found that the understanding of the U(1) problem required the introduction of fractional winding, which in turn transcended the 't Hooft–Atiyah–Singer framework of using a spherical compactified Euclidean space. He also emphasized the exotic statistics of fields that some of these models possess in a natural way and viewed them as special illustrations of the duality first encountered in lattice models of statistical mechanics.

More recently he obtained a more satisfactory understanding of operators generating local kinds in the frame-