

Marilyn Morgan Olmstead (1943–2020)

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It is with deep sadness that we observe the passing of Marilyn Morgan Olmstead, Professor Emerita of Chemistry at the University of California, Davis, on 30 September 2020. Marilyn was one of the world's foremost full-ene crystallographers, had an H-Index of 91, had published over 1100 papers in prestigious scientific journals and had been cited more than 34 000 times. She was a Fellow of the American Chemical Society and the American Crystallographic Association.

Marilyn was known internationally as a leader in the crystallography of fullerenes or bucky-balls. She co-pioneered a technique to co-crystallize fullerenes to give far superior structural data than standard crystallization methods.

Using this technique, she elucidated the structures of numerous new empty-cage, functionalized and endohedral fullerenes, including the first ever endohedral metallofullerene and the first endohedral metallofullerene violating the 'isolated pentagon rule'. Her crystallographic prowess also spurred breakthroughs in coordination chemistry, organometallic chemistry, organic synthesis and solid-state inorganic chemistry. She characterized the first boron radical and several first instances of metal–metal multiple bonds. Marilyn's achievements include crystallographically characterizing the fullerene with the most atoms inside it, the fullerene that was, until recently, the largest endohedral fullerene and the first ever fullerene containing a heptagon.

She was a visiting scholar at research institutes in numerous countries, including Malaysia, China, Germany, the UK, India and Switzerland. Despite being one of the most published and cited members of the Department of Chemistry at UC Davis, Marilyn did not hold a faculty position until the year 2003 when she was 60 years old.

Marilyn made a significant contribution to the work of the International Union of Crystallography. She was an active member of the Commission on Journals and acted as a Co-editor of *Acta Crystallographica Section E* from 2000 to 2011. In this time she handled over 750 papers for the journal.

Aside from being a groundbreaking crystallographer, Marilyn was an extraordinary mentor and a patient and enthusiastic teacher. She befriended all her mentees with her warmth and kindness, in particular taking many international students under her wing. She was a vocal advocate for graduate students, constantly pushing for them to receive support and better research infrastructure. Marilyn was also a mentor and a friend to junior faculty, especially other women scientists. She retired in 2015 but continued active research and advising. During the COVID-19 shutdown, she was remotely advising a half-dozen graduate students and was branching into an entirely new field of chemistry. Her death is an irreparable loss to the scientific community and her friends, and a tragedy to her family.

Marilyn is survived by Alan, her husband of 53 years; her daughter Janis and her children Dylan and Emma; her son Nate, his wife Erin and their children Avery and Evan; and her sister Marcia Trombold. Marilyn was preceded in death by her son, Eric. In lieu of flowers, the family invites well wishers to help carry on Marilyn's work by contributing to the Marilyn M. Olmstead Inorganic Chemistry Graduate Research Fund (<https://give.ucdavis.edu/CHEM/324712>).