

## There is Art in Science and Science in Art

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When a sixty thousand dollar microscope is used as a paint brush, neither science nor art are in trouble – but rather benefactors, witness to the fact that there can be “science in art” and “art in science.”

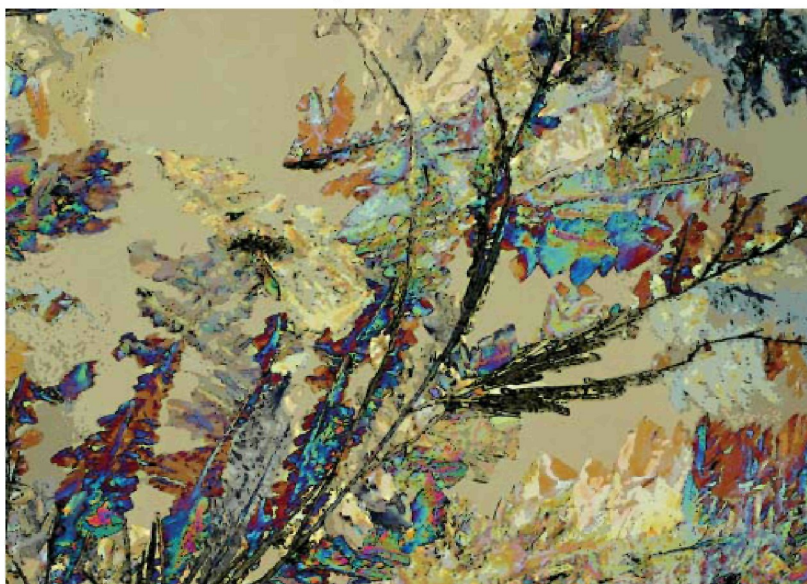
Arguably, except for a very few kids, our high schools are churning out hamburger helper generations, the product of a defective educational philosophy that believes that self esteem is more important than inspiring a tough academic regimen that leads to the pursuit of a science-focused secondary and post secondary education. Horses drink water because they want to, not because they were led to it. Kids pursue science and the achievement of excellence not because it is available, but rather because somewhere along their early education experience someone inspired their interest and curiosity.

That line from Ryan in the movie “Hunt for the Red October” always comes to mind – “I should have written a memo” – but maybe the important lesson is that we should all be “volunteered” on occasion to take our science – not into the high schools – that’s too late – but rather into the sixth, seventh and eighth grades to expose those minds, still curious and enthusiastic about the world around them to the challenges and fascination of science.

So I “got” volunteered, by a colleague’s “PTA President” wife to lug my Zeiss Ultraphot III photo microscope before an eager bunch of some sixty-five sixth graders to demonstrate how a microscope was no different from a paint brush in producing art from microscopic crystal structures of vitamins, pharmaceuticals and other natural “stuff.” Late into the night before, I prepared a dozen or so evaporation crystal slides of vitamin C and B6, epsom salt, and what ever else was on hand and a few slides of melt crystals of sulfur and mothballs. On a cold – very cold – January morning last year the moving van arrived at 7:00 am and two burley giants loaded my Ultraphot III – and off to school we went. For those of you unfamiliar with this late 1970’s early 80’s relic, it is probably the largest and heaviest light microscope ever built and in its day was the most advanced photomicroscope produced. In many respects it is still a sophisticated and useable work horse in many labs – although admittedly my current Axioplan/Axiophot is a smaller and more advanced toy.

These uncluttered minds took to the demonstration like bees in pursuit of honey – they looked for images on slides that were “art” – and discovered that science was “cool.” or whatever. They were also heard to say “Wow!, This is neat stuff!” I provided the definition of what was art: *an image that attracts attention, engages and inspires our imagination, and sustains our interest.* No need to go further in this case. The first sixty minutes of the three hour sessions (two days morning and afternoons) was devoted to learning how to manipulate the scope – bright field, dark field, DIC, transmitted and reflected and of course how to manipulate the rotating analyzer and polarizer. These kids even learned and UNDERSTOOD, by the end of the session, what reciprocity was. Amazing – no dummies in this group.

The demo centered on each kid selecting an image and exposing a sheet of 4x5 instant color film – me, Fuji, and the local photo shop contributed – another well known manufacturer refused. I guess a hundred and fifty sheets of instant film would have put the company into bankruptcy or maybe kids were just not important. Or maybe the Japanese company had a greater understanding of the importance of education. No matter! The motivation was that each kid had a “take home” – one shot. There was a built in discipline and incentive not to “screw -up” That worked! Around the room were placed some two hundred “8x10” inch recent color images of crystal art – intentionally to give the kids an idea of what was possible – their job was to select and create their “art” through the use of the instrument. Oh, and by the way, to learn what a microscope was and how to use it. “Absolutely amazing” are the only words to describe what these kids observed and captured and learned in the space of three hours. But in this case it was not the art, but rather the experience, the exposure to the instrument and the WOW factor that “science can be cool” that was important.



Mission accomplished – but at the time I had no idea just how pervasive it was. The end of May I was asked to talk to 500 kids, parents, teachers and school administrators about the Art of Science and the Science of Art. And a command repeat performance was scheduled again for this January because the next class of 6th graders heard about it and were waiting for “their turn.” Hopefully, a bunch of “hamburger joints” will have a few less kids to hire in the future – who decide to forsake a career in “french-fryology” in favor of physics, chemistry, metallurgy, or medicine. Who knows – each of us can possibly make a small difference. Be an eager volunteer when it counts! ■

Note: T. Saunders by daylight is an international business strategic development advisor to major corporations and head of a global technology search, commercialization and capital formation group. He has traveled extensively world wide and has served in professional appointments including a White House policy task force, Congressional Committee professional staff positions and in corporate executive slots. From midnight to six a.m., Saunders is an internationally recognized artist – producing mural art reproductions of microscopic crystal studies using a Zeiss Axiophot (4x5, 35mm and digital capture) microscope. He resides in Clearwater, Florida and Halifax, Nova Scotia.



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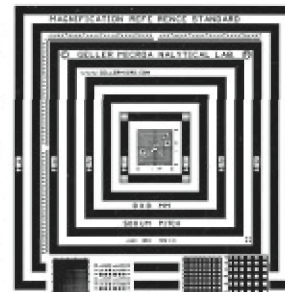
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