particular ways in which its linear amino acid sequence folds—in common with the better-studied immunoglobins. This discovery sparked her interest in comparing and classifying proteins on the basis of their arrangements of such structures as β sheets and β turns. A difficulty in doing such work is that when traditional ways of representing amino acid sequences are used to portray folded proteins, secondary and tertiary features tend to get obscured in a wealth of primary detail. But Richardson overcame this problem by devising a now widely used system for making simplified drawings of protein structures. As Richardson and her coworkers studied structure they began to infer rules about how proteins fold, and since 1983 they have been attempting to design and synthesize simple proteins with "overdetermined" structures to see how well the structure predictions hold up. Richardson is using her 1985 MacArthur award of $220 000 for "things one couldn't do some other way," such as funding her protein-design work, which the Navy used to support. The remainder of the money she may "just hang on to until the right thing comes along."

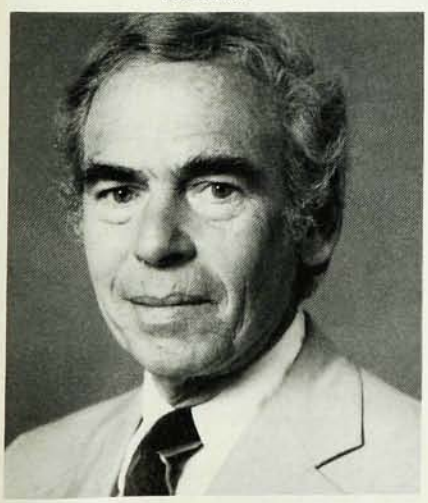
Chalidze, a 1985 MacArthur Fellow, began his human-rights work while still in the USSR. After studying theoretical physics at Moscow University and Tbilisi University (where he received his diploma in 1965), Chalidze went to work at the Institute of Plastics in Moscow. There he headed a unit doing experimental and theoretical research on such topics as high-speed deformation and the reaction of explosive polymers. In 1970 he founded the Moscow Human Rights Committee with Andrei Sakharov and Andrei Tverdokhlebov. An invitation from Georgetown University to lecture on his human-rights work brought Chalidze to the US in 1972, but during the visit the Soviet government stripped him of his citizenship and prohibited his return. Since then he has resided in the US, doing research and writing on Soviet and international law, some of it under contract to the State Department. From 1973 to 1983 he was director of the International League for Human Rights. Chalidze founded the nonprofit Khronika Press, now the major publisher of Russian-language human-rights material from the USSR, in 1973; he continues to serve as its publisher and editor in chief. Throughout, he has continued to do theoretical work in physics, albeit without affiliation with any scientific organization. Since 1984 he has also done independent work on neurolinguistics. Chalidze says that he is using his $220 000 grant to "continue my work as usual, but with more opportunity to work."

—JESSE HOCHSTADT

Frieman replaces Nierenberg at Scripps

Edward A. Frieman, formerly executive vice-president at Science Applications International Corporation, in July replaced William A. Nierenberg as director of the Scripps Institution of Oceanography and vice-chancellor of marine science of the University of California, San Diego. Frieman received his BS (1946) from Columbia and his MS (1948) and PhD in physics (1951) from the Polytechnic Institute of Brooklyn. He was a professor of astrophysical sciences at Princeton and deputy director of the university's plasma-physics laboratory from 1952 to 1979. He served as director of the Office of Energy Research at the US Department of Energy and as DOE's assistant secretary from 1979 to 1981. In 1981 he became executive vice-president at Science Applications. Frieman is a member of the White House Science Council and JASON; he served as chairman of the latter from 1976 to 1978. His research interests include theoretical plasma physics, hydrodynamic stability and astrophysics.

FRIEMAN



NIERENBERG

Nierenberg had been director of Scripps since 1965 and vice-chancellor of marine science at San Diego since 1969. He received his BS (1939) from the City College of New York and his MA (1942) and PhD (1947) in physics from Columbia University. While at Columbia he was a section leader in the Manhattan Project (1942–45) and an instructor (1946–48). He was an assistant professor at the University of Michigan (1948–50) before becoming an associate professor of physics at the University of California, Berkeley, in 1950. He was named a full professor at Berkeley in 1954. Nierenberg established atomic-beams labs at Berkeley and at the Lawrence Radiation Lab in Livermore. He has studied the electronic and nuclear properties of radioactive atoms, gas diffusion theory and the propagation of sound in the ocean. As director at Scripps Nierenberg oversaw programs such as the NSF Deep Sea Drilling project, the North Pacific experiment—a study of the interaction between the upper waters of the North Pacific and the overlying atmosphere—the Sea Grant Program and the Geochemical Ocean Sections Study. He was a member of the US national commission for UNESCO from 1963 to 1970. He has been an adviser-at-large to the Department of State since 1968 and a member of the department's advisory committee for science and technology issues since 1979. Nierenberg served as the first chairman of the National Advisory Committee for Oceans and Atmospheres from 1971 to 1977. He was a member of the National Science Board from 1972 to 1978, and was appointed to the board by President Reagan for a term running from 1982 through 1988. Nierenberg has been a participant in JASON since 1962 and is now its chairman.

