and his students carried out an extremely successful program of fast-neutron cross-section measurements, which led to important new insights. These included the discovery of fast-neutron resonances in intermediate-weight elements. He also performed studies of polarization phenomena with fast neutrons, as well as systematic studies of neutron total cross sections as a function of energy and mass number, which revealed a periodic structure at odds with Bohr's compound nucleus model and which led to the formulation of the optical model of the nucleus by Herman Feshbach, Charles E. Porter and Victor F. Weisskopf. In addition, Barschall was the person responsible for an international sign convention for polarized particles from nuclear reactions. His work earned him many honors, including election to the National Academy of Sciences.

Barschall's research was severely affected in 1970 when his laboratory was destroyed by a terrorist's bomb aimed at the US Army Mathematics Research Center located in the same building. Deeply disturbed by the death (the blast killed a postdoctoral fellow in physics), destruction and lack of response by the departmental administration, Barschall took a leave of absence at Lawrence Livermore National Laboratory, where he worked on the development of intense neutron sources for medical applications and on studies of neutron damage to fusion reactor materials. After two years, he returned to Wisconsin, where he continued to teach and stay actively involved with undergraduates. But his research turned to medical applications of neutrons for cancer therapy.

Scientific publishing was a major interest for Heinz Barschall. He was the editor of *Physical Review C* from 1972 to 1987 and served as chairman of the American Physical Society's publications committee and the American Institute of Physics's information technology committee. After his retirement in 1986, his concern about the increasing cost of scientific journals led him to conduct a survey of the pricing of physics journals. His findings, published in PHYSICS TODAY, aroused the ire of a commercial publisher, who filed lawsuits against Barschall, AIP and APS in four countries. However, Barschall's thorough analysis and his determination to resist intimidation made him a hero to a generation of research librarians whose budgets continued to be threatened by the rising cost of scholarly journals.

Heinz Barschall was an exemplary mentor to the tens of PhD students whose work he directed and the thousands of undergraduates on whom he had a lifelong influence. He was a man of integrity—forthright, thoughtful and generous. We will miss his advice and his friendship.

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Włodzimierz Kołos

Włodzimierz Kołos, a pioneer of accurate quantum mechanical calculations for molecules, passed away in Warsaw on 3 June 1996, after a year-long struggle with cancer.

Born in 1928 in Pinsk (then in Poland, now in Belorussia), Włodek received his MS in chemistry from the Adam Mickiewicz University in Poznań in 1951 and his PhD in physics from the University of Warsaw (under the supervision of Leopold Infeld) in 1953. In 1962, he joined the department of chemistry at Warsaw University and remained there until his untimely death.

WŁODZIMIERZ KOŁOS

He is best known for his accurate calculations of energy levels and properties of the hydrogen molecule. He started this work in collaboration with Clemens Roothaan at the University of Chicago in the late 1950s. Włodek developed the first computer program to solve to very high accuracy the electronic Schrödinger equation for the hydrogen molecule. This program applied a basis set explicitly involving the interelectronic distance. Later, this basis set was improved by Włodek and Lutosław Wolniewicz and it is now known as the Kołos–Wolniewicz basis. In the early 1960s, Włodek (with Wolniewicz) computed several corrections to his previous result including adiabatic, nonadiabatic and relativistic effects. Those were truly novel developments, never before attempted for any molecule. This work resulted in theoretically predicted spectra and properties of hydrogen molecule whose accuracy was comparable to that of the experimental data.

In a famous development, Gerhard Herzberg revised his experimental value of the dissociation energy of H_2 after learning that the original value was significantly different from the theoretical value published by Kołos and Wolniewicz. This case demonstrated that theorists could obtain solutions to the Schrödinger equation for a molecule that could challenge highly precise spectroscopic measurements.

In addition to his theoretical work on the hydrogen molecule, Włodek also worked on many other problems. He made important theoretical contributions to the theory of intermolecular forces. He studied molecular effects in the β-decay of the tritium molecule, obtaining data critically needed to extract the electron neutrino mass from molecular tritium β-decay. These data are still utilized in all current neutrino-mass experiments. His research on muon-catalyzed fusion established important theoretical limits on the possible yield of muonic catalysis and contributed significantly to our understanding of this phenomenon.

In addition to research, Włodek devoted much effort to various educational and administrative activities. Known as a charismatic speaker, he delivered lectures on quantum chemistry that prompted Warsaw students—despite their dread of the subject—to vote for them on numerous occasions as being the chemistry department's best lectures. Włodek's enthusiasm about research attracted many students, and he created a strong research group at the university. In the years of communist power in Poland, Włodek never compromised his political and moral standards. Neither Włodek nor anyone in his group was ever a member of the Communist party, an unusual situation in those years. In 1980, he became the first democratically elected secretary of the Polish Academy of Sciences.

Although he was one of Poland's most prominent scientists, Włodek resisted any attempts to celebrate his achievements. Always encouraging but never pressing, patiently waiting for results and giving full credit for them to others, he guided his students and coworkers by his own example. He will be missed very much not only as a scientific and

moral authority, but also for his wonderful personality and warmth.

Bogumił Jeziorski
Lucjan Piela
University of Warsaw
Warsaw, Poland
Krzysztof Szalewicz
University of Delaware
Newark, Delaware

David Rittenhouse Inglis

David Rittenhouse Inglis, an emeritus professor of physics at the University of Massachusetts at Amherst, died at his home in Amherst on 3 December 1995.

Born on 10 October 1905 in Detroit, he graduated from Amherst College in 1928 and earned a DSc degree in theoretical physics at the University of Michigan in 1931. In 1932–33, to learn more about quantum mechanics as it was developing, he visited the leading centers of physics in Europe. He returned to his position as assistant professor at Ohio State University in 1934. There, Dave made the bold suggestion that the low-lying doublet in the ^{7}Li nucleus could be due to spin–orbit coupling. It was about 12 years later that his suggestion was confirmed using a Van de Graaff accelerator he built at Johns Hopkins University. The identification of the spin-½ level in ^{7}Li is believed to represent the first assignment of an excited nuclear level based on a microscopic, quantum mechanical theory.

David Rittenhouse Inglis

In 1938, following appointments at the University of Pittsburgh and Princeton University, he went to Johns Hopkins University, where he created a nuclear physics program with