

## Mixing Big Trees with Technology

by: Ken De Lucca

### **Teacher's Institutes:**

Way back in 2006, I attended the American Radio Relay League's Teachers Institute for amateur radio at the League's headquarters in Newington, Connecticut, just west of Hartford. During this four-day workshop I reacquainted myself with an old hobby—ham radio. I was a ham operator in 11<sup>th</sup> and 12<sup>th</sup> grades, with call signs WN2TMA & WN2VHJ, but was too busy in college to keep up the hobby. In 2001 I did earn my license back and at the 2006 Institute I was able to upgrade to a higher license that enabled access to more frequencies.

In early 2009, ARRL Education and Technology Program Coordinator Mark Spencer sent out an informational email about a new Teachers Institute-2 course related to satellite communications. Graduates of the Teachers Institute-1 were eligible, but there were only six spaces open (three seats were held for special guests). Attendees were required to know Morse code—those dits and dahs, or dots and dashes, now mostly relegated to old movies! This Teacher's Institute course was to be in Coleville, California, about 90 miles south of Reno, Nevada, in the eastern Sierra Nevada Mountains, near Yosemite and the giant Sequoias.

### **Satellite Communications Technology**

Why Morse code? A number of satellites used by amateur radio operators use voice communication. But voice communication uses much more bandwidth than Morse code, also called continuous wave (CW).

Many small cube satellites (cube sats) designed by educational institutions around the world are sent into orbit. These cube sats are *transponders*, meaning they only emit a signal. They transmit in Morse code, solar cell voltages, and currents. From these values, spin or rotation of the cube satellites can be determined and methods of controlling the rotation of the satellite can be made. This may be as simple as spinning an internal magnet, which interacts with the earth's magnetic field and can reduce the rotation of a cube sat. Morse code meets the space age here!

I didn't think I stood a chance of being accepted for this Teachers Institute-2. However, I brushed up on my code and managed to get up to about 10 words per minute. It was respectable, but probably not fast enough for some of the satellites.

To my delight I was indeed selected and was awarded the accompanying grant that included assistance for travel funds, lodging, food and gear! The "gear" included a high-end amateur radio receiver and a specialized antenna for satellite communications, which included a rotator for azimuth (360 degree rotation-left to right) and elevation rotation (180 degrees, from horizon to horizon).

As a result of attending the Teacher's Institute-2, I have also acquired software that will permit the rotator (and therefore the antenna), radio, and a laptop computer to talk to one another and track and follow an overhead satellite. My goal is to have the system fully operational for my Electronics Communications course, ITEC 466, in the 2010 spring



**Close-up of antennas and rotators**

## Industry & Technology Welcomes Ms. Donna Painter

The Department of Industry and Technology welcomes Ms. Donna Painter.



Ms. Painter comes to Millersville with experiences in both the graphics industry and teaching. She earned her undergraduate degree in graphic communications, which enabled her to begin her career in the printing industry. Over the time she honed her software and multimedia skills primarily by running a freelance graphic design business for fourteen years. Professor Painter began teaching in higher education in 2001. Since that time she has earned an M.Ed. in Instructional Design and is currently pursuing a D.Ed. in Curriculum and Instruction. Any free time is spent with her husband Dean and her children Grace, 17, and Nate, 13.



**De Lucca (far left) poses with a collection of antennas, rotators -- and other teachers.**

semester. I envision my students talking to other amateur radio operators via satellite communications—a first for Millersville University.

### **Big Trees:**

Before and after the Teachers Institute-2 course I was able to take some time for myself and I made the most of being in that very different part of the country and definitely a very majestic environment. If you ever have the chance to travel to the Eastern Sierra Mountains, especially **Yosemite National Park, just do it!**



## Technology Education

by: Dr. Len Litowitz

Faculty in the Technology Education program often encourage our majors to get involved with extra curricular activities – particularly those that have a service component to them. After all, only so much we would like to teach our students can occur in a traditional classroom or laboratory setting. One such unique opportunity recently arose for our Technology Education Collegiate Association (*MU-TECA*) when we were asked to fabricate some bookshelves for a local public school library that was being renovated on a shoe string budget.