Peierls and Woolfson honored by the Royal Society

The Royal Society has honored the following individuals with medals for 1985:

Sir Rudolf Peierls, emeritus professor of theoretical physics, University of Oxford, received the Copley Medal for his "fundamental contributions to a very wide range of theoretical physics, and signal advances in proposing the probable existence of nuclear chain reactions in fissile materials." Peierls studied physics in Berlin, Munich (with Arnold Sommerfeld), Leipzig (with

Werner Heisenberg) and Zurich (with Wolfgang Pauli). In his earliest research Peierls contributed significantly to the theory of thermal conductivity and the transport of phonons. He worked on the two-body nuclear problem with Hans Bethe and on the quantitative analysis of nuclear resonance reactions with P. L. Kapur. In 1940 he predicted, with Otto R. Frisch, the near certainty of an explosion through the multiplication of neutrons in U^{235} and he made accurate estimates of the critical mass for a chain reaction. Peierls also advocated the use of gaseous diffusion to separate U^{235} from U^{238}.

M. M. Woolfson, professor and head of the physics department of the University of York, received the Hughes Medal for the development of methods of solving crystal structures, implemented in the algorithms MULTAN and SAYTAN, the most widely used programs for this purpose. Woolfson was educated at Oxford, where he received his first degree in physics in 1947, and at the University of Manchester Institute of Science and Technology, where he received his PhD in 1952. In 1960, he obtained a DSc from the University of Manchester. During the 1960s he contributed to the basic theory of phase determination, building on the pioneering work of Jerome Karle and Herbert Hauptman (see PHYSICS TODAY, December 1985, page 20). Woolfson's programs were the first completely automatic programs—including all the necessary decision-making algorithms—designed to make the powerful direct methods of structure determination accessible to investigators who have collected x-ray diffraction data, without requiring them to become highly skilled in the theory and practice of crystallography.

In March the society elected as fellows the following individuals whose work is in physics or related fields: William I. Axford, director of the Max Planck Institute for Aeronomy, Katlenburg-Lindau, West Germany; Alec N. Broers, professor of electrical engineering and head of the electrical-engineering division, University of Cambridge; John Clarke, professor of physics, University of California, Berkeley; Simon K. Donaldson, Wallis Professor of Mathematics, University of Bristol; John D. Dowell, professor of elementary-particle physics, University of Birmingham; Martin Fleischmann, professor of chemistry, University of Southampton; Adrian E. Gill, senior principal scientific officer of the UK Meteorological Office; Werner Israel, professor of physics, University of Alberta, Canada; Thomas N. Marsham, member of the United Kingdom Atomic Energy Authority and managing director of its Northern Division, Risley; Edgar W. J. Mitchell, Dr. Lee's Professor of Experimental Philosophy, University of Oxford, and chairman, Science and Engineering Research Council; Henry K. Moffatt, professor of mathematical physics and head of the department of applied mathematics and theoretical physics, University of Cambridge; and David J. Wallace, Tait Professor of Mathematical Physics, University of Edinburgh.

Edwin H. Land, founder of the Polaroid Corporation and later of the Rowland Institute for Science, Cambridge, Massachusetts, was elected a foreign member of the society in June.

Jacobson receives 1986 AAS Rossi Prize

The high-energy-astrophysics division of the American Astronomical Society in June presented the 1986 Bruno Rossi Prize to Allan S. Jacobson (Jet Propulsion Laboratory) for "his pioneering work on high-resolution gamma-ray spectroscopy." This is the second time that the prize, which was established in 1983, has been awarded.

Jacobson received his undergraduate degree (1962) from the University of California, Los Angeles, and his master's degree (1964) and PhD in physics (1968) from the University of California, San Diego. In 1969, his first year at the Jet Propulsion Lab, Jacobson designed and successfully proposed a high-resolution gamma-ray spectrometer that was launched in 1979 aboard NASA's High Energy Astronomy Observatory; he led the JPL group that subsequently used the instrument to conduct an all-sky survey of gamma-ray sources. Their discovery of the existence of radioactive aluminum-26 in the Galactic plane proved that elements of intermediate weight are being produced in our galaxy and provided a means of directly determining the present rate of nucleosynthesis on a galactic scale. Jacobson's observations of

JACOBSON