

ties to grow on characteristic time scales of fractional powers of the plasma resistivity. Furth has designed various experiments to explore and control such "tearing modes"; for example, with current-profile shaping and feedback control of the plasma. He also did pioneering work in neoclassical and anomalous transport. Furth has done experiments on the Adiabatic Toroidal Compressor tokamak, and he proposed using the large auxiliary heating power input of the Tokamak Fusion Test Reactor at Princeton to

sustain the tail of a slightly non-Maxwellian deuteron-triton energy distribution. Experiments now in progress on the TFTR and on other large tokamaks are successfully testing this approach.

Furth received his PhD in physics from Harvard in 1960. He worked at Lawrence Livermore National Lab from 1956 until 1967. He then joined the staff of the Princeton Plasma Physics Lab and became a professor of astrophysics at Princeton University. He was director of the lab from 1981 to 1991.

(such as $C^{+5} + e^-$ and $O^{+7} + e^-$, in storage rings) and, more generally, retardation effects involving electrons, atoms, ions and surfaces.

Spruch received a PhD in physics from the University of Pennsylvania in 1948 and then worked at MIT as a postdoctoral fellow. He moved to New York University in 1950 and is currently a professor of physics there.

ASA APPLAUDS ACHIEVEMENTS IN ACOUSTICS

The Acoustical Society of America has awarded its Gold Medal, the society's highest honor, to Ira J. Hirsh, a Distinguished University Professor at Washington University. Hirsh, who received the medal at ASA's May meeting in Salt Lake City, was cited for "contributions to the understanding of the auditory process." During the 1950s Hirsh worked on the intelligibility of speech, auditory masking and auditory fatigue. Later he studied the perception of temporal order and the relation between temporal processing and other cognitive and communicative abilities. He is the author of *The Measurement of Hearing*, which became a standard text for audiologists and students in psychoacoustics.

Hirsh earned a PhD in experimental psychology in 1948 from Harvard, and he continued to work there for three more years. In 1951 he joined the research staff of Washington University's Central Institute for the Deaf, and from 1965 to 1983 he served as the institute's director of research. He is also a member of the psychology faculty at Washington, and from 1969 to 1973 he was dean of the universi-

LAWLER AND SPRUCH HONORED AT APS DIVISION MEETING

At the May meeting of the American Physical Society's division of atomic, molecular and optical physics, held in Chicago, James E. Lawler received the Will Allis Prize and Larry Spruch received the Davisson-Germer Prize.

The Allis Prize, which recognizes outstanding research on the microscopic or macroscopic behavior of ionized gases, was given to Lawler for "the elucidation of cathode fall phenomena in glow discharges through the measurement and analysis of spatial variations in the electric field, and for the development of new methods to determine atomic lifetimes and transition probabilities." Lawler was a pioneer in the development of optogalvanic spectroscopy, which he then used to study the electric field structure of glow discharge plasmas. His experimental and theoretical work on cathode fall phenomena has helped resolve classical problems in this area and also in the study of cold electrons trapped in the negative glow region.

After earning a PhD in physics from the University of Wisconsin, Madison, in 1978, Lawler was a research associate at Stanford University for two years. He then returned to Wisconsin, where he is now a professor of physics.

Larry Spruch received the Davisson-Germer Prize, which is given for outstanding work in atomic or surface physics, "in recognition of his numerous contributions to many areas of atomic physics, including variational principles and bounds, effective-range theory, statistical models of the atom, rearrangement collisions and retardation effects." Spruch is perhaps best known for the application of variational methods and associated bounds to problems in atomic few-body scattering experiments, which he carried out with coworkers. Most recently he and colleagues have studied retardation (Casimir) potentials for Rydberg atoms ($He^+ + e^-$) and Rydberg ions

James E. Lawler



Larry Spruch



Ira J. Hirsh

