

OBITUARIES

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John C. Light

John C. Light, emeritus professor of chemistry at the University of Chicago, died on 18 January 2016 in a Denver hospital following a severe illness.

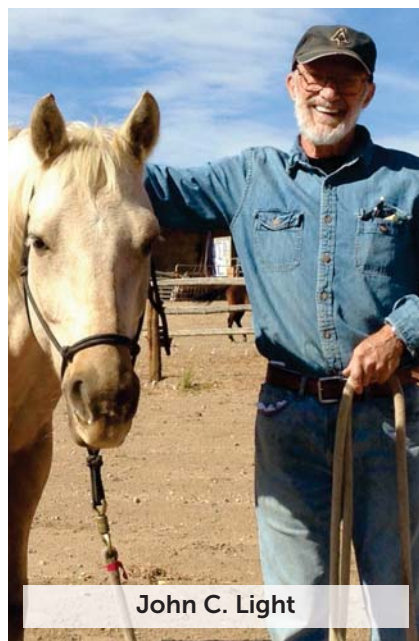
Born in Mount Vernon, New York, on 24 November 1934, John earned a BA with honors from Oberlin College in 1956 and, as an NSF predoctoral fellow, a PhD in chemistry from Harvard University in 1960. His dissertation research was done under the direction of Marshall Fixman. John spent two years, 1959–61, as an NSF postdoctoral fellow with Ilya Prigogine at the Free University of Brussels.

It was there, in early 1961, that I met him and helped recruit him to the University of Chicago. He joined the Chicago faculty in the fall of 1961 as an instructor in the chemistry department and in the James Franck Institute (then the Institute for the Study of Metals). He rose through the ranks to professor in 1970 and became professor emeritus in 2001. His continuity of service at the University of Chicago was punctuated twice, by positions as a visiting professor at Yale University in 1968 and as a visiting scientist at JILA in 1976.

In 2004 John and his wife Phyllis moved to Nathrop, Colorado, where they could enjoy skiing, hiking, and John's new passion for horseback riding, which fulfilled a boyhood dream. Nevertheless, he remained active in science; I last saw him at a meeting in Telluride in the summer of 2014.

I find it difficult to describe my friend of 54 years. It is not merely a matter of being too close to have perspective. The larger problem is to sum up in only a few words the personal traits, the accomplishments, and the aspirations of a complex being. Where does one begin and where does one end?

John was a notably superb colleague who participated fully and enthusiastically in all departmental and broader university activities. He was collegial, open minded, and flexible on diverse issues, and he was always ready to lend a hand. He served as director of the Materials Research Laboratory from 1970 to 1973 and as chair of the department of



John C. Light

chemistry from 1980 to 1982. John was also a successful educator and mentor; he had a very close and supportive relationship with his 31 PhD students and 25 postdoctoral research associates. That spirit was captured both by his saying that he learned much more from them than they learned from him and by his delight in their later successful careers.

Simultaneously with his active research program, John was editor of the *Journal of Chemical Physics*, arguably the preeminent journal in its field, for 14 years, from 1983 to 1997. His editorship was marked by the considerable growth of the journal, both in number of papers published and in diversity of topics covered, and by the implementation of modern submission and refereeing processes using programs that he wrote. The submission system he put in place was simple, efficient, and ahead of its time.

Creative scientists are fortunate in that they do something that is visible and that stands or falls on its own merits. The very visibility of an individual's contributions is in many senses the best memorial, since it mirrors the individual's development and vividly shows strengths and weaknesses. John Light was one of the pioneers of the modern theory of quantum dynamics of small systems as

applied to chemical reactions, inelastic collision processes, and more. His contributions, which are marked by a keen eye for innovative and practical analyses, are remarkable for both scope and significance. They helped guide the evolution from general but approximate descriptions of reactions, such as the phase space (statistical) theory of chemical kinetics, to accurate, fully quantum calculations of reactions of small molecules and of molecule–surface interactions.

The methodological advances and computational techniques that John and his students devised include exponential expansions, short iterative Lanczos propagation, transition-state wavepacket propagation, and time-independent scattering via *R*-matrix propagation. Many of those advances have been incorporated into standard practice and are widely used. In particular, John's groundbreaking development of the discrete variable representation provided a versatile, efficient means of executing multidimensional bound-state and scattering calculations and significantly extended the dimensionality of systems amenable to exact quantum treatment.

I can't possibly end this obituary without commenting on the warm personal relationship I had with John. When we met during my trip to Brussels in 1961, for whatever reason, the chemistry was good; we became friends immediately and remained good friends for life. John was a warm and generous person, loyal to his friends and the institutions he served, and an always rational voice in a sometimes irrational, even chaotic, environment. He will be deeply missed.

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Lev Borisovich Okun

Theoretical physicist Lev Borisovich Okun died on 23 November 2015 in Moscow. For his work he had received numerous national and international scientific prizes and awards, including the 1988 Matteucci Medal from the Italian National Academy of Sciences and the 1996 Bruno Pontecorvo Prize from Russia's Joint Institute for Nuclear Research. In 1981 he became the first