

Diverse Careers

I have been following the “hidden” physicist debate closely and have noted a trend in the suggestions offered by readers. Many point out that physicists don’t market themselves effectively. Few outsiders know what physics is all about, and I suspect that we have tried to perpetuate our elite club by laughing off this circumstance instead of seeing it as a potential problem that might need to be corrected.

While a small group of physicists manages to break into industrial careers, many who try are not as successful. Perhaps this is because they are naive about the expectations and requirements of industry. But to see this as a problem with the physicists is only to look at half the problem. In large companies, applications often are screened by personnel who are not knowledgeable about the difference between physicists and engineers. They sift large volumes of resumes looking for keywords such as “engineer.” Those resumes that don’t meet the criteria get shelved, often never making it to the managers who might consider the individual.

The key here is educating the public at large. While physicists view engineering as applied physics, the general public, and many engineers and managers, do not make this connection. I believe that this lack of recognition can be addressed by a larger campaign by the physics community. We need to educate people in all walks of life about what physicists do. Everyone knows what a lawyer does, even if you never needed one. Doctors? We know what they do too.

Physicists are hidden! Even television shows like *Star Trek: The Next Generation* have engineers plainly visible—but no physicists. Scientists who do physics are often called “scientists” in newspapers, magazines, and television, continuing the hiding of physics. Organizations such as AIP can do a lot to publicize physics, following the more aggressive lead of the engineering societies. Networking, advertising, marketing ... these are foreign (and perhaps repulsive) words for many physicists.

Unfortunately, it’s not enough that physicists know what they themselves can do; self-confidence is not a panacea. The remainder

of the world—the people (nonphysicists) with whom we must work—must also know what we do.

Ian D’Souza
Com Dev Ltd.
Cambridge, Ontario, Canada
ian.dsouza@comdev.ca

When I was in high school and preparing for college in the late 1970s, I originally intended to study electrical engineering. It seemed like a well-paid profession with much opportunity. Then, early in my college years, I acquired this youthful, idealistic notion that learning “the secrets of the universe” was more important than “mere” professional training. So I chose instead to study physics and not to narrow my studies to one specific area of engineering.

I received my B.S. in physics in 1986 but did not pursue graduate school. As for many physics graduates at that time, the employment picture was pretty bleak. On many occasions, my path was blocked by personnel office gatekeepers who were “only hiring engineers today.” I eventually accepted a position as a patent examiner at the U.S. Patent and Trademark Office near Washington, DC.

My physics background has been a tremendous asset in working in the patent field. It has equipped me to write and prosecute patent applications in a very broad range of specialized technologies. Many of the engineers I encounter are brilliant in their speciality but quite unknowledgeable outside of their little niche. I highly recommend a physics education to someone seeking a strong foundation in the physical sciences.

Along the way, I became interested in amateur astronomy. The applied mathematics learned in my physics program was indispensable in learning the arcane geometric elements of this subject and the optical principles required for amateur telescope making. A physics education also helped me acquire a knack for explaining difficult phenomena observed in the physical world. To this end, I create an astronomy-related comic strip called SkyWise, which appears every



month in *Sky & Telescope* magazine.

It may be true that a physics degree is not the clearest and most direct path to a career in technological industry. However, I can testify that a broad knowledge base in the “secrets of the universe” can be aesthetically rewarding and satisfying, and that it can create many unique opportunities not available to those who specialize in a more narrow field of technology.

Jay Ryan
Cleveland, Ohio
starman@cyberdrive.net

Yes, there are physicists employed out there, and in many diverse occupations. Years ago, I moaned about not majoring in an “employable” field, such as electrical engineering. However, I’ve found that physics degrees, when properly marketed, will open many technical employment doors. Since earning B.S. and M.S. degrees in physics 20 years ago, I’ve worked and published in several fields that required technical knowledge and analytical thinking skills. I have been employed in the oil business, first as an electrical engineer developing wellbore instruments, then as a geophysicist interpreting seismograms. I’ve also worked for the U.S. Department of Defense, where I planned orbit insertions, predicted the Sun’s behavior, and cared for an aging fleet of geosynchronous satellites. Presently, I consult on government projects that include nerve agent decontamination, explosives detection, and modeling amphibious assaults. Of course, the real fun is teaching physics and astronomy at local community colleges. I think a physics degree could be considered a “union card” to undertake almost any technical job.

Dale Synnes
Naval Facilities Engineering Center
Port Hueneme, California
dsynnes@nfesc.navy.mil

If you would like to share your reactions, mail responses to Hidden Physicists, The Industrial Physicist, One Physics Ellipse, College Park, MD 20740-3043, fax (301-209-0842), or e-mail (tip@aip.org).