

we hear
that

AVS division hands out awards

The plasma science and technology division of AVS: Science and Technology of Materials, Interfaces, and Processing distributed two awards during AVS's 53rd Annual Symposium and Exhibi-

tion last November in San Francisco.

Toshiaki Makabe, professor in the department of electronics and electrical engineering at Keio University in Yokohama, Japan, received the eighth annual Prize in Plasma Science and Technology. Makabe was chosen "for pioneering contributions to plasma modeling and diagnostics as applied to plasma processing science and technology," according to the award citation.

Lin Xu was selected as winner of the 2006 John Coburn and Harold Winters Student Award in Plasma Science and Technology for the "innovative, sound, and very profound" research he presented in his talk, "Nickel Atom and Ion Density in an Inductively Coupled Plasma with an Internal Coil." Xu is a graduate student working with Vincent Donnelly in the chemical and biomolecular engineering department at the University of Houston.

cant impact, encouraging theorists that some of the complexities of atomic scattering could be brought under control. Larry and colleagues introduced the Feshbach projection operator formalism to extend the variational-bound approach to positive energies. This formalism, which can be traced directly to Larry's work with Thomas O'Malley and Yukap Hahn and is now part of the standard equipment of atomic theorists, led to striking success in the analysis of Feshbach resonances in atomic reactions, a development that was crucial to the field of laser-atom cooling. Larry's research in this area culminated in a general prescription for constructing variational principles for any quantity of physical interest. With Edward Gerjuoy and others, he cowrote an excellent review on the subject. He summarized his work on rearrangement collisions at high impact velocities in a widely read review paper. In another extraordinary publication, he gave a lucid account of Thomas-Fermi theory and its application not only to atoms but also to problems concerning neutron stars, white dwarfs, QED, and the stability of bulk matter.

In a seminal 1961 paper on effective-range theory, Larry and his NYU colleagues showed that the polarizability of an atom results in a significant modification to the phase shift for low-energy electron-atom scattering, and they worked out the modification. This modification was useful for parameterizing data obtained experimentally. With Edward Kelsey, Larry showed that the customary r^{-4} polarization potential of Rydberg atoms must be supplemented by an r^{-5} interaction when the time it takes light to travel from the Rydberg electron to the core is comparable to a Rydberg orbital period. Working with James Babb and Martin Schaden, Larry devoted much of his time in the last years of his life to analyzing such retardation effects, primarily as generalizations of the Casimir effect, and gave simple heuristic derivations of results that take many pages to derive using the full formalism of QED.

In 1994 Larry retired from NYU and was appointed as professor emeritus. He continued his physics research, working, as he informed us, "harder than ever."

Larry was an intellectual leader and teacher, not only to the many students and research associates who were trained by him but, in a sense, to the community as a whole through his review papers, lecture notes, editorial work, and numerous personal interac-

obituaries

PHYSICS TODAY has changed the way it publishes obituaries. Some will continue to appear in print, but most will be available only online (see PHYSICS TODAY, October 2005, page 10). Subscribers can visit <http://www.physicstoday.org/obits> to notify the community about a colleague's death and submit obituaries up to 750 words, comments, or reminiscences. Each month, recently posted material will be summarized here, in print. Select online obituaries will later appear in print.

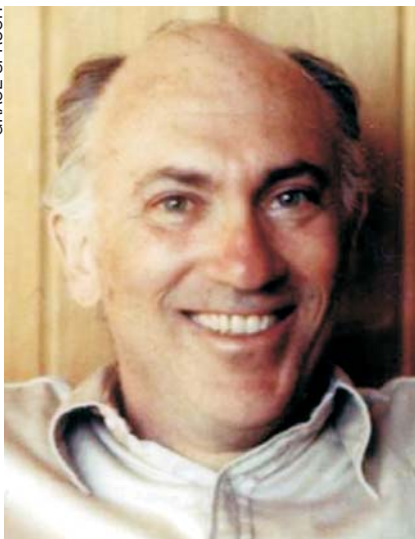
Larry Spruch

Larry Spruch, a prominent theoretical physicist, died on 10 August 2006 in New York City after a long and courageous battle with lung cancer. In a career remarkable for its steady productivity at the highest level, Larry covered a range of research subjects, including nuclear theory, atomic structure, scattering, reaction theory, a quantum electrodynamics (QED) approach to long-range atomic forces, and astrophysics.

Born in Brooklyn on 1 January 1923, Larry received an undergraduate degree in physics in 1943 from Brooklyn College. He earned his PhD in 1948 for his work on the beta decay of the triton under Leonard Schiff at the University of Pennsylvania. For the next two years, he was a postdoctoral fellow at MIT, working with Herman Feshbach and Victor Weisskopf on problems in nuclear physics. Larry then joined the faculty at New York University, which was his home from then on.

In the late 1950s, Larry and his NYU

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Larry Spruch

coworkers developed a powerful calculational approach, analogous to the standard Rayleigh-Ritz method for bound states, to atomic few-body scattering problems. The approach's elegant minimum principles had a signifi-