



The Road Taken — Peggy Bruce

I recently attended a meeting in a town known as much for its legendary science as for its legendary beauty — La Jolla, California. True to promise, each day dawned clear and sunny — and each evening ended with the water — washed hues of a Pacific sunset. Interestingly, what struck me most was not the obvious sameness, but the subtle differences revealed by careful observation. Each day of the four I spent there was beautiful — and beautifully unique. We are lucky to be scientists. We are fortunate that our natural interest in closely observing things becomes ever more finely honed by our education and training. And we are doubly lucky when we can enhance these “observable moments” by sharing them with family, colleagues, and friends.

In this issue of the *AWIS Magazine*, The Road Taken visits with the former editor and current Councilor to the AWIS national board, Peggy Bruce. During our conversation, Peggy said many memorable things; there is one thought in particular I can not get out of my mind. She mused, during a discussion we were having about the discouragement many young women scientists describe feeling, that perhaps senior scientists need to make a more conscious effort to share the joy we experience from our work, not just the frustrations. Real lives, and real careers, are comprised of both ups and downs — but we would not stay in science if the rewards did not outweigh the unpleasantness. One of the rewards, I believe, is that scientists are able to see things a little differently, observe things from a different perspective, and as a result of that gift we are richly rewarded. As

spring turns to summer this year make additional efforts to carve time from your busy day to turn your observant eyes and mind to the beauty and joy of the world around you — rejuvenate that sense of wonder that drew many of us to science in the first place and that keeps us there despite the challenges.

Unfortunately, the space allotted this column does not allow me to recount all the many wonderful segues and sideroads I explored with Peggy during our interview — but I will do my best to share with you the highlights of her interesting life thus far!

If there are early life experiences that could prepare a woman for what she will encounter in a life in academic biomedical science perhaps being an “army brat” is a likely one. Peggy attended ten different schools and lived in a variety of locales including Europe, Asia, and Hawaii (before it was a U.S. state!) during elementary and high school. Such experience gave Peggy independence and a sense of confidence while at the same time honing her sense of caution and her observational skills. Peggy describes it as learning to “fly beneath the radar.” At first, you watch for and learn the

nuances of the local community into which you will have to fit. Peggy also acquired some familiarity with being the outsider — a plus for a woman entering biomedical research in the 70s who actively pursued true “translational” research before it became a hot trend. If you add to these early experiences degrees from the University of Rochester, Harvard School of Public Health, and a postdoctoral stint at the famed Karolinska Institute in Stockholm, Sweden, as did Peggy, you are as prepared as you can be to encounter the opportunities and the challenges an academic career is sure to offer. Not surprisingly, Peggy has had her fair share of both.

Peggy married her MS thesis advisor in 1967 and moved to the University of Hawaii with him shortly thereafter, working as a research associate in his laboratory. During the eight years Peggy was in Hawaii, she had her first child, a son. She also experienced the tragedy of losing her husband to cancer. The final months with her husband were spent rushing to finish a major toxicology textbook he was editing (Casarett and Doull’s *Toxicology: The Basic Science of Poisons*). Peggy, inexperienced at the vast effort re-

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quired to secure, complete, and copy edit (in some cases actually writing or rewriting) chapters, successfully brought the text to completion with the help of coeditor John Doull. It was a backbreaking yet invaluable lesson in the management of large scale, cooperative, scientific work. When the end finally came, the emotional loss of her spouse was compounded by the reality that with his death she also lost her position at the University of Hawaii and her ability to support herself and her young son.

Peggy, with the support of some of her contacts, decided to pursue a doctoral degree at the Harvard School of Public Health. While in graduate school, Peggy met and married her current husband, a postdoctoral fellow. They were both able to obtain postdoctoral positions at the Karolinska, an institution of mythic proportions to scientists because it is the “home” of the Nobel Prizes. While in Sweden, Peggy joined in the pomp of two Nobel Prize ceremonies, gala festivities that kick off the winter holiday season in Stockholm, and attended the seminars Nobelists give to the faculty and staff of the Karolinska.

Returning to the States in 1978, Peggy and her husband did their best to handle the “two-body problem.” Her husband secured a faculty position at Case Western Reserve with Peggy accepting a research associate position as the “trailing spouse.” Peggy had a second child during this time, a daughter. Within a few years, Peggy transitioned to a full-time faculty position in the department of Pediatrics. During this time, Peggy’s research interests underwent a major transition from basic biomedical research to true translational research investigating lung development with immediate clinical importance to the care of premature infants.

Peggy left Case Western Reserve in 1991, an associate professor, to accept an equivalent position at the University of Kentucky.

Peggy’s experiences hold invaluable lessons that should be carefully evaluated by science policy wonks wondering how to create incentives that will encourage researchers to pursue projects “translating” basic science findings into clinical applications improving health. The work requires that a true, trusting collaborative relationship be developed by the researcher and the clinicians (especially nurses) caring for patients. Translational research also means turning a wealth of clinical observations and anecdotes into testable hypotheses — the flow of information is multi-, not uni-, directional. Peggy had to learn a lot of clinical neonatology to make her research clinically efficacious — and she also had to carefully build relationships with her clinical colleagues. The rewards? Improving the future for premature infants. The costs? The work is painstaking and slow — with all the predicted impacts on publication rate. It seems to me that many academic biomedical scientists have been and continue to be drawn intellectually to what is now called “translational” research. Encouraging more scientists to dedicate their careers to it requires taking a hard look at the obstacles to translational research inherent in the research infrastructure and the existing reward systems.

Peggy was becoming a bit frustrated with the slow pace and difficulties of her clinical research and had begun shifting her work back into the laboratory when her husband decided to accept a program position at NSF. Peggy took two years leave during his rotator stint to join him in DC. During this time, Peggy pursued several interests, including taking on the awesome (at least that is how it seems to me!) responsibility of editing the *AWIS Magazine* and volunteer science education at a science magnet school in Virginia. The school, comprised of students from 48 different countries, gives children a chance to catch

the science bug in an atmosphere of high morale and creative teaching.

Peggy, having returned to Kentucky, is negotiating another major transition with that interesting mix of bold confidence and cautious observation honed by her many experiences. Her interests in pulmonary physiology is expanding in a new direction; she is collaborating with her husband on the development of an experimentally driven and constrained mathematical model that could better predict the outcome of patients treated for carbon monoxide poisoning.

Asked specifically for advice I could pass on to women scientists starting their own journeys Peggy obliged. The most important bit of wisdom is to pursue work for which you are passionate. Peggy resisted the urge to follow a narrow path because she is interested in “big picture” questions — and her gamble has paid off and produced important, and useful, results. Peggy also advises “trailing partners,” regardless of gender, to look for opportunities that allow you to create a niche for yourself. Situations are rarely perfect — but they are what we make of them. Peggy admits her life as a scientist could not have been easy for her children — there were many compromises that had to be made. Still, she takes some comfort in the fact that her son and her daughter must have sensed the value of the sacrifices made, as both are pursuing academic careers.

Like many of the women this column has profiled, Peggy evidences both optimism and pragmatism. A life in science requires certain resilience as it is likely that we will experience disappointment more often than true success. Still, with careful watching — we can experience rare moments of exhilaration when the beauty and wonder of nature reveal themselves to us. Perhaps most importantly, we then have the joy of sharing those moments with others. 

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