

Bill's record of contributions to science, technology, and country was outstanding. He had much more to contribute, and his death in an outrageous terrorist attack was a terrible waste. We were proud to know him and, with his many other colleagues and friends, will sorely miss him.

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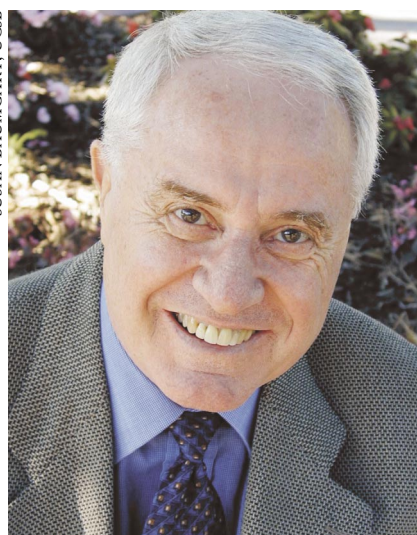
John Edward 'Jack' Estes

John Edward "Jack" Estes died of cancer in Santa Barbara, California, on 9 March 2001. Like the geographers of old, Jack, a pioneer in the fundamental and applied aspects of remote sensing and geographic information systems, helped us see the world in new and more complete ways.

Born in San Diego, California, on 21 July 1939, Jack earned his degrees in geography: his BA in 1962 and his MA in 1963 from San Diego State University and his PhD in 1969 from UCLA. His doctoral thesis, completed under Norman Thrower, was on multi-image systems for geographic research.

Jack began his faculty career as an assistant professor of geography at the University of California, Santa Barbara, in 1969 and, with David Simonett, formed the nucleus of what has become one of the nation's outstanding geography departments. Jack founded the department's geography remote sensing unit in 1972 and served as the unit's director throughout his tenure.

He was a pioneer in promoting innovative applications of space-based Earth observations and geospatial information by cartographers and geographers. Jack had extensive experience in the federal government, mainly with NASA and the US Geological Survey (USGS). The 1969 oil spill in the Santa Barbara Channel led him to work on the detection of marine oil pollution, and from the early 1970s to the time of his death, he conducted studies for NASA on land-use change, crop identification, water-demand modeling, and soil moisture conditions. Initially, in the 1970s, his primary regional focus was the southern San Joaquin Valley, but the work was of such wide applicability that, during the 1980s, he and his students extended it worldwide. He also applied remote sensing technolo-



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JOHN EDWARD "JACK" ESTES

gy to fire fuels monitoring and modeling, hazard and pollution detection, and resources management.

Jack had an exceptional ability to lead and guide graduate students, rather than direct them, in pursuit of their education and research objectives. More than 50 of his students received degrees and are now employed in prominent positions in various professional fields. His strength in teaching both undergraduate and graduate students lay in his thorough knowledge of his subject, his ability to organize and present complex materials, his sense of humor, and his sincere interest in his students' well-being. He had a splendid sense of loyalty to his colleagues and students, and he made many lifelong friends.

Jack's significant, generous contributions to the remote sensing and geographic information systems communities went far beyond academia. In the 1990s, he took extended assignments of several years' duration with both the USGS and NASA to assist in formulating national and international programs and policies for space-based Earth observations. Before his death, he had been the chair of the international steering committee for global mapping since its establishment by the United Nations in 1996, and he served on NASA's international space station science utilization advisory committee. On the NASA committee, he successfully worked to secure the Window Observation Research Facility, an optical-quality window in the space station that allows Earth remote sensing and that was successfully tested on a space shuttle mission in 2000.

As an outgrowth of his research,

Jack published widely in a variety of venues. His work covered such fields as monitoring marine oil spills, analyzing agricultural crop identification and water demand, preserving biological diversity, and integrating remote sensing information with expert systems. He was the editor of the interpretations and applications volume of the *Manual of Remote Sensing* (2nd edition, American Society of Photogrammetry, 1983). With Daniel Botkin, he edited *Changing the Global Environment: Perspectives on Human Involvement* (Academic Press, 1989), and with Jeffrey Star he wrote *Geographic Information Systems: An Introduction* (Prentice Hall, 1990).

Jack received the 1999 William T. Pecora Award, presented jointly by NASA and the US Department of the Interior to recognize outstanding contributions by individuals or groups toward an understanding of Earth by means of remote sensing. In 2001, NASA awarded Jack the Distinguished Public Service Medal in recognition of his pioneering achievements.

For more than three decades, Jack helped those who study and manage the Earth to realize the tremendous potential of emerging geospatial and information system technologies, and he promoted this goal through his teaching and practice in modern geography. Jack will be missed greatly, though his legacy lives on through his numerous valuable national and international scientific contributions and his students.

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Leslie Lawrance Foldy

Leslie Lawrance Foldy, Institute Professor Emeritus of Physics at Case Western Reserve University, whose pioneering work elucidated the theory of the multiple scattering of waves and the nonrelativistic limit of the Dirac equation, died on 18 January 2001 in Cleveland, Ohio, after suffering a heart attack on the previous day.

Les was born in Sabinov, Czechoslovakia, on 26 October 1919, into a family with Hungarian roots. His parents named him Laszlo Földi. In the turbulent times following World War I, he immigrated with his parents to the US in 1921. His father changed the family's last name and Les's first