

Say What?: The Importance of Effective Communication in Engineering

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“If you cannot—in the long run—tell everyone what you have been doing, your doing has been worthless.”

—Erwin Schrodinger
(*Nobel Prize winner in physics*).

More often than not, the importance of clear concise communication is overlooked by the typical engineer and scientist. We spend our lives studying complicated mathematics, theorems, scientific principals, and high level analysis techniques. We become experts in our fields and we often wonder why we are undervalued by the general public—not to mention our non-engineering friends and family. I contend that we are undervalued because of our widespread inability to explain what we do to the general public (and why it is so important). It is one of the hardest goals to accomplish, to be able to boil down difficult concepts into a short and easily understood presentation or elevator pitch. You have to know your subject matter inside and out to be able to explain it simply.

You might ask, why this is even important—‘my colleagues understand me.’ As scientists, we know that science doesn’t just happen. We need funding that comes from professionals with varying science backgrounds or no science background at all. We need politicians (and often lawyers) to understand the importance of various sci-

ence issues in order to effect change in the legislation that allows us to use our engineering to protect/serve the public—our ultimate goal as engineers.

I, personally, have had a successful career in the field of materials engineering and nondestructive testing (NDT) by being able to explain what I do in a way that a layperson can understand. Through the use of effective metaphors and real life examples, I put what I do

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in terms of what everyone understands. For example, I explain NDT to people by using tests from the medical field with which the general public is familiar—ultrasound, x-ray, EKG, stethoscope—to illustrate what we do in the field on bridges and other industrial applications. I explain fatigue of metals through using the repeated bending of a paperclip visualization.

Perhaps I got into this means of explaining things because my parents do

not have a scientific background. Regardless, it has served me well by establishing me as an expert among my peers through conference presentations and with the general public through television interviews and mainstream publications. Through clear communications, I’ve been able to raise money for worthy inventions, teach others about what I do, show students that engineering is a good field to study, and found a business based on being the go-between with advanced technology manufacturers and their end users (bridge owners).

As communications become more instantaneous with social media, concise, effective conveyance of ideas has become increasingly importance. Will innovative engineering ideas be transmitted over Twitter in 140 characters? Not likely. But in an ever-speeding-up world, getting the point of your complicated project through to a funder will only get more difficult, yet no less important.

I encourage you all to hone your communication skills, not only for your own professional growth, but also for the promotion of our profession with the general public.

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