

## **In Memoriam: Professor Donald J. Kouri**

Professor Donald J. Kouri passed away on February 9, 2021. He was 82.

He joined the faculty of the University of Houston in 1967, having completed his doctoral studies in physical chemistry at the University of Wisconsin in 1965. He joined the faculty of the Department of Chemistry, but by the end of his career was a member of the Departments of Physics, Mathematics, and Mechanical Engineering as well. He was awarded the prestigious Cullen Distinguished University Chair in 1996.

Furthermore, he received the UH Outstanding Research Award in 1997 and the Esther Farfel Outstanding Faculty Award in 1982. The Farfel Award, a symbol of overall career excellence, is the highest honor accorded to a University faculty member.

Among the many awards he received were the Special Creativity Award from the National Science Foundation in 1992, the Humboldt Award in 1973, and the Alfred P. Sloan Foundation fellowship in 1972. Professor Kouri was a fellow of the American Physical Society and of the Weizmann Institute of Sciences.

Professor Kouri was best known for his seminal research on quantum mechanical treatment of reactive scattering processes, work that was based on the use of the Lippmann-Schwinger equation. This formulation, known as the Baer-Kouri-Levin-Tobocman (BKLT) equation, is even today, one of the standard approaches for deriving transition probabilities and cross sections in reactive scattering. His students and postdocs who studied the topic under his guidance have gone on to faculty positions at some of the top universities in the world, including the University of Cambridge, UCLA, Michigan State University, Indiana University, and New York University.

In the 1990s, Professor Kouri, in collaboration with David Hoffman of Iowa State University, introduced a class of wavelets referred to as Distributed Approximating Functionals (DAFs). Applications of the DAF methodology included signal and image processing, fluid dynamics, and reaction dynamics. His most recent work includes multi-resolution analysis important in nonlinear optics and an application toward the generalization of Heisenberg Uncertainty Principle. In addition, he had begun studies on CHIRP signals.

Since 2000, Professor Kouri focused on mentoring undergraduate student research in theoretical physics and chemical physics. In this time, he mentored 15 outstanding undergraduate students. His interest in undergraduate mentoring began through his service as a faculty mentor for the UH-Rice Quark-Net Program throughout its history. Several of his most outstanding students came from this program.

Professor Kouri and mentee Thomas Markovich received the Hyer Award from the American Physical Society for Outstanding Undergraduate Research and Mentoring. Several of his undergraduate mentees received the prestigious Goldwater Scholarship. These efforts were recognized with the UH Faculty Award for Mentoring Undergraduate Research in 2020.

Professor Donald Kouri was an extremely creative physical chemist and extended his research to a range of topics in chemistry, physics, and applied mathematics. He was a dedicated teacher who demanded the best from his students and postdocs. His passing is a great loss for the University of Houston.