electronic communications (modems) and color video displays.

Chern, professor emeritus of mathematics at Berkeley, receives his share of the mathematics prize for "his outstanding contributions to global differential geometry, which have profoundly influenced mathematics. Much of Chern's work on differential geometry also has important implications for the gauge fields that form the basis for much of the current theory of elementary particles. Chern has recently also been honored by the American Mathematical Society for his work (see PHYSICS TODAY, January, page 93).

Erdos, who is at the Mathematical Institute of the Hungarian Academy of Sciences in Budapest, is being honored with his share of the mathematics prize for his "numerous contributions to number theory, combinatories, probability, set theory, and mathematical analysis, and for personally stimulating mathematics the world over." He received his DSc from the University of Manchester, and worked principally in the US from 1938 to 1954.

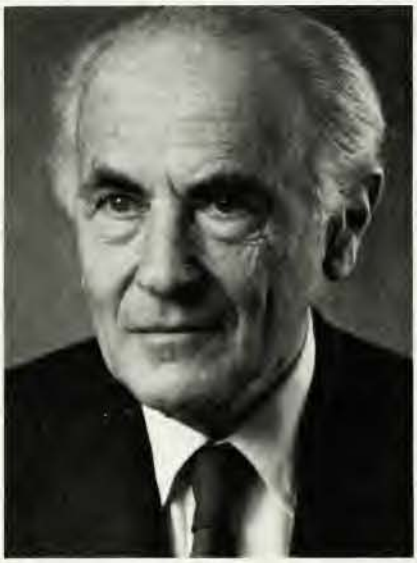
Eirich receives Bingham medal

Frederick Roland Eirich has received the Eugene Cook Bingham Medal for 1983 from the Society of Rheology in recognition of his excellent contribution to rheology.

Eirich was born in Austria in 1905. He studied chemistry at the University of Vienna and obtained his PhD in 1929 and his *Habilitation* in 1938. His thesis, on colloidal gold, was written under the supervision of Wolfgang Pauli, one of the most prominent colloid chemists of the period and father of the Nobel laureate in physics.

In 1932, Eirich joined Herman Mark, who was assembling an interdisciplinary research team at Vienna in the field of natural and synthetic polymers. While there, Eirich focused on the viscosity of dilute solutions, and also established a small group devoted to the study of molecular hydrodynamics.

The German *Anschluss* of Austria led Eirich to emigrate to England, where he joined Sir Eric Rideal at Cambridge. There he continued his work on the fundamental aspects of colloidal suspensions, with emphasis on their rheological properties. In 1940 he went to Australia, where he worked on a variety of problems concerning flow and tribochemistry. Returning to England in 1943, he again took up his teaching and research activities at Cambridge, until, in 1947, he rejoined Herman Mark at what is now the Polytechnic Institute of New York, in Brooklyn. In Brooklyn, Eirich's group worked on a wide range of topics in the field of polymers, again with emphasis on transport phenomena, the relationship between structure and physical properties, general rheology and mechanical testing, absorption and adhesion, and the properties of polyelectrolytes. Recently, stimulated by the work of T. L. Smith and M. L. Williams, Eirich has made contributions to the molecular aspects of the rupture polymers.



EIRICH

Eirich's influence has also been felt through his work as editor of the five volumes of *Rheology: Theory and Applications*, a series of symposia on high-speed testing, and the *Transactions* of the Society of Rheology (1952–56). He was also vice-president and president of the society 1969–73.

Newton biography receives award

The History of Science Society has presented the Pfizer Award to Richard S. Westfall, professor of history and philosophy of science at Indiana University. The award, given annually for a recently published work in the history of science, goes to Westfall for *Never at Rest: A Biography of Isaak Newton* (see PHYSICS TODAY, August 1981, page 57). The biography was cited as "a book of deep and detailed scholarship that is also a masterpiece of erudition. . . . The treatment . . . is profoundly historical, unfailingly reasonable and engagingly direct." The award marks the first time an author has received the Pfizer award more than once: Westfall also received a Pfizer Award for *Force in Newton's Physics* in 1972.

