EDITORIAL

Get More Involved

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I'm sitting in a hotel room in Richmond, VA, in June, taking a break from the Vibration Institute's Annual Meeting. I get a lot out of attending technical conferences, so I make them a priority in my professional life. After all, life in today's world is all about priorities, professional and personal. Because there are so many choices, one can't do it all. Personally, I just finished organizing a picnic and working on an art sale fund-raiser for my synagogue. I have to leave this meeting early to go back to chaperone the eighth-grade farewell dance, and I'm planning on a hike of the Grand Canyon with my kids in August. I've put off learning how to sail and digging a new garden, decisions I've made after considering the effort required. Professionally, I'm still working on last year's limited and classified proceedings, writing additional newsletter articles, including this one for *Sound &Vibration* magazine, and I'm developing a short course. On the back burner are the UNDEX (underwater explosions) Compendium (I hope my boss isn't reading this) and cleaning up my office.

In today's world, we are being asked (sometimes told) to do more and more with less and less, so we make choices. Sometimes the choices are made for us, such as when we are told to do something (with the implication that if we don't, we had better find new jobs). And sometimes we choose unwisely when we sit in front of the TV instead of taking our kids to a ball game (my opinion). We've also been known to make choices based on the here and now and not on the future. An example might be selecting a bolt pattern without documenting your justification, which is tough luck for the person who has to review your design next year to see if the capabilities can be increased. If you're reading this editorial, you've decided that you'd rather read what I have to say than work on your current assignment, for which I applaud your excellent choice.

I'd like to switch gears for a moment to pump up your ego a bit. *Sound &Vibration* readers are involved in all aspects of the dynamics problem, be it designing and/or analyzing a product, testing, developing or selling products to assist in analyzing or testing products, or a supporting field. If you think about it, dynamics is something that touches everyone's life; you want your cell phone to work after you've dropped it, your dishes to arrive unbroken after the trip in the moving van, the building to be safe during an earthquake or a terrorist attack, as well as the ride in your car to be quiet. Without your knowledge and contributions, society would be a lot poorer.

My first boss out of college was really great. Technically, he knew his stuff, knew how to pass on his knowledge, and was great at managing people. One thing he said has stuck with me all these years. I interrupted him once when he was developing his budget. He was in a talkative mood and he said his boss, the vice president of engineering, told him that he really didn't understand what his department did, but he figured it must be necessary, so he always approved the budget. You're probably chuckling as you read this, thinking that would never happen today, and you're right. Today, you have to show relevance to the project or you stand a good chance of being left off the party list at the next round of downsizing. I would argue that relevance to the project is not enough; as professionals (and I've always hated that word), we should also strive for contributions to the community's body of knowledge.

Strether Smith delivered the keynote address at the Vibration Institute's conference. His talk originated from an editorial he wrote for this magazine on engineering schools teaching dirty-hands concepts. During lunch, the conversation turned to schools' inability to find qualified people to teach machining, welding, and other dirty-hands topics. There is also an inability to find people willing (notice I didn't say qualified, we have a lot of qualified people who aren't willing), to take the time to explain, via conference papers, technical reports, notes, etc., to others the nature of their work. It was pointed out that there were lots of people at this conference who could, but don't. Later, I saw that Peter Avitabile from the University of Lowell responded to Strether's editorial with a three-part novella discussing academia's efforts. This is great, but there is also so much that you can contribute in this area.

If you're still reading, I hope you're seeing a point behind all this rambling. I'm concerned about training the next generation. When we make choices, far down on our list is passing on our knowledge, be it documenting our work, teaching, promoting our profession, or dealing with management. But this choice has benefits for you as the expert, as well as for the novice seeking to learn this craft and for society when we build better and safer products. Let me address the benefits to you, to the community, and society and then finish up with suggestions on how you can contribute.

Take a look at our community, and think about some of the names that come to mind – Allan Piersol, Randy Allemang, John DeRuntz, David Smallwood, Tom Paez, Wayne Tustin and Strether Smith. My apologies to those of you who were left off this list. These individuals are smart, but I venture to say, no smarter than you are. They might be further along than you in their careers, or you might have more experience than they do. So, why are they well known and you aren't? A better question – is there any advantage to having a reputation in this community? Better still, how did they acquire their reputations? That's a fairly easy question to answer. They learned their craft, performed quality work, and (this is the critical point that most of us don't do), they told the world about it via presentations to their peers, writing papers, and technical reports, publishing books and teaching. These people will never have to worry about having a job or getting interesting work because they all have excellent reputations in the community, reputations outside their department, division, or company. Now look at yourself. What would it do for your ego if I invited you to deliver the Elias Klein Memorial Lecture at the 77th Shock & Vibration Symposium? It could happen.

By taking the time and putting forth the effort to make your knowledge and expertise available to the next generation, you establish a legacy that will endure long after you've retired. While it's true that no one on their death bed ever said they wished they had spent more time at work, it's also true that, after sleeping, work is the most time anyone devotes to one activity. Some 40 odd years on the job translates into about 80,000 hours, which is about 11% of the time spent on this earth of an 80-year-old. You've learned a lot in that time, most of which you probably take for granted and believe it's just common sense. But this is precisely the stuff they don't teach in schools. We're kicking off a Young Engineer's Forum at the 76th Shock & Vibration Symposium with presentations on how a building and a submarine are put together. I've had requests for more 'how-to' presentations and for explanations of the so-called

"rules of thumb." Newcomers (a better term than 'young,' because there are people of all ages and abilities entering this field) want and need this kind of information and only someone like you understands the subtle differences in a plot that constitutes an instrumentation error versus an equipment failure. This is the knowledge you have and the information you can impart.

A properly trained work force will make fewer errors and design and build better products, thereby saving time and money. It's no fun paying to repeat a test that was done 10 years ago but never documented. Or sweating because the program manager needs an answer tomorrow and your only tool is to build a complex model that will take weeks, if not months, to find a solution. Wouldn't it be nice to have some back-of-the-envelope equations handy?

So, now that I've convinced you of the need and of your ability to meet it and profit from it, how can you get involved? The SAVIAC calendar (www.saviac.org/MIsc/upcoming_events.htm) lists conferences throughout the year. And the engineering professional societies are always on the lookout for instructors to teach short courses. I am currently looking for people who want to teach, develop a monograph, be a mentor, or contribute in some other way by being on a committee. There are many other prospects. Just as Strether's editorial prompted follow-up discussion, I hope this will also provide you with additional opportunities and points of view. I'd like to leave you with a little something I found on the Internet – 10 things they don't teach you in engineering school.

The Top 10 Things Engineering School Didn't Teach . . .

10. There are at least 10 types of capacitors.
9. Theory tells you how a circuit works, not why it does not work.
8. Not everything works according to the specs in the data book.
7. Anything practical you learn will be obsolete before you use it, except the complex math, which you will never use.
6. Always try to fix the hardware with software.
5. Engineering is like having an 8 a.m. class and a late-afternoon lab every day for the rest of your life.
4. Overtime pay? What overtime pay?
3. Managers, not engineers, rule the world.
2. If you like junk food, caffeine and all-nighters, go into software.
1. Dilbert is a documentary.

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