

Classmates we can be proud of: JoAnne Stubbe CW'68



by Mona Shangold, CW'68

When JoAnne Stubbe and I were classmates and good friends at Penn, both majoring in chemistry, I recognized her as a star destined to make important contributions. Since graduation, I have followed her career as a woman chemist and MIT faculty member, and I am sharing her story with all of you now because I know you will all take pride in her accomplishments too.

After graduation, JoAnne received a PhD in organic chemistry at Berkeley and then completed postdoctoral fellowships at UCLA and Brandeis. She held faculty positions at Williams, Yale, and Wisconsin, before moving to MIT in 1987, where she held joint appointments in the MIT Chemistry and Biology Departments. She is now the Novartis Professor of Chemistry, Emeritus.

JoAnne's most significant research illuminated the mechanisms by which ribonucleotide reductases harness free-radical chemistry to convert the building blocks of RNA to the building blocks of DNA. These mechanisms were unexpected, since free-radicals are associated with uncontrolled DNA damage. These reductase enzymes are essential for cell viability and are the successful targets for current cancer treatments. It was JoAnne's seminal studies that led to both the development of a major drug and our current understanding of how these therapeutics work. She has also contributed to our understanding of the mechanism by which the antitumor drug Bleomycin kills cancer cells by binding to DNA and mediating radical-dependent double-stranded DNA cleavage.

She has received many very prestigious awards for her groundbreaking research and distinguished career, and I list only a few of the most notable here: the National Medal of Science, the Welch Award in Chemistry, the MIT Killian Faculty Award, the Franklin Institute's Benjamin Franklin Medal in Chemistry, the City of Philadelphia's John Scott Award, the Penn Chemistry Distinguished Alumni Award, the National Academy of Sciences Award in Chemical Sciences, and recently the 2017 Pearl Meister Greengard Prize (an international award honoring outstanding women scientists).

As impressive as her scientific achievements have been, JoAnne considers her most important work to be teaching young people and getting them excited about science.

Although I recognized JoAnne's potential for important contributions when we were undergraduates at Penn, her accomplishments have exceeded even my expectations, and I know you all share in my pride in having her as our classmate. You will be glad to know that JoAnne plans to attend our 50th Reunion in May --- so you can catch up with her in person then!