

Alumnus Builds Tiny Home

When I was a little kid in the early 1960's my dad was a career firefighter in Newark, NJ. He was also an electrician and that profession ultimately won out for financial reasons, but firefighting was always in his blood, and so mine too, I guess. He passed away in 2015 and I inherited a bunch of his fire memorabilia in addition to some I had been collecting on my own. It all needed a place to live, but where?



Fast-forward five years and I went to visit Cody Makarevitz, former student and AEST alum, at Tiny Home Estates, a community of tiny homes on wheels (THOW) located in Elizabethtown, PA. Cody had

built his own tiny home and was living in the community, in addition to working for Tiny Home Estates. He had invited me up to take a look at the tiny homes. My interest was to learn how tiny homes are built. Like many of you, maybe I watch a little too much HGTV sometimes, but I always thought tiny homes are small enough that it might make for an ideal project for our construction technology and construction management majors. They include aspects of any other home including all the various sub-systems, but the square footage is such that it makes for a project that can be addressed in a relatively short span of time. My intent was not to build my own tiny home, or even to own one at the time of my visit, but along the way I became intrigued by the business model of the community and Cody put me in touch with the owner. It turns out that she had one more lot available at the time, but her rental pool was over-saturated with 24 foot long rentals and that was the size of the lot she had left.

So, I talked to her about building a thematic tiny home to place in her nightly rental pool because I knew I would have to come in with something different from a marketability standpoint. I considered a Get Smart tiny home with a bunch of automation inside, but she thought it was too complicated (and most of you don't remember the Get Smart television program anyway). Next, I considered a Jetson's tiny home, but neon and glitz don't really work in a woodsy setting. Then, while discussing my dilemma at the Sugar Bowl (the pseudo of Cheers to Osburn Hall people, but sadly without alcohol service) with our office manager Donna Hernandez and her husband David, he suggested the firehouse theme. Now for a guy who has a firepole running through his house, I don't exactly know why I didn't think of this theme myself! Abby, the owner of Tiny Home Estates expressed great interest, and so I set out to find a tiny home builder. Wait-time and costs were really big issues. It turns out a THOW is not so cheap to build, and it is nothing that many of us would be scared to build ourselves. So, we drew up a contract and with me underwriting the cost of the project, Cody and I (mostly Cody with me on some weekends) built the Tiny Firehouse! It was a fun project and at the time of this writing I have just a couple more hours of touch-up work before calling it a wrap on this project. Much of that fire memorabilia I mentioned earlier is now proudly displayed. I am sure dad approves, and Tiny Home Estates now has its first thematic tiny home in the nightly rental pool.



Dr. Len S. Litowitz



Faculty Reflects on Emergency Instruction Transition

Transition to Online Instruction



The spring semester of 2020 will be remembered uniquely in the history books. Students left Osburn Hall for spring break and came back to totally online instruction. Professors, just like the students, were quarantined at home and scrambled to set up an appropriate home office work space. Professors had one week to transfer all courses to online instruction. Many professors took online workshops offered by the IT department to help with the transition. For most subjects, there are plenty of ways to accomplish the task of online instruction with appropriate technology. However, it is not as easily accomplished for laboratory based, hands-on content. Most professors already utilize the Desire2Learn (D2L) portal. D2L is the Learning Management System (LMS) hosted by PASSHE. It provides instructional space to post assignments, Powerpoint presentations, video content, discussion boards, exams and student grades. The students were familiar with D2L and routinely navigated it as necessary before the transition.

The big issue for professors included satisfying the course objectives with an alternative approach. Limited options to access software and computers required the development of a remote access system for the students. This helped students to log in and access some but not all of the necessary software and servers. To access the computers, courses maintained their scheduled time for a specific class to meet the goals of the course and the needs of the students. Many professors taught class synchronously through Zoom video conferencing software, allowing for students to continue to meet during their scheduled time and ask questions and engage in discussions. Other courses were redesigned to be accessed asynchronously. This allowed flexibility for students and professors to work at their own pace to complete assignments. Lectures were presented as Podcasts, software demonstrations were created by video and screen capture software and even the voice over feature on Powerpoint slides was used to record information. This allowed students to listen to or view a presentation, either on Powerpoint or

video and replay it as necessary. Professors continued to hold virtual office hours to help students work through the content and answer whatever questions came up.

