



## *IN MEMORIAM*

Mare Taagepera  
Senior Lecturer SOE of Chemistry  
UC Irvine  
1938 – 2013

Professor Mare Taagepera, 74, faded peacefully on April 24, 2013 in Irvine, California. Mare was a distinguished teacher, educator, and researcher who brought her intense passion, strength, and determination to any problem she tackled. She made significant contributions to the Department of Chemistry, to UC Irvine, to the greater community, and to her native Estonia.

Mare Rünk was born on May 16 1938 in Narva, Estonia. At 5, she decided to become a chemist when she mixed together her mother's cosmetics and someone said this was chemistry. In 1944, she fled to the west along with her mother, to avoid the Soviet terror. Their family moved to New Jersey in 1949. Mare carried out her undergraduate studies at the University of Delaware from 1956-60 and in Finland from 1960-61. She received her Ph.D. in Physical Organic Chemistry from the University of Pennsylvania in 1970.

Mare first came to UC Irvine as a postdoctoral fellow with Professor Robert Taft in 1971. Since then, she taught at UC Irvine, becoming a Senior Lecturer in Chemistry. From 1996 on, she was also a Visiting Professor at the University of Tartu in Estonia. Her lifelong ambition was to make chemistry relevant and accessible to everyone. Not only was Mare passionate about teaching chemistry to UCI students, she worked tirelessly to transform science education in general, and especially K-12 science education in Orange County. Probably if one polled the teachers and administrators of Orange County K-12 schools to name one UCI faculty member, Mare would be the most often remembered person. Mare helped found the UCI Summer Science Institute (SSI) in 1982 with the goal of providing continuing education for high school teachers. Started as a small program with the Irvine School District to further the science education of, mostly,

elementary school teachers, this program expanded to include all grade levels and became a model for a statewide program – The California Science Project – that continues to this day. This program gained national recognition as a way to involve university faculty working with K-12 teachers to impact the teaching of science from Pre-K to grade 12.

In association with the Summer Institute, Mare created a “Saturdays for Science” program for 4<sup>th</sup> and 5<sup>th</sup> grade students. Up to 100 students for four successive Saturdays came to UCI and experienced exciting demonstrations of new ideas in physics, chemistry and biology, presented by UCI faculty. She also was instrumental in obtaining grants to support special versions of the SSI for teachers in collaborating districts, especially those with high minority student enrollments, including Compton, Santa Ana, and Newport Beach (west-side). One such program, the “Crossover Teacher Project” recognized the difficulty of recruiting science teachers and accepted teachers qualified in other disciplines to train to be teachers of science.

Mare was especially intrigued by the notion of involving industry-based scientists and administrators in efforts to change the image of science in the K-12 schools. She formed a Science Advisory Board to act as a steering committee for UCI’s SSI and initiated a funded program “Science Technology and Society”, to prepare teachable units about the industry applications of science linked to understanding important science concepts.

Mare was not only a pragmatic individual, seeing every-day teachers as a conduit for science education reform, but also a keen researcher, eager to explore the mechanisms by which students become active learners of science. Working with colleagues from the physical and social sciences, she created a study group using real K-16 students as both researchers and study subjects. One of several conclusions reached by this effort was that students do not necessarily learn complex ideas or theories in the sequence that “experts” in the domain would forecast. Thus teaching sequences, usually designed by “experts”, needed to be re-formulated.

Mare was active in the American Chemical Society Division of Chemical Education. She served on the National Academy of Sciences Committee on Research in Science and Technology Education, the Division of Behavioral and Social Sciences and Education of the National Research Council, and as the Chair of the California Curriculum Commission. Mare was also active in the UCI Academic Senate, and received the 1989 Lauds and Laurels Professional Achievement Award. Although Mare officially retired in 1994, she never stopped teaching and serving the public. In her later years, she was a Visiting Professor at the University of Tartu in her native Estonia. She taught and implemented parallel courses in Tartu, while maintaining those at UCI. In 2005 she founded the idea of a “Forest University” summer course to discuss broad social issues with students and national leaders in Estonia, which still keeps going. For this endeavor and for the introduction of the concept of discovery science in Tartu, the President of Estonia decorated her in 2012 with the White Star, an award given for civilian contributions.

Among her many activities, she developed a general education course, Chemistry Around Us, which she taught as recently as winter quarter, 2013. The course description nicely summarizes Mare's desire to teach the importance of chemical knowledge to a general audience: "Topics involving chemistry are in the news daily. What is in the water we drink or the foods we eat? Should we use food colors? Should we use biodiesel fuels? Is there really global warming? What is the role of drugs in our everyday life? During our discussions you will learn about some basic chemistry concepts, which will make it easier to understand how chemistry affects your everyday life and plays a role in our global challenges. After understanding the issues we will use risk/benefit analysis to find optimal solutions."

In addition to her husband Rein (Professor Emeritus at UCI), Mare is survived by her daughters Tiina and Salme, son Jaan, seven grandchildren, and sister Epp Raun, and their families.

George Miller  
Ramesh Arasasingham  
Rein Taagepera