IN MEMORIAM

Donald A. McQuarrie
Professor of Chemistry
UC Davis
1937 - 2009

Donald A. McQuarrie was born in 1937 in Lowell, Massachusetts and died in 2009 in Mendocino County in California. He obtained all of his degrees in chemistry. He received the B.S. degree in '58 at the University of Massachusetts at Lowell, his M.S. degree in '60 at Johns Hopkins University, and in '62 his Ph.D. degree from the University of Oregon. His Ph.D. mentor was Professor Terrell Hill, and his dissertation was entitled "A Theory of Fused Salts, a Stochastic Theory of Chromatography". After graduation Don started as an Assistant Professor of Chemistry at Michigan State University (1962-1963), and served as a research scientist at the North American Aviation Science Center (1964-1968). In 1968 Don moved to Indiana University as a Professor of Chemistry, where at the time he was the youngest professor in the university. UC Davis recruited him in 1978, where he remained until his retirement in 1994. Don McQuarrie's research interests were in theoretical chemistry, specifically in statistical thermodynamics of electrolyte systems and transport through membranes, stochastic differential equations, and nonlinear dynamical systems. He authored or co- authored 10 textbooks and 95 scientific papers, and his textbooks were world famous and had very long publication runs. For example, his Statistical Mechanics and Statistical Thermodynamics books were in print for forty years and are noted for their clarity in explaining the material. His honors include an NSF Fellowship, a Guggenheim Fellowship, a guest Research Fellowship of the Royal Society, and service on boards such as the Editorial Board for the Journal of Physical Chemistry and the Graduate Record Examination Committee.

Don McQuarrie was truly a scholar's scholar. His pedagogy in teaching and writing was especially apparent as is evidenced by the success of his many textbooks over the years of his career. His standards for innovation in research were high and he mentored his students to achieve the standards he set. Professors enjoyed being the reader on his students' Ph.D. dissertations. He was a constant source for the stimulation of the intellectual life of the chemistry department. He organized special study groups on topics of current theoretical interest. Participants were expected to assume responsibility for leading the discussions in round robin fashion and his questions and comments were penetrating and insightful. As Emeritus Professor W. Fink recalls, Don regularly posed paradoxes and puzzles for interested parties to resolve and they inevitably required subtle solutions and when a consensus was arrived at, they often had messages that challenged conventional understanding. Don was one of those people who brought a fresh perspective untrammeled by bias or prejudice to every controversy. He was constantly a fresh breeze blowing through the chemistry department halls.

He had an influence on many undergraduate students, some of whom later became successful scientists. For example, Peter G. Wolynes, Bullard- Welch Foundation Professor of Science, Professor of Chemistry, Rice University, and a National Academy of Sciences Member, recalls a memorable meeting with Prof. McQuarrie when he was enrolled in Indiana University's Northwest campus, and was pursuing a project that involved statistical mechanics to understand steric effects of SN2 reactions. As Peter recalls, his approach was primitive, and the physics was wrong- headed, but his organic professor thought it was interesting even though he couldn't understand it. He suggested that he should go to Bloomington to talk about his ideas with a theoretical chemist – Don McQuarrie. McQuarrie met with him for an hour and even though he pointed out the error in his approach, he encouraged him to come to Bloomington to finish his degree and keep working

on the project, which he did. While there, he mostly interacted with Bob Roberts who was an assistant professor, but at Bloomington he was exposed, as he describes, to an extraordinary group of theorists: McQuarrie, Roberts, Peter Langhoff and John Griffiths (who had come up with the idea of the prion years before). They were all theorists who respected both rigor and originality. Their attitude had a profound effect on him. McQuarrie at that time had already turned to studying biophysical problems, and as Peter recalls, Don would push him to work on "the Brain" but he resisted on the basis that subject "wasn't chemistry". In response, McQuarrie would say, "It doesn't matter what something is called, it just should be great science." It took Peter many years, as he said to really accept that idea, but eventually he did and it shaped his thinking and his work for the rest of his life.

After his retirement, Don continued to work on writing new textbooks and updating his older ones up to his death. He and Professor John Simons wrote a physical chemistry text entitled, "Physical Chemistry, A Molecular Approach" affectionately known to students as the Big Red. However, Don's life- long goal was to write a mathematical methods textbook. The writing of "Mathematical Methods for scientist and engineers" was a labor of love that was published by University Science Books. His last work was a revision of the General Chemistry textbook with Dr. Ethan Gallogly. He envisioned a radical change in a standard text. He felt atomic and molecular structure must be understood before students could understand the behavior of molecules.

Don thoroughly enjoyed his final years in retirement at Sea Ranch. In addition to his writing he devoted time to community service in the Sea Ranch/ Gualala area. He joined the Gualala Lions Club where he worked to provide eye care for everyone who needed it and he was especially proud that every child received eye examinations and glasses if needed. He volunteered with the Community Resource Connection that provided transportation for those who were no longer able to drive and Don played bridge with his wife, Carole, after many years of not playing. He was an excellent player, who was always encouraging and gave positive comments to his partners. Because so many of activities were of a sedentary nature, he walked his dog twice a day, often up to four miles in the morning.