



## Tribute to John C. Light

This special issue of *The Journal of Physical Chemistry A* honors the many and wide-ranging contributions of John Light to theoretical chemical dynamics. The enthusiastic response to our call for contributions to this issue reflects the high esteem John enjoys in the theoretical chemistry community worldwide, and the profound and lasting impact that his work has had on this field.

John is currently Professor Emeritus at the University of Chicago. Born in Mt. Vernon, NY, 1934, John received his undergraduate degree from Oberlin College in 1956. He then went to Harvard for graduate studies, supported by an NSF Graduate Fellowship, obtaining his Ph.D. in 1960. His dissertation research was in the area of statistical mechanics, under the guidance of Marshall Fixman. Next, he spent two years at Université Libre de Bruxelles, Belgium, as an NSF Postdoctoral Fellow, working with Ilya Progogine on applying the formalism of irreversible statistical mechanics to chemical reactions in the gas phase. In 1961, John joined the Department of Chemistry at the University of Chicago as an Instructor. He has been there ever since, rising through the ranks, and becoming Professor of Chemistry in 1970. John was Director of the Materials

Research Laboratory, 1970–73, and Chair of the Department of Chemistry, 1980–82.

John's research accomplishments in theoretical chemical dynamics are remarkable for both their significance and scope. He and his group have made profound contributions to the phase space theory of chemical kinetics, time-independent and time-dependent quantum reactive scattering, discrete variable representations (DVR's), quantum transition state theory, .... A remarkable feature of this work is that it has been not only innovative and fundamental but also often genuinely practical, producing computationally superior algorithms! For example, John's DVR work has led to very versatile and efficient means of carrying out a vast array of challenging, multidimensional bound and scattering problems, pushing significantly the dimensionality of systems amenable to rigorous quantum treatment. These methodological advances, and many other techniques devised by John and collaborators over the years, have stood the test of time and are now in the toolbox of many theoretical chemists. John has been recognized for his contributions to science by being elected Fellow of the American Physical Society and of the American Association for the

Advancement of Science, and by election as a Member of the International Academy of Quantum Molecular Science.

What has also made John's name familiar to virtually everyone in the chemical physics community, theorists and experimentalists alike, is his outstanding tenure as the Editor of *The Journal of Chemical Physics* for fifteen years, from 1983 to 1997. For us, like for so many others, John and "JCP" were virtually synonymous for many years. John's involvement with the journal continues; since 1998 he has been its Senior Associate Editor.

Some 55 scientists so far (31 graduate students and 25 postdoctoral fellows) have been privileged to have had John as

a research mentor and participate in the exciting theoretical advances made in his group. One of us (Z.B.) was fortunate enough to have been a postdoctoral associate with John in 1986–88 and take part in the development and the implementation of DVR's. The other of us (S.K.G.) met John while working as a postdoctoral associate with another great University of Chicago chemical physicist, Stuart Rice, in 1984–86. Throughout the years we, and the chemical physics/physical chemistry community as a whole, have benefited from John's sage and pragmatic guidance. It is our great pleasure to dedicate this issue of *The Journal of Physical Chemistry A* to John.

**Zlatko Bačić**

*New York University*

**Stephen K. Gray**

*Argonne National Laboratory*