Optical Engineering

SPIEDigitalLibrary.org/oe

More on Learning

Ronald G. Driggers

SPIE

More on Learning

One of my roles as Editor in Chief of *Optical Engineering* is to be a cheerleader for optical engineers, especially the younger to midlevel engineers who can use a few pointers on technology, careers, learning, writing, research, and strategies for succeeding. So, as you know, I give not just my own advice, but I seek out advice from other senior optical engineers and I pass on what I find useful in these editorials. In March, I wrote an editorial "It's Never Too Late to Learn," in which I described two friends who pursued the PhD degree later in life. In the editorial, I described how I was proud of my two friends who summoned the courage to take a run at the PhD later in life. I am sure it was and is an intimidating prospect later in life when undergraduate and graduate courses are not as recent and fresh.

Then, a few days later, I received an email from one of the giants in our field, Bill Wolfe. It read:

> "I am with you. It is never too late to learn. But you do not have to get a new degree to do it. I do not think Vollmerhausen knows any more about infrared systems now that he is Dr. V. than he did before. Go back to school. Study on line. Never stop learning, but realize that a degree is only a certification that you have done certain things. Never stop learning no matter how you do it."
>
> Signed, Mr. William L. Wolfe

My response was:

> "Bill, you made me smile today. I agree. I hope you are well."

To which he replied:

> "I am well enough to pick on you a little!"

Bill has a good point, and it is one for all of us to take to heart. You can't stop learning regardless of how you do it. While some people may be interested in getting a PhD, all of us need to continue learning to be the best optical engineers possible. The learning can take many forms and one's personal preferences can dictate the best path forward.

I had a wonderful professor who tried to describe the differences between degrees, when we were both in the electrical engineering side of optical engineering. He said that a BSEE would provide the background necessary to work some pretty hard problems and provide good solutions. An MSEE would provide further training so that one could work even harder problems. In a twist, he described the PhD as training that was intended to allow someone to take a problem or concept that appeared to be nearly impossible and break it down into components where basic concepts could be applied to a subset of the problem. That is, it was not working harder problems, but taking hard problems and simplifying them to the point that fundamentals could be used to probe and more fully understand the problem. Over the years, I think this description is true not only for electrical engineers, but for most of the science and engineering communities with some exceptions. A PhD is not for everyone, and any science and engineering degree is a certification of an accomplishment. If you have a name like Wolfe or Vollmerhausen, it is certainly not necessary. But, continuing to learn is necessary if you want to be a good scientist or engineer, and there are many ways to do this.

Ok, so what did the cheerleader drink before going to the game? Root Beer! I still love a root beer in a frozen mug whenever I can find it. I guess that makes me a better cheerleader.

Ronald G. Driggers
Editor in Chief