Pictured are *MU-TECA* members Brian Hunt, Jessica Buechele, and Michael Friedman standing behind a series of bookshelves that were fabricated as a service project by *MU-TECA* for Reynolds Middle School in Lancaster City. Materials for the project were funded by the *Life of the Mind Consortium*, a senior citizen's group from the Willow Valley Retirement Community. The consortium's goal is to engage in joint ventures that combine the experience, the maturity, and the wisdom of retirees with the new ideas and youthful exuberance of college and university students. *MU-TECA* and the *Life of the Mind Consortium* had previously collaborated on another project to fabricate children's stools for public libraries throughout Lancaster County.



Seniors Brian Hunt, Jessica Buechele, and Michael Friedman pose with bookshelves made for a local public school.

## **Embarking on an Advanced Woodworking Class of a Different Kind**

Dr. Kerekgyarto opened up the fall semester with his ITEC 376 Wood Technology class by challenging the students to think “outside of the box” by building something that isn’t a box. “Traditionally, students choose to build very traditional forms in this class,” said Kerekgyarto, “and that is definitely not what this class is all about.” The 376 class is an upper-level woodworking technology class taken by juniors and seniors and the project chosen by most of the students this semester was anything but ordinary – the F1 kayak.



ITEC 376 - Working on lashing together the F1 kayak.

Kerekgyarto himself has spent time over the last two summers exploring some advanced techniques. In 2008 he attended the Wooden Boat School in Brooklin, ME, and last summer he took a week-long workshop on building an F1 kayak. He admits that he was somewhat surprised at how many students decided on this

challenging project as he stands in his wood lab bestrewn with bent wood ribs and kayaks and varying degrees of completion. Building an F1 kayak lends itself well to an advanced woodworking technology class because nothing about the craft is square, no layout especially easy, and both machine and hand-tool skills are tested to the limit.

The challenging part of the project is that it includes complex layout, joinery, lashing all rib joints, steam bending of ribs and the cockpit, and sewing the skin on to the wooden frame. The finish includes dying and shrinking the fabric, and coating the fabric with a two-part urethane to make it water tight.

“This has been my best attended class and enthusiasm for the project has been great,” says Kerekgyarto. “This challenge requires a great deal of work from the students, and they have done very well so far. At this point in the semester it seems like they will all complete their kayak.”

Senior Jon Mummert (pictured) is excited about getting his kayak done too. “I love coming to class to work on my kayak,” Mummert said. “I can’t wait to get it in the water!”



Senior Jon Mummert, burgeoning kayaker.

“The important part is the process,” says Kerekgyarto, “but the real reward will be throwing them in the water to see if they float.” The last challenge of the class will be to take a weekend trip to the Grand Canyon of PA in the spring. So, if you’re around Millersville when the weather warms up and you see a motorcade leaving town with beautiful kayaks strapped to their roofs, you’ll know the challenge continues.

See the next issue of The Abbozzare for a follow up to see how the students fared on their maiden voyages.

**Graduate Studies***by: Dr. Tom Bell*

The Office of Graduate Studies has had a busy year. Throughout the year they have been celebrating the 50<sup>th</sup> Anniversary of graduate studies at Millersville University. The technology education masters degree and the elementary education masters degree were the first and only graduate degrees on campus in 1959. Millersville has a rich history of providing professional development, currently offering over fifty graduate degrees and certification programs. The celebration culminated on October 22 with a day-long conference on graduate studies. It featured various perspectives on the future of graduate education from noteworthy individuals. The conference concluded with a special announcement from the University President, Dr. Francine McNairy. Dr. McNairy was proud to announce the creation of the new College of Graduate and Professional Studies. The new college will continue to work closely with the existing graduate programs and provide professional development for adult learners. It will also pursue new markets to meet the emerging needs of business and industry. The new college is committed to serving the needs of the Commonwealth and is excited about providing the graduate education leadership for the next fifty years.

**Occupational Safety &***by: Dr. Dan Anna***Environmental Health**

The OSEH program has been reaccredited by the Applied Science Commission (ASAC) of ABET. This accreditation has been attained under the Environmental, Health, and Safety program criteria (instead of the Safety program criteria). The OSEH program at Millersville is one of the first programs in the country to receive accreditation under the EHS program criteria.

