

Tallahassee - the Place for Technology

A recent issue of the *Tallahassee Democrat* newspaper highlighted the award of a multi-million dollar military contract to a local firm, Tallahassee Technologies, Inc., and mentioned that this is another example of the growing presence of high-technology industry in our region. This makes excellent news!

At the time of the founding of the Tallahassee Scientific Society (TSS), the hope had been expressed that the Interstate 10 Highway (that runs east-to-west through Tallahassee) would eventually become a high-technology corridor, and that the already-existing Innovation Park would play a major role in this. Although overtures were made in those days to some major industries to establish research centers in our region, they declined; one of the reasons given was the absence of a highly-trained scientific workforce with proficiency in physics, chemistry and mathematics. Most of the scientific endeavor in our schools in those days (and today) surrounded life sciences. It is for this reason that one of the main objectives of TSS was to improve scientific awareness and literacy in our region - working with policy-makers in the field of science education, using the scientific expertise of our members to assist teachers and students, and producing scientific articles and radio/television programs for mass media distribution.

TSS made much progress in the early years, but still has a long way to go in fulfilling these objectives. Our growing technological industry sector still has to look outside of Tallahassee for manpower for its multi-faceted activity. But as we accelerate the pursuit of our established objectives, we will no doubt develop that pool of capable human resources to meet the growing demand.

From Our President:

A Learning Problem?



Dr. Barry Boerner
President, TSS

Has the distinction between Information and Entertainment been blurred beyond recognition??! Does anyone seek pure information any more, or do we only want to be entertained?

With the advent of short attention spans, sound bytes, infomercials, and a host of other communication modes and styles designed for short relaying of information, is anyone listening any more?

I was reading an editorial recently where the writer recalled with nostalgia his family's first TV, a small black and white unit, and I got to thinking about how things have changed. We now have large screen high definition plasma or LCD TVs, but what do we watch? There are a few channels where one can go to actually learn something (Discover, The History Channel, PBS, etc.), but I'm not too sure how many folks watch them. The majority of the public doesn't seem to have any inclination to learn something just for learning's sake any more. We seem to prefer entertainment only, and that only in short bursts. Heaven forbid that a TV plot should actually take 30 minutes to develop. The trend is short segments that switch between two or three story lines so we won't get bored with one plot.

Perhaps this is what is happening at our schools. We aren't there to be educated; we are there to be entertained. If the topic of the class is too boring or too difficult, or not related to our interests, we will entertain ourselves in some manner, with little or no regard to anyone else who might actually be interested in the class if our entertainment is disruptive in any way. The trend is continual excitement of our senses so we don't get bored or, worse yet, actually have to think for ourselves. We multitask to keep our mind occupied - for example, talking on our cell phones while driving, and we may also have the radio or other music media device going at the same time. Anything less leads to adrenalin deprivation and withdrawal symptoms.

Most topics taught at school have to be developed over a long time span in an incremental fashion. Our young people today are exposed to all manner of rapid-fire information bits coming from multiple sources, and the topics needing to be taught at a snail's pace are just too archaic to be worthwhile. So, I am thinking that the subjects are already suspect and the modes are also questioned also. It is going to take the efforts of everyone to reverse this trend, and get us back to thinking for the long term good. I imagine that we start losing the kids in middle school, because that's the age at which they begin to get interested in the gadgets of the day. Perhaps as these electronic marvels of our times become used at earlier ages, they will become less exciting and perhaps learning will become of more interest again. But, I suspect we will have to do it the hard way. The boring, dry, and table-driven text books will have to give way to modes that will educate us in spite of ourselves, or we will become only a historical footnote.

Mentoring: A Professional Responsibility . . . and Privilege

For some professionals in science and technology, mentoring is a way to "pass on the favor" that their own career mentors did for them. For many, it is a duty to the community and to the profession that has rewarded them with a successful career. For others, mentoring is a tool for changing public perceptions about scientists and technologists, and increasing awareness of the sciences - one of the cornerstones on which the Tallahassee Scientific Society was established. But for most, the biggest reward of mentoring is hearing a young scientist or technologist refer to them as a "mentor," a person who had a role in helping an aspiring scientist/technologist find satisfaction in his/her chosen profession.

Our mentoring resources may include discussion forums, information links, educational programs (assistance to science teachers and students in our schools), and information/interaction on our website, www.tss.eng.fsu.edu.

Having passed through the school system ourselves, we are aware of its needs; and having overcome the difficulties arising from those needs, we are invited to help others who are struggling in search of solutions. Many of our teachers and students would welcome assistance and encouragement from persons who use some of the more difficult-to-grasp concepts of physics, chemistry, algebra, calculus, trigonometry, etc., in their daily careers; in short, from the viewpoint of practical experience in the use of these concepts. In addition, those of us who have been involved in judging science fairs are fully familiar with the great need for mentors to students.

We are all aware that the teachers in our schools carry heavy burdens in addition to the limited time available for teaching: they need our help - and are crying out for it. And the present trend in funding for education makes our assistance even more desirable. The students will need explanations and answers to questions, as well as demonstrations and practical work, in their efforts to grasp principles in mathematics and the physical sciences, especially. TSS invites members to volunteer as mentors, to the extent that their activities will allow. Many, if not most, organizations have already made provision for their technical staff to lend a hand to mentoring our young people, fully cognizant that the beneficiaries will be their own future staff members.

For security purposes, mentors (and, in fact, anyone who plans to work in schools) will need to register with the School Board, and go through their standard security checks. Please E-Mail halla@talgov.com, for further information.

