foundation of his widely used 1975 book *Films on Solid Surfaces: The Physics and Chemistry of Physical Adsorption* (Academic Press). For that corpus of work, Greg was awarded the 1985 Davisson–Germer Prize of the American Physical Society.

The adsorption experiments sparked Greg's interest in how the properties of a 2D system would cross over to those of a 3D system as the adsorbate thickness increased. His experiments on film growth renewed the surface physics community's interest in the theory of wetting and its experimental realizations. Greg was drawn to the phenomenon of surface melting—the wetting of the solid–vapor interface by its own liquid as the triple point is approached—and to the way in which the surface properties of crystals, such as their facets, are lost as the temperature of the solid is increased. With colleagues and students, Greg investigated the basic physics and the geophysical consequences of surface layers of water on ice and related phenomena in other materials.

Despite branching out in new directions, Greg never lost interest in physical adsorption, which he pursued with an infectious enthusiasm. His final paper, published last year, described a nanotube balance that uses the change in the tube's resonant frequency to measure adsorbed mass; its sensitivity is a few atoms.

Greg was known for a strong social conscience. From 2000 to 2009, Greg and Ernest Henley taught at the University of Washington's Transition School for gifted high school students. He wrote articles for the *Bulletin of the Atomic Scientists* because issues of peace were close to his heart. Greg was on the board of the World Without War Council of Greater Seattle and was chair of the university's graduate committee on conflict studies and of advisory committees to two US representatives. His scientific curiosity blended together with his conscience in a project to create impermeable ice barriers to contain hazardous nuclear waste, a problem of particular current interest.

With his passing, we have lost a probing and inquisitive physicist, a wise and valued mentor, and a warm and cherished friend.

Michael Schick
Oscar Vilches
University of Washington
Seattle

John Wettlaufer
Yale University
New Haven, Connecticut

Anthony Milner Lane

Anthony Milner Lane, one of the leading theoretical nuclear physicists of his generation, died from cancer at his home in Oxford, UK, on 9 February 2011. From the 1950s to the 1970s he made many significant advances in the theories and understanding of nuclear reactions and structure.

Tony was born in Trowbridge, UK, on 27 July 1928, and in 1946 he was awarded a grant to attend Selwyn College at Cambridge University, where he graduated in mathematics in 1949 and physics in 1950. Although he began his research in nuclear physics at Cambridge for his PhD, he completed it at Birmingham University under Rudolf Peierls, one of the innovators of nuclear science. His thesis was entitled "The Application of the Shell Model to Nuclear Reactions." Tony joined the theoretical physics division at the Atomic Energy Research Establishment in Harwell, which spearheaded nuclear science research in the UK. At the time, the division employed many talented physicists, including Tony Skyrme of skyrmion fame, John Hubbard, and John Bell, known for the hidden-variable theorem.

Anthony Milner Lane

During the 1950s and subsequent years, Harwell had many reactors and particle accelerators, and Tony soon revealed a talent for interpreting the data obtained from nuclear reactions induced by neutrons and charged particles. He rapidly became an expert in theories of both nuclear reactions and nuclear structure. He was invited by Victor Weisskopf to spend 1954–55 at MIT, and while there he took time to visit Princeton University to work with Eugene Wigner and Robert Thomas. In 1956 he collaborated with Thomas at Los Alamos National Laboratory and in 1957 visited Oak Ridge National Laboratory. For *Reviews of Modern Physics*, he wrote an article in 1957 on nuclear reactions, and in 1958 he and Thomas wrote a definitive review of the rigorous R-matrix theory of resonances; it became one of the journal's most cited reviews ever published.

In nuclear structure, Tony collaborated with J. Philip Elliott in 1958 to write about the nuclear shell model in an extensive article that makes many comparisons with nuclear data. Tony was unconventional for a theorist in that he examined experimental literature and noted in a "little black book" unusual observational features that he couldn't understand from existing theory. Those notes enabled him to develop new theories and identify new nuclear states—mainly collective states of nuclei and isobaric analogue states—seen in nuclear reactions. With Eric Lynn and other Harwell colleagues, Tony made significant advances in 1959–60 in the theory of nucleon-capture reactions and in 1964 discovered the importance of a two-stage mechanism in which the initial nuclear excitation of a giant dipole state greatly enhances subsequent photon emission.

Tony was in great demand abroad for lectures and consulting, and he spent many extended periods away from Harwell at numerous institutions, including several universities in the US, the Tata Institute of Fundamental Research in India, the Weizmann Institute of Science in Israel, and universities in Australia and South Africa.

In the early 1980s, Tony took up atomic theory related to the separation of isotopes by laser light. His several fundamental contributions included a 1986 proof that the multichannel quantum defect theory of atomic physics could be straightforwardly derived from R-matrix theory. Until his retirement from Harwell in 1989, he also worked on theories on the formation of meso-molecules related to the possibility of muon-catalyzed fusion. His more than 100 publications included the widely used textbook *Nuclear Theory: Pairing Force Correlations and Collective Motion* (W. A. Benjamin, 1964). He never had an interest in working in an administrative post.

Tony was a very kind person and a great family man. He endured some major illnesses, including tuberculosis, heart disease, and cancer, but he never let those setbacks quash his interest in work and enjoyment of life. A lifelong hiker, he enjoyed long walks wherever he happened to be living. In 1954, for instance, he made a day trip down and up the Grand Canyon. A snowstorm near the top exhausted his resources, and he was rescued on horseback by the local sheriff, at a cost of $25. And when he visited his in-laws in Israel, they shook their heads at the mad Englishman who would go for postprandial hikes in temperatures of 38 °C. He will be remembered by his many friends and colleagues as a modest man with a penetrating intellect and with many accomplishments.

Charles Clement
University College London
London, UK ■