



Presidents' Columns

Getting into Microwaves and the MTT-S

■ Dylan Williams

In this final "President's Column" as I end of my term as president of the IEEE Microwave Theory and Techniques Society (MTT-S), I have cause to reflect on how I became a microwave engineer and on the role the MTT-S has played in my career and the careers of my colleagues. Perhaps the most important functions of the Society are the MTT-S Distinguished Microwave Lecturer (DML) program, our conferences, and our publications. All of these contributed to my career, and I hope they are doing the same in yours.

My Introduction to the MTT-S

In fact, the Society's DML program provided my first contact with the world of microwaves. I attended a free presentation given by Dr. Robert Pucel, an MTT-S DML, while I was studying physics and math as an undergraduate. Bob focused on the development of some of the first monolithic microwave integrated circuits (ICs) at Raytheon and described the very exciting world of gallium arsenide ICs operating at microwave frequencies. Electromagnetics had been my favorite class, and seeing microwave engineering in action through Bob's talk was inspirational. That one DML sponsored by



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the Society profoundly influenced my career choice.

The next day, I went to my college's Engineering Center to discuss the possibility of a double major in physics and electrical engineering. I was

told that Department of Engineering would not accept a single credit I had taken in either physics or mathematics (I was already a junior) and that my only option was to drop everything I had already done and reapply as a freshman in the school's electrical engineering program. But I was not to be deterred!

Upon graduating with bachelor degrees in both mathematics and physics, I found that many electronics companies were quite interested in hiring me directly out of school. I took a job at Motorola, ending up in the "Fred" room (so called because everyone who worked there was surnamed Fred). To my great relief, the Freds were all very accepting of a newcomer who didn't turn around simultaneously with them whenever someone called out "Fred." Before I knew it, I was making measurements with a network analyzer, learning about the Smith chart, and



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designing my own filters, matching networks, and oscillators.

Early Work with the Society

It was not until graduate school that I really started to appreciate the role the MTT-S could play in my career. I was tickled to discover that every one of my professors in the Department of Electrical Engineering at the University of California, Berkeley, had a degree in physics and that they were all fascinated by what could be done at microwave frequencies. I spent weeks

and weeks in the library, starting with the first volume of *Transactions on Microwave Theory and Techniques (T-MTT)* published in 1952 and methodically working through each subsequent issue. This was how I gained a real appreciation not only for the field of microwave engineering but also for the MTT-S and what it brings. This is also when I attended my first International Microwave Symposium and started to meet some of the engineers whose papers I had been reading. During this time, I started to think of the MTT-S more and more as a partner in my career, aiding in my education and introducing me to the movers and shakers of the microwave art.

After graduating from Berkeley, I continued to read and contribute articles to *T-MTT*. It was not long before I received my first invitation to review an article. I pounced, making the review my top priority. What better way was there to repay the Society for everything I had learned about microwaves in *T-MTT*? Plus, it was both fun and educational at the same time!

MTT-S Editorial Boards

After about ten years of attending conferences, publishing papers, and writing reviews, I was invited by Michael Steer to join the *T-MTT* editorial board as an associate editor; in this position, I strived to be as thorough and objective as possible. When I was asked to

edit the transactions along with my colleague (and now good friend) Amir Mortazawi, I was ecstatic. I believe I was honored with this responsibility in large part because of the solid foundation that came with studying the transactions over the years.

I don't know exactly what I will do next, but I am sure I will be working with the Society for many years to come.

Both Amir and I had worked as associate editors, but we were not prepared for this! The administrative aspects of the position were overwhelming. To keep the machinery of the transactions going, we had to find editorial assistants, set up shop, and handle everything from evaluating submissions to tracking reviews to preparing manuscripts to reading proofs. This was when I was introduced to Sharri Shaw and offered her the position of *T-MTT* editorial assistant. We got right to work, trying to understand the process and track all the things that must be done for each submission we received.

One of the interesting things about being the editor of the transactions is that you also become a voting member of the MTT-S Administrative Committee (AdCom). This introduced me to a new group of MTT-S members dedicated to the functioning of the Society and advancement of the microwave community, all of whom enlarged my world considerably.

Near the end of my term, I put together a proposal for a new publication, *IEEE Transactions on Terahertz Science and Technology*. The president of the MTT-S at the time, Samir El-Ghazaly, and the chair of the Publications Committee, Madhu Gupta, worked very hard to get this proposal accepted by other Societies within the IEEE. After my term editing the transactions ended, I was elected to the AdCom as a regular member and appointed chair of the Publications Committee, where it became my responsibility to try to get the new journal off the ground!

The selection committee was unanimous, and I was fortunate to persuade

Peter Siegel to take the job of editor-in-chief. We brought in my friend Sharri Shaw as his (now seasoned) administrative assistant. The three of us spent hours on the phone working out all the details to get the new journal started and make it a success. Sharri set up the editorial office and kept the fledgling journal running smoothly. This freed Peter to pursue high-quality review and tutorial papers to augment the regular submissions, write up interviews with famous figures in the terahertz community, and develop strategic relationships with organizations in that community. The initial impact factor for *IEEE Transactions on Terahertz Science and Technology* was higher than that of any of our other publications, and, at least by this measure, it was a great success.

Ongoing Evolution with the Society

I moved from the Publications Committee to chair of the Inter-Society Committee, then served as chair of the Technical Coordinating Committee. Two years ago, I threw my hat into the ring and was thrilled to be selected as president-elect by my colleagues on the AdCom. And now, as I contemplate the end of my term as president of the Society, my appreciation for what the MTT-S brings to the world of microwaves and those that inhabit it continues to grow. As time goes on, the connection gets deeper; remembering how the Society helped me, I place more and more importance on how the Society will continue to help others. Throughout my involvement with the AdCom over the last decade, my role has become more focused than ever on facilitating the work of others. My role as president seems the natural result of that evolution.

I don't know exactly what I will do next, but I am sure I will be working with the Society in one capacity or another for many years to come. I hope you are finding the same sorts of rewards from your association with the MTT-S and that you will join me in working to make the Society more accessible, transparent, friendly, and relevant to all of our members.