chael B. Rossmann of Purdue University will receive the Elisabeth Roberts Cole Award; **Winfried Denk** of Lucent Technologies, Bell Laboratories, will garner the Young Investigator Award; and **Victor A. Bloomfield** of the University of Minnesota will be given the Distinguished Service Award.

Heading the list of five awards given this year by the Gravity Research Foundation for essays on gravitation was a submission by **Robert Myers**, a physics professor at McGill University. His piece was entitled "Pure States Don't Wear Black."

In September, **Susumu Takeda**, an emeritus professor of electrical engineering at Nagoya University in Japan, has received the biennial 1997 Penning Prize, sponsored by Philips Lighting. He has been honored for "his many, long-standing contributions to the field of plasmas and ionized gases, and in particular, for his work on an extension of Paschen's law to high-frequency discharges and waves in plasmas."

OBITUARIES

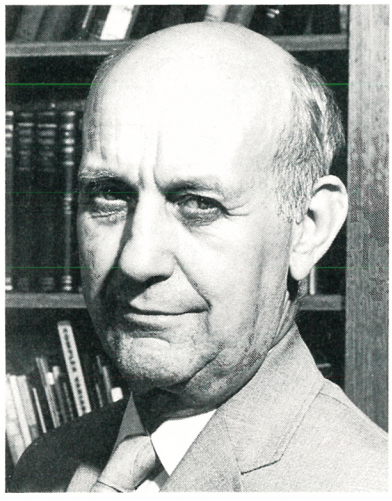
Harold Q Fuller

Harold Q Fuller, dean emeritus of the College of Arts and Sciences at the University of Missouri—Rolla and a professor emeritus of physics, died in Rolla on 30 November 1996 at the age of 89. Harold was known as an outstanding physics educator and for his strong support of the American Association of Physics Teachers and physics in general.

Born in Waynetown, Indiana, Harold graduated from Wabash College in 1928 with a BA in physics. In 1930, he earned an MA in physics at what is now the University of Illinois at Urbana-Champaign. Two years later, he earned a PhD in physics at the same university. Most of his research used spectroscopic methods to explore the structure of atoms and molecules.

During the Great Depression, he taught both at Illinois and at Illinois College (1932–38) and then moved to Albion College, in Michigan. For a time late in World War II (1944–45), Harold was with the Manhattan Project, working at Oak Ridge, Tennessee. Concurrently, he was also a senior physicist at the process improvement division of Tennessee Eastman Corp. After the war, he returned to Albion College to teach, but soon moved to the Missouri School of Mines and Metallurgy (now the University of Missouri—Rolla) to head the physics department.

Under his chairmanship, the department evolved from being a service organization in a mining school to becoming a nationally recognized science enterprise with a significant research base. The doctoral program, originally in engineering physics, was initiated in 1960 under Harold's leadership and was one of the institutions's first PhD programs. In 1964, in recognition of his leadership, the National Science Foundation awarded the department a department development grant.



HAROLD Q FULLER

This large grant, for which Harold was the principal investigator, was one of the first awards made under this NSF program.

Harold served as department chair from 1948 to 1970, when he was selected to be the first dean of Rolla's College of Arts and Sciences. Two years later, when, at the age of 65, he could no longer be an administrator, he returned to teaching physics and stayed on until reaching the mandatory retirement age of 70.

One of Harold's major contributions to science education was his direction of a series of 15 NSF-sponsored summer institutes held at Rolla to improve the teaching of science and mathematics in high schools. During the 1960s and 1970s, over 1000 science teachers attended those institutes.

Harold was an active member of the American Association of Physics Teachers, which honored his contributions to education with its Distinguished Service Award in 1978. With an endowment from Harold, AAPT established the Harold W. and Charlotte Mae Fuller Fund, which pays AAPT membership dues for international physics teachers.

Harold was always ready to help students, and his enthusiasm and notable character were responsible for recruiting numerous students to physics. These students included two of his sons, Richard and Robert, who are also physics professors and with whom he wrote *Physics: Including Human Applications* (Harper & Row, 1978). An active citizen, Harold was elected to several state and city offices. He was also one of Missouri's leading breeders of Corriedale sheep. He is clearly remembered and will be missed by many physicists.

EDWARD B. HALE
RALPH W. ALEXANDER JR
ROBERT H. MCFARLAND
University of Missouri—Rolla

Giovanni Astarita

Giovanni Astarita, a professor of chemical engineering and materials science at the University of Naples in Italy and of chemical engineering at the University of Delaware, died in Naples on 28 April, following a stroke on 24 April. He was 63 years old. His work spanned a wide range of interests in rheology, continuum mechanics, polymer processing and chemical engineering.

Astarita earned his master's degree in chemical engineering from the University of Delaware and his *laurea* (doctorate), also in chemical engineering, at the University of Naples in 1957.

In the fields of rheology and polymer processing, Astarita contributed extensively throughout the 1960s to studies of the mechanisms through which minute concentrations of macromolecules in flowing liquids reduce both turbulence levels and the resulting drag. He discovered previously unexpected discontinuities in the rates at which gas bubbles move through viscoelastic liquids and applied this understanding to later studies (in the 1980s) of devolatization processes in the production of plastics and rubbers. Astarita was one of the first, in 1970, to note the surprisingly high resistance of viscoelastic fluids to extensional deformations, a subject that was one of the core components of much work in rheology in the ensuing three decades. The use of plastics in many automotive and aircraft applications is critically dependent on their resistance to solvents. Astarita's work in this area served to organize the badly fragmented literature and identify worthwhile areas for further study. All these studies were carried out in both Naples and Delaware, although the majority of the work was with students and colleagues in Naples.

Astarita wrote or edited nine books,