

President of the Tennessee Academy of Science for 2017



Dan Swartling

I was born in Black River Falls, Wisconsin. At the age of four my parents moved to Winona, Minnesota, which is my hometown. Winona is a city of around 30,000 located on the Mississippi River in southeast Minnesota. It is also a college town: at the time it was the home of St. Mary's College, St. Teresa's College, and Winona State University. St. Teresa's has since merged with St. Mary's, and Winona State continues to be an important science and engineering school.

As a child my parents often bought me books to read and encouraged me to explore the sciences. My father was a radioman in the Air Force, and he would let me help him rebuild radios. He also taught me Morse code. It was his mentoring that led me to obtain my first Amateur Radio license at the age of 12. My grandfather was a jeweler and watchmaker, and I would often sit in his shop and watch him repair cuckoo clocks. He also made a miniature lathe from an old Singer sewing machine. I was always fascinated with electronics and mechanical devices. As a child I pretty much took apart every toy I owned just to see how it worked. Sadly, not all toys made it back together after being dissected for curiosity's sake.

My mother was into botany and horticulture, and we built a rather large garden together. She introduced me to herbs and medicinal plants, and I often "borrowed" her blender to chop up plants in order to see what I could extract from them. My parents bought me my first chemistry set around the age of 12 as well and the rest is history. I was hooked on running reactions and devising my own experiments.

I started doing chemical demonstrations in 7th grade to promote the area science fair. I would go around with my science teachers and blow up lycopodium cans, which simulate grain dust explosions. I also did three 30-minute "magic" shows during the science fair while kids rotated through lunch after being judged by the high school faculty. I did this for 10 years until I graduated from college, and really learned a lot of chemistry in the process. I graduated from high school in 1978, but took a few years to work and figure out what I wanted to do before entering college in 1980.

I attended Winona State University and received my BS in chemistry in 1985. I did research under my organic professor, David J. Rislove. I was fortunate to also work on a summer project sponsored by 3M, which was to make functionalized metalloporphyrins to be linked to a polymer backbone in order to make conductive polymers. Rislove also encouraged me in my obsession with plants as "living chemical factories", which has led to my current work in green and sustainable chemistry.

August of 1985 led to my moving to Grand Forks, North Dakota to attend graduate school at the University of North Dakota. I chose to work for Donald Bergstrom in the area of bio-organic and medicinal chemistry. My PhD dissertation was on the synthesis of fluorinated analogs of nucleosides that could be potential antiviral agents. We were looking for compounds that might be better than AZT for inhibiting the AIDS virus. My advisor decided to move his research lab to Purdue University so I graduated from UND in August of 1989 and spent a year helping him get established in the department of medicinal chemistry and pharmacognosy at Purdue.

In August of 1990 I moved to the University of Chicago for a two-year position at the Ben May Institute for Cancer Research. I worked for Ron Harvey making polycyclic aromatic hydrocarbons and linking them to nucleotides for conversion into DNA oligomers. Here is where I truly learned and did a lot of synthetic reactions and gained an enormous amount of experience.

I always wanted to have an academic position, and I was lucky enough to be selected as a Camille and Henry Dreyfus Scholar for a two year position at Southern Methodist University in Dallas, Texas. I got to mentor undergraduates in research projects and to teach classes. It was this position that led to my being competitive in the job search that called me to Tennessee Tech University in August of 1994. I have been at TTU ever since. Being at Tennessee Tech has allowed me to mentor undergraduate and graduate students and to change my research interest to developing greener and more sustainable ways to produce organic molecules. It has been and continues to be a very rewarding experience.

As you can see, I am who I am and where I am due to the influence of family, friends, teachers and colleagues. You never know who you might impact each and every day as you interact with other people. We, the members of the academy, are called to be science ambassadors. We are called to promote science and to educate those around us on the impact of science on

society. To nurture an understanding and interest in science in others is one of the most rewarding things that we can do.

I became a member of the Tennessee Academy of Science in 1996 and have had myself and my students give presentations over the years. I helped to host the annual fall meeting twice here at Tennessee Tech. I served as chair of the chemistry division for many years and have been on the executive committee for the last four years. I was nominated to be

President-Elect in 2016, and now serve as the president for 2017. I have had the privilege to work with many talented and hard-working people on the TAS Executive Committee. I look forward to serving my year as president and hope to continue service to the Academy in the future. Thank you, TAS members, for your contributions to the academy, for promoting science and science education, and for mentoring current and future scientists in Tennessee.