Westfall devoted more than 20 years to the study of Newton's life and work and extensively examined Newton's surviving manuscripts. But, he writes, "The more I studied him, the more Newton receeded from me."

1983 Simon Prize to David O. Edwards

The Institute of Physics has awarded the 1983 Simon Prize for distinguished work in low-temperature physics to David O. Edwards of Ohio State University for his outstanding research on liquid and solid helium and their surfaces.

Edwards was a senior Hulme scholar at Brasenose College, Oxford, and received his bachelor's degree in 1953. He did his graduate work at Oxford's Clarendon Laboratory under the supervision of Kurt Mendelssohn, receiving his DPhil 1957. After a postdoctoral fellowship at Oxford, Edwards joined the low-temperature lab at Ohio State in 1958, becoming professor of physics in 1965.

His first work, carried out in collaboration with Douglas Brewer, was an investigation of heat transfer by internal convection in liquid He^4, which involves both a normal-fluid flow and an oppositely directed superfluid flow. In these experiments Edwards and his colleagues were able to see the fluctuations and hysteresis associated with superfluid turbulence.

At Ohio State, Edwards and his collaborators confirmed a prediction by Isaak Y. Pomeranchuk that the helium-3 melting curve should have a minimum. The verification of the minimum—at 0.3 K—required the experimenters to develop techniques to measure the pressure of liquid helium at temperatures where it is isolated in the sample tube by plugs of slightly warmer (nearer 0.3 K) solid helium.

Edwards also played a very important part in the understanding of He^3–He^4 mixtures and thus in the development of dilution refrigerators, which have transformed low-temperature technology. A liquid mixture of He^3 and He^4 separates into two phases at low temperatures: One phase, rich in He^3, acts as a quasiliquid; the other acts as a quasigas. Moving He^3 from quasiliquid to quasigas ("evaporation") cools the system. It has been assumed from the third law of thermodynamics that the He^3 concentration of the quasigas would go to zero as the temperature fell, so that the dilution refrigerator

would become ineffective at relatively high temperatures. In 1961 Edwards and John G. Daunt showed theoretically that even at absolute zero the dilute phase should contain 6% He^3. In 1965, Edwards and his colleagues confirmed this experimentally. These insights greatly encouraged the development of dilution refrigerators, which now operate routinely to temperatures of a few mK. Edwards has carried out a number of other definitive investigations on helium-3 and helium-4 at low temperatures. Most recently he has been studying the surfaces of liquid and solid helium, using, for example, elastic and inelastic reflection of atomic beams of helium to investigate the structure and properties of the surface.

Han to receive first Dillon Medal

Charles C. Han, a chemist at the Center for Materials Science of the National Bureau of Standards, received the John H. Dillon Medal of the APS Division of High Polymer Physics at the Detroit APS meeting, March 1984. The medal recognizes Han's "outstanding accomplishments and unusual promise in research on polymer physics."

This new award is given in honor of John H. Dillon, one of the founders and the first chairman of the APS Division of High Polymer Physics. The award is restricted to candidates whose last degree was obtained not more than 10 years prior to the date of award.

Han received his PhD in physical chemistry from the University of Wisconsin in 1974. Since that time, he has been a member of the NBS scientific staff at Gaithersburg, Maryland. Han is internationally known for his scientific contributions in applying quasi-elastic light scattering and small-angle neutron scattering to problems in polymer physics.

Laser Institute of America awards 1983 Schawlow Medal

The Laser Institute of America has named Arthur H. Guenther as the recipient of its Arthur L. Schawlow Medal for 1983. The medal honors distinguished contributions to applications of lasers for science, industry or education.

Guenther received his BS from Rutgers University in 1953 and his PhD from Pennsylvania State University in 1957. Since then he has been at the Special Weapons Center at Kirkland Air Force Base, for two years in the Air Force and subsequently as a civilian. He has been chief scientist of the Weapons Lab since 1974.