2016 Agnes Fay Morgan Research Award

Dr. Vy Maria Dong

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Dr. Vy Dong was born in Big Spring, Texas and spent early childhood in west Texas before moving with family to Anaheim, California. She graduated with honors from UC Irvine where she majored in chemistry and completed a thesis project with Larry Overman. After graduation, she joined David MacMillan's group at UC Berkeley, and then moved with his group to Caltech to complete her doctoral studies. Her Ph.D. thesis featured variants of the zwitterionic-Claisen rearrangement and a total synthesis of erythronolide B. As an NIH postdoctoral fellow, Dr. Dong pursued training in organometallic and supramolecular chemistry with Robert Bergman and Kenneth Raymond back at Berkeley. She began her independent academic career at the University of Toronto, where she was promoted with tenure and named the Adrian Brook Professor. After six years in Canada, Dr. Dong returned to the United States to assume a full professorship at her alma mater. Professor Dong's research team focuses on designing methods for preparing heterocycles and macrocycles, with a specific emphasis on strategies that feature tandem catalysis.

In an independent academic career of less than 9 years, Dr. Dong has emerged as a world leader in the invention and development of catalytic reactions for the synthesis of valuable organic molecules. Research in her laboratory has advanced catalytic hydroacylation as a unified approach for transforming C–H bonds into diverse motifs, including lactones, esters, ketones, and amides. The methods Dr. Dong has developed minimize chemical waste, increase synthetic convergence, and reduce the number of synthetic steps needed to prepare structurally intricate (and valuable) carbonyl compounds. One highlight of her research to date is a recent publication in Science reporting a rhodium catalyst that transfers the equivalent of hydrogen and CO between an aldehyde and an under mild conditions and without evolving gases. This is a pioneering report that is certain to usher in dehydroformylation as an important transformation in the chemical synthesis of high-value chemicals. Overall, Dr. Dong's research program aims to achieve more green and versatile strategies for chemical synthesis of heterocycles, polyketides, and other biologically important molecules

Dr. Dong has authored over 50 publications and has received numerous awards including but not limited to an Alfred P. Sloan Research Fellowship in 2009, and in 2010, an American Chemical Society Arthur C. Cope Scholar Award. This latter recognition is the most prestigious award of the American Chemical Society (ACS) for young organic chemists

Further indications of the impact of Dong's research in the area of catalysis are found in the remarkable number of invited lectures (>150) she has presented since beginning her independent academic career. Among these are invited lectures at 9 ACS National Meetings, the biennial ACS Organic Chemistry Symposium, The Welch Foundation Conference, and invited lectures at 7 different Gordon Research Conferences. That her reputation is truly international is apparent from her having presented ~25 invited lectures in China, Japan, UK and Switzerland.

Iota Sigma Pi is happy to recognize Dr. Vy Dong's research achievements and her contributions to her profession with the 2016 Agnes Fay Morgan Research Award.