Mentoring is both noble and altruistic: noble because this quality is best expressed in looking out for the good of others; and altruistic because the source of that nobility is within ourselves. TSS members (and, in fact, all scientists and technologists) owe it to themselves and to future generations to mentor today's science students and young professionals, in an effort to make them the best possible, as well as to ensure the future continuity of our respective professions.

Today, Riley Elementary School is calling for mentors. Will you help?

Tidbits

- **A Morbid Subject.** A researcher at the University of Florida recently published a paper in the Spring, 2007, issue of the *Florida Scientist*, on the subject of the factors affecting the rate of decay of human remains in cemeteries. Such considerations may be of interest to planners seeking optimum locations for cemeteries; but who wishes to know the rate of decomposition: is thought being given to "recycling" graves? A strange concept, indeed!

Please visit the Academy's website, www.floridaacademyofsciences.org, for information on how to obtain a reprint of the article.

- **Statement on the Teaching of Intelligent Design as a Science.** In our April, 2007 issue, it was reported that an *ad hoc* committee had been appointed to prepare a paper on the teaching of Intelligent Design as a science. The committee completed its work, and the Board voted for its acceptance and dissemination. TSS therefore joins a number of scientific institutions that have issued similar statements on the subject.

Philosophy Professor Michael Ruse suggested that the issue of Intelligent Design vs. Evolution is an American Problem. In a recent report, MSNBC states that he was right. They reported that Britain (which places 5th on the world scale of scientific literacy), in addition to teaching evolution theory, also mandates the teaching of Intelligent Design in schools - in Religious Knowledge classes - and encourages school students to make their own decision as to which they will accept. The United States (which places 57th on the world scale) bans the teaching of Religious Knowledge in schools - and has a problem . . . !

- **Why is the Sea Level Not Rising?** We will all remember the dire predictions about coastal lands becoming submerged as polar ice melts due to "global warming." Much of the Arctic ice has disappeared (and no doubt the Antarctic ice as well - it is more difficult to assess that region), but the sea level remains constant. Is global warming taking place, or is there something else, such as the water moving, in vapor form, from the poles to other regions, since very little liquid water is produced by the "melts"? An interesting article in the July-August issue of *American Scientist* discusses the subject, with special reference to Mount Kilimanjaro's fading glaciers. To read the article, please visit www.americanscientist.org.

Incidentally, how does a greenhouse work? A popular expression usually related to the concept of global warming is "the greenhouse effect," which, regrettably, is an incorrect name for a blanket of high-density and high-specific-heat gases, such as carbon dioxide, surrounding the earth. Readers comments are invited: please E-Mail halla@talgov.com.

- **The July/August Issue of *American Scientist*** also brings us an interesting article on the arrival of the spacecraft *Cassini* at the planet Saturn, and the new information gleaned about that planet as a result of the probe by the spacecraft.
- **Carbon Fibers for Aircraft Construction?** Yes, Boeing Corporation's plant, Alenia Aeronautica, in Grottaglie, Italy, manufactures one-piece carbon-fiber fuselages for the Boeing 787 Dreamliner. The production of such a "barrel" required innovative processes and technologies never before used in the aeronautical industry.

Boeing Research and Technology - Europe is also experimenting with electrically driven aircraft, using fuel cells for generation and lightweight batteries for storage.

- **Carbon Dioxide as a Source of fuel?** Researchers at University of California, San Diego, have found a way to use sunlight and catalysts to convert carbon dioxide to carbon monoxide and oxygen. The sunlight drives photovoltaic cells submerged in a liquid in which the carbon dioxide is dissolved, and the resulting current, with the aid of catalysts, splits the carbon dioxide. The carbon monoxide may then be burned as a fuel, supported by the oxygen.

Work continues to improve the efficiency of the process, as well as the scale of production. The report was published in the July/August issue of MIT's *Technology Review*.

Eighteenth Annual General Meeting Set For September 10

Our Society is eighteen years old, and will hold its 18th Annual General Meeting on Monday, September 10, 2007, at the Werkmeister Hall on the Florida State University Campus. The meeting will begin with dinner at 6:00 p.m. (reservations will be required), followed by scheduled presentations, the Medal of Honor Award Ceremony, and the election of Directors and Officers. The meeting will also feature information displays by the various operating departments of the Society, as well as door prize giveaways.

No Newsletter Issue for August

At this time, as we are in the process of renewing our memberships, our mailing list is "in a state of flux." Since the Newsletter is a member benefit, publication will be suspended for the month of August, allowing time for the members' list to become stabilized. So it is "bye" until September!

The Annual Report for the year 2006/7, which will contain the Legal Notice for the Meeting, will be mailed to members later this month. Please study it carefully, and note any questions that you may wish to ask; an opportunity to ask your questions will be provided at the Annual General Meeting.

Please invite your professional colleagues to join you in attending this meeting, and also to join the Society: membership is only \$40 per year. The united action of our local scientific and technological community is very much needed at this time, to assist the Society in the conduct of our objectives. We will be happy to enroll new members at the Annual General Meeting.

A New Name for Our Newsletter!

The September, 2007, issue of our Newsletter will be the first under a new name: **THE TALLAHASSEE SCIENTIST**. Along with the new name will come a new outlook. Our publication will continue to bear news about operations and activities of the Society and its members, but it will grow to be a scientific journal, publishing technical articles and papers authored by members. As such, therefore, a numbering system using the calendar year as a basis will be developed for ease of reference, the first Volume being September to December, 2007.

TSS members are invited to submit news items, articles, papers, etc., for publication: this is *our* magazine. Although becoming a refereed journal has not been considered (as yet), the possibility is not to be ruled out!