

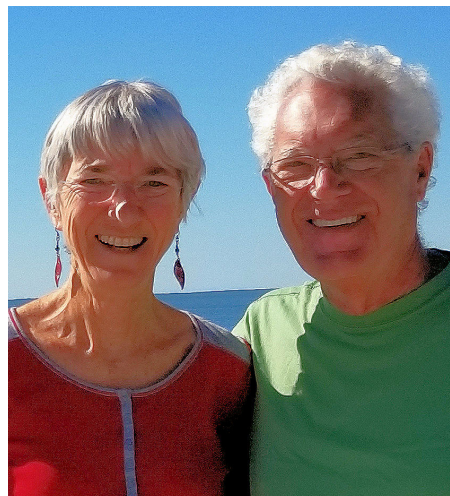
## Wendy Farmer Boss

### How did you spend your career?

What determines your career path? It is a combination of both genetics and environment. You can affect the environment and make the most of your genetics. My career was affected by the environment created by many women who went before me. In the 1970s, frequently women were not given the opportunity to become faculty members, and very few were able to do so at the same institution as their spouse. I considered myself a diversity/spousal hire and, at the time, was grateful for the opportunity. If you feel this way, hold your head high and take advantage of the opportunity to make a difference for those who will follow. You can affect the environment and make the most of your genetics. Enjoy the journey.

My career was a random walk influenced by the many people I met on the way, beginning with my very supportive spouse, who is an excellent cook and host and who gave me the confidence to do what I did. Inspiration came from colleagues and collaborators and those postdocs and students I had the privilege to mentor and teach.

I was born in Canada. My family immigrated to the United States when I was 6 years old. My dad was a chemical engineer with a master's degree from the Massachusetts of Technology. He worked in mining, then refining uranium in Port Hope, Ontario, and later mining



and refining phosphate for fertilizer in Florida, Texas, and Virginia. He was very quiet. My mother was an English teacher until forced to retire when she married. She could memorize anything, tell great jokes, and dance like a professional. Were my parents disappointed I was a reclusive nerd, standing 6 feet 1 inch tall and weighing 115 pounds, as a teenager? If so, they didn't show it. They were very supportive as I set forth to study organic chemistry at Wake Forest University in 1964.

I lost myself in the Wake Forest Chemistry Department when I was given an NSF summer research fellowship. It was heaven, and I was hooked on research. There was only one guy taller than me in the Chemistry Department, Charles Boss. He was also smarter and helped me with the computer lab, which at that time involved using hundreds of punch cards. We went to different graduate schools, he to Indiana University in Bloomington and I to the University of Washington in Seattle, where the local bars and antiwar protests got in the way of my efforts to learn

how to move electrons on the page to synthesize new compounds. As a result, when Charles was drafted into the military in 1969, it was all I could do to get a master's degree. We were married in 1970, and a little over three years later we returned to Bloomington, where he resumed his PhD studies in chemistry with the stated goal of becoming a faculty member someday.

I had worked as a technician while Charles was in the Navy in Charleston, South Carolina; however, there were few jobs available in Bloomington. I was fortunate to find a part-time position purifying lipids and synthesizing spin-labeled lipids. I decided to take a course in plant physiology just for fun. What made studying plant physiology sound intriguing? Perhaps it was that my dad enjoyed gardening, or that my aunt and uncle had a farm in Quebec. Perhaps it was because as a technician at the Medical College of South Carolina while Charles was in the Navy, I had to kill 200 mice in one day, or maybe because, just for fun, I read Peter Martin Ray's book *The Living Plant* and learned that plants can sense the number of hours of sunlight in a day. Most likely, it was all of the above.

Fortunately, the Biology Department at Indiana University admitted me into their PhD program, and I didn't look back. When Charles was hired as an assistant professor at North Carolina State University, we moved to Raleigh, and I found a postdoc position in what was known at the time as the Department of Botany.

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I learned how to generate embryonic carrot cell cultures. The Botany Department was a classical department that didn't really know what to do with someone who wanted to study membrane lipid fluidity using electron spin resonance, but they were tolerant and let me have the freedom to do my own thing.

### What important advice would you give to individuals at the start of their career in plant science?

*How do you generate a positive and stimulating environment? Gain inspiration by going to national and international conferences, where you will find new colleagues, collaborators, and lifelong friends. This was something I learned at Indiana University, where the faculty encouraged graduate students to attend regional and national meetings. My first ASPB meeting was in New Orleans, and attendees stayed in dorms without air conditioning that summer. It was also a time when graduate students gave research talks. I gave my first 15-minute talk in 7 minutes, and I think that included time to fix the broken projector. In spite of this, some people were kind enough to compliment me, and I returned home with new respect from my mentor for what I was attempting to do. I was so inspired and motivated!*

For me, another source of inspiration was teaching physiology. Yes, the first semester was terrifying, but explaining physiology to students inevitably led to questions that had not been addressed, ideas for research projects for students,

and ultimately several publications. Share your love of research with your students, and you will be inspired as much as they are. Science is an iterative process, and your continued quest to understand and define fundamental mechanisms will bring new insights.

As a faculty member, it is easy to be overwhelmed with research and teaching and to not appreciate how valuable your success is to the university. Be sure you have the facilities and environment to succeed. Work with colleagues, and collaborate and share equipment as much as possible. Realize that the administrators at your university will judge you based on the grant funding you generate, because they are judged by how much money their colleges and departments bring in. Don't be discouraged by this. Know that your research funding indirectly pays administrators' salaries, so they want to provide you the opportunity to succeed. It would cost them a lot to replace you with a new faculty member.

Once you have tenure, take sabbaticals every opportunity you get. You will learn so much, not only about science but also about ways to run a lab. Sabbaticals are essential to retool, gain a broader perspective, and network with like-minded colleagues.

*How do you network and teach your students to do it? Take your students to meetings. They should not be afraid to speak up and engage others. Let them know that scientists love having someone come up to them after a presentation and talk to them. Share your love of science and solving myster-*

ies. In addition, international meetings will broaden your network and provide valuable new perspectives. At conferences and workshops, you will meet potential students, postdocs, collaborators, and lifelong friends and gain new insights. My first collaborators were people I met at such meetings. They became lifelong friends and helped me get tenure. We wrote proposals, manuscripts, and books together and at times shared students and postdocs.

Within your department, volunteer to serve on committees. Don't wait to be asked. For example, the graduate student selection committee will give you an opportunity to reach out to potential students and recruit them. Also, consider helping with the seminar committee. Invite and host seminar speakers who will be interested in your research and who could write letters of support when you are considered for tenure.

*How do you get involved in ASPB and other national and international societies? Reach out to society leaders and volunteer. This will not only help you network but also contribute to your tenure and promotion when the time comes.*

Although I began my studies with the goal of becoming an industrial organic chemist, I became a plant physiologist and eventually a faculty member. In hindsight, I think there could have been no better career for me. So why did I retire after 36 years at NC State? Because we hired a wonderful group of diverse young colleagues who were smart and would do a great job. It

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has been a privilege to retire and watch them succeed.

In summary, a career is not a straight path. It has many ups and downs, but networking with colleagues and having a supportive spouse or partner can help

smooth out the troughs and create the peaks. I look at my career as a random walk that was influenced by many. Was it genetics or environment? The answer is, of course, both. Make use of opportunities to make yours the best possible career.

Good luck, and enjoy the ride.

### **Academic Family Tree**

<https://academictree.org/plantbio/tree.php?pid=399638>