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Review Clubs

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While reviewing scientific publications is an important professional responsibility, the skills required for being an excellent reviewer are not generally acquired as an explicit component of an undergraduate or graduate engineering curriculum. Sometimes professors will teach these skills through literature review projects as part of a class, but otherwise students are left to develop these skills on the job after graduation. I was fortunate to be in the former category. When I was studying at Georgia Tech under Professor Bill Rhodes, he would occasionally give his cadre of students a current paper in his field of optical information processing to read and review. Generally it was a recently published paper but sometimes would be one that he was reviewing for publication. We were a research group of 6-8 students, and each of us would thoroughly examine the paper and convene about a week later for a spirited discussion of its significance, strengths, weaknesses, potential errors, and ideas about future research directions.

I still remember a number of these papers due to the time I spent poring over the theoretical development step by step, assessing the experimental methods, and evaluating whether the presented results supported the authors' stated conclusions. The expectations to participate in the discussion and defend our opinions on a paper's merits forced us to look beyond the assigned paper and to track down and examine cited work to gauge the significance of the work in the context of prior publications. We may not have appreciated it at the

time, but we were acquiring the skills to be competent scientific reviewers. If that was Professor Rhodes' objective, I feel that he succeeded.

These experiences came to mind when the SPIE Board of Editors discussed the idea of university review clubs back in 2015 in order "to provide training in the process of constructive peer review and provide students a leadership and training opportunity for early-stage involvement with an SPIE journal." The review club concept is to use groups of graduate students under the guidance of a university professor to serve as peer reviewers for submitted manuscripts in the professor's areas of expertise. Essentially, it formalizes the methodology I experienced in graduate school that I suspect might be informally employed by professors throughout the world.

I was very supportive of instituting this review club concept into our peer review process, and we launched it on a small scale at the beginning of 2016. It has many positive attributes, the most important of which is that it provides a venue for teaching our graduate students both the importance of serving as peer reviewers and the skills to be proficient at it. At the moment, we have 4 review clubs at Rochester Institute of Technology under Dr. Dale Ewbank and Dr. Nathan Cahill, University of Arizona under Dr. John Koshel, Laval University under Dr. Simon Thibault, and Texas A&M University under Dr. Alvin Yeh. Over the past 18 months since these review clubs have been put into place, they have reviewed 9 papers. They regularly get high marks from our associate editors for the quality and timeliness of their reviews.

Based on this initial success, I am favorable to expanding implementation of the concept to more review clubs. To do so, I need volunteers. If you are a university professor with the skills, passion, and opportunity to lead an *Optical Engineering* review club, please contact our managing editor Gwen Weerts or me, and we will investigate setting this up for your research group. I am confident that you will find it to be a rewarding experience that makes a positive and lasting impact on your students throughout their professional careers—like it did for me.

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