In October 2008, the OSEH program hosted a visitation team sent by ABET to conduct a comprehensive evaluation of the program. By the time the team left campus reaccreditation seemed certain, but it was not until the ABET Annual Meeting in July that final action was taken on program accreditation. Choosing to be evaluated under the Environmental, Safety, and Health criteria reflects the focus on a broad curriculum covering all aspects of the EHS realm and, more importantly, the changes in the profession that have expanded the responsibilities of program graduates.

As the ABET evaluation processes continue to evolve, it has become even more important for the program to keep in touch with alumni and other program constituents. The tremendous change in communication methods in recent years has created new methods to meet these needs. Social networking sites such as Facebook and LinkedIn have experienced exponential growth in membership and member activity. According to Forester in *The Growth of Social Technology Adoption*, three of four Americans use social technology for communication. In 2009, Nielson stated that visiting social networking sites is the fourth most popular internet activity (ahead of viewing personal email), that these sites are growing at three times the overall internet rate and that they account for more than 10% of all time spent on the internet. Mark Zuckerberg, the co-founder of Facebook, indicated in January 2009 that if Facebook were a country it would be the eighth most populated country in the world, ahead of Japan.

The OSEH program sees this as an opportunity to start a conversation; to increase networking opportunities; and to share practices and solicit advice from, with, and between students, alumni, and other friends of the program using these social media platforms. This may also increase the visibility of the program and our graduates; the more information people know about the OSEH program, the more opportunities our graduates and alumni have.

So, on behalf of the OSEH program, please accept this invitation to join us on Facebook and LinkedIn. The OSEH Facebook page can be found using the Facebook search tool to find "Occupational Safety & Environmental Health at Millersville University" or search for "Millersville University" and click on the 'pages' button to filter the results.

To find the LinkedIn group, search the groups for "Millersville University" or "Millersville - Occupational Safety & Environmental Health."

We look forward to seeing you become a fan on Facebook and a member of our LinkedIn group. Come start the conversations....

**Industrial Technology***by: Dr. John Wright*

The Department of Industry & Technology approved a change of name to our associate and baccalaureate degrees in Industrial Technology on October 5<sup>th</sup>, 2009. Following the lead of our professional association and accreditation body, the Association of Technology, Management, and Applied Engineering (ATMAE), the faculty decided to retire the Industrial Technology terminology and upgrade the two programs with more contemporary descriptors that better reflect career titles of our graduates and curriculum efforts.

**Degrees Renamed****Associate's (AT): Applied Engineering & Technology****Bachelor's (BS): Applied Engineering & Technology Management**

Both degree programs will continue to offer technical option specialties in Computer-Aided Drafting and Design, Construction, Electronics/Control Systems, General (BS degree only), Graphic Communications, Manufacturing, Mechanical, Nanofabrication, and Safety (AT Degree only).

The new degree names still need approval from the University, so these changes may take some additional time before they are implemented. I am pleased to assist the Department with this much needed update and believe that the changes will greatly improve our internal and external identity and marketing efforts as we move forward and brand our programs. It is all about providing opportunities for our students! This major facelift reflects what our prospective students want for an education and what our employers continue to seek: *Applied Engineering and Technology Management professionals!*

## Industry & Technology Staff and Students Continue to Shine... Second to None



by: Dr. Barry David

Department Chair

This should come as no surprise but in the realm of bragging, the Department of Industry and Technology continues to shine. Since our spring newsletter there have been many accomplishments that give us bragging rights. To begin, the Council for Technology Teacher Education bestowed our Technology Education program it's prestigious Program of the Year Award. Presented during the 2009 International Technology Education Association Annual Conference in Louisville, this award recognizes the high quality of our Technology Education program and provides us further validation that we are "second to none." Also during the ITEA conference, Dr. Len Litowitz presided as ITEA President. Dr. Litowitz is one of four Millersville faculty to have served as ITEA President. The others are Dr. Burl Osburn '55-'56, Dr. Earl Weber '65-'66, and Dr. George Ditlow '69-'70.

Another noteworthy program accomplishment is the re-accreditation of our Occupational Safety and Environmental Health program. The Applied Science Accreditation Commission of ABET granted full accreditation through 2015 and noted no program deficiencies or weaknesses.

Individual faculty also received recognition in a variety of ways since our last newsletter. Dr. Tom Bell was appointed to the Epsilon Pi Tau (EPT) Board of Directors. EPT is the leading international honor society for technology. EPT also recognized Dr. Mark Snyder by awarding him the Paul T. Hiser Exemplary Publication Award for his EPT journal article "The Education of Indentured Servants in Colonial America."

Continuing with faculty recognition, Dr. Paul Specht was appointed to the American Society of Safety Engineers Board of Trustees. Dr. Specht also received the 2009 *Safety Professional of the Year Award* from the ASSE Academics Practice Specialty. The Academics Practice Specialty is a global professional forum for advancing the academic issues that affect safety, health and environmental professionals. Dr. Hosein Atharifar passed the rigorous Society of Manufacturing Engineers exam to receive designation as a Certified Manufacturing Engineer. Recognizing that we have talent within the department that could be "loaned out," Dr. Sharon Brusic has been appointed as Millersville University's Acting Director of the Center for Academic Excellence for the 2009 - 2010 academic year. Dr. Brusic is teaching a reduced load this year while she assumes her new part-time duties. Finally, two faculty members were awarded academic promotion this summer: Dr. Scott Warner to associate professor and Dr. John Wright to full professor. Both are recognized for their exemplary contributions in the areas of teaching, scholarship and service.

The faculty also have been actively engaged in a variety of scholarly initiatives. Dr. Mark Snyder received a PASSHE Faculty Professional Development Committee grant for "Software Training and the Development of Instructional Materials to Support New Curriculum in Packaging and Specialty Printing" in the amount of \$5,320. Dr. Dan Anna received five-year Centers for Disease Control and Prevention Training Grant Award valued at \$42,842 per year. During this past summer, Dr. Kenneth Delucca completing a grant funded research report for the Pennsylvania Historical and Museum Commission on Pennsylvania-made clocks of historical significance. Drs. Perry Gemmill and Scott Warner developed a comprehensive proposal approved by the Council on Technology Teacher Education Yearbook Committee, and have collaborated as editors on the 2011 CTTE Yearbook tentatively titled "Creativity and Design in Technology Education."

We remain quite proud of our students who also continue to receive recognition for their accomplishments. Seth Tucker and Timothy (TJ) Remaley won second place in the Association of Independent Corrugated Converters (AICC) Student Corrugated Packaging Design Competition and qualified to compete in the International Corrugated Packaging Foundation (ICPF) 'Best of the Best' competition next spring. Amanda Trzcienski, an Industrial Technology Graphic Communication major, and Shaun Boyer, a Technology Education major, each received a scholarship from the Print and Graphics Scholarship Foundation. Amanda and Shaun are among 185 recipients from over 1,100 applications.

Occupational Safety and Environmental Health students were recipients of over \$12,250 in 2009 ASSE Foundation Scholarships:

- Matt Hornyak, ASSE Construction Safety Scholarship
- Marc Squires, ASSE Diversity Committee Scholarship
- Veronica Taylor, the ASSE David Iden Memorial Safety Scholarship
- Justin Porter, the ASSE Washington Division of URS Safety Scholarship

Two undergraduate Technology Education majors, Jessica Buechle and Andrew Kaufman presented results of their research, "The Characteristics of a Model Technology, Innovation, Design and Engineering Teacher," to the MU Council of Trustees during their September 23 meeting. That study, undertaken for the International Technology Education Association, was a collaborative effort of the two undergraduate technology education students and their faculty research advisor, Dr. Scott Warner.

The above represents only a sampling of the many activities and accomplishments that have occurred just since our last newsletter. We continue to be a department with high caliber faculty, excellent, actively involved students and highly competent and supportive staff. Our programs are, as they have always been, programs of distinction that are, indeed, second to none.

# Millersville University

SEIZE THE OPPORTUNITY

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