Transitioning to online instruction was challenging enough, but it was also coupled with Fall Registration season and the need to advise students and issue term advisement pin (TAP) numbers in a timely fashion. Even when presented with these additional challenges, students and faculty patiently worked through the issues. Exclusive online learning will continue through all three summer sessions. Spring semester 2020 and transitioning to online learning will definitely be remembered in the history books, but it's fair to say both students and professors look forward to getting back into Osburn Hall.

Dr. Thomas P. Bell

On the Distance Learning Tightrope Without a Net!



I was one of many who did not relish the thought of having to teach classes in a totally on-line format. It isn't because I haven't taught on-line before. I've actually done it for many summers now, but with a non-lab course that fulfills a general education requirement. I have taught this way in summers as a practical matter in order to accommodate the students and get the course to run, but not necessarily because I like to teach that way. I would venture to say that most of my colleagues in AEST feel the same about distance teaching and learning. I think it is also fair to say that this modality of instruction does not lend itself particularly well to hands-on learning. With that said, I am proud of our faculty, staff and students for making it work when we have had to make it work. The Covid-19 virus left us with no choice. Were there glitches – sure there were, but we all adapted at lightning speed and now we have made it through the semester. While we all look forward to getting back to face to face instruction, I can even see some benefit as a result of this unfortunate circumstance. Many of us are far more comfortable with Zoom, our on-line delivery system, and Desire to Learn, our campus course management system that allows us to post content, collect assignments and conduct tests remotely. I really can see some faculty delivering courses in different ways than prior to the virus, all based upon what we learned from our trial by fire experience. Perhaps we will experiment with some different hybrid formats of instruction that are more convenient to students in the future. One thing is for sure: this is a time in our lives we will never forget!

Dr. Len S. Litowitz

Graphic Communication Student Wins Best of Show Award

The Department of Applied Engineering Safety & Technology is pleased to recognize junior Clark Miller as the recipient of the Best of Show Award in the Tom Frecska Student Printing Competition sponsored by the Specialty Graphic Imaging Association (SGIA). These awards are highly sought after by students pursuing a career in printing related industries and all winning entries were displayed to industry leaders at the Printing United Expo held in Dallas, TX in October, 2019. SGIA is the trade association of choice for professionals in the industrial, graphic, garment, textile, electronics, packaging and commercial printing communities.

All student entries were evaluated by experts in the Academy of Screen and Digital Printing Technologies (ASDPT). Miller's entry was a giclée print that utilized a high-quality inkjet printer to reproduce an image on canvas. His entry was created as a required project in the ITEC 351-Digital Imaging class offered through the Graphic Communication concentration in Osburn Hall. Miller printed his image digitally and entered it in the fine art category of the competition.



This student competition includes several categories according to different types of printed products and/or processes. First place winners within each category receive an ASDPT Award of Excellence. The most exceptional entry from the first place winners across categories is honored with the Best of Show distinction. Best of Show winners receive a special Academy Student Achievement Award and a cash prize of \$500 to use toward their graphic arts education. Instructors also receive \$500 to use toward their school's graphic arts educational program.

Professor Mark Snyder regularly encourages his students to get involved in industry competitions. Not only does it help build the reputation of the MU Graphic Communication program but, foremost, it helps students understand industry expectations of quality. And, receiving national recognition such as this is certainly good for a student's prospects after graduation. Snyder stated, "this was a great opportunity and Clark has shown that he has what it takes to excel in the industry."



Dr. Mark R. Snyder, AETM Coordinator

Firefighting Robots Compete Once Again in Osburn Hall

This year we had 11 robots compete for The "Coveted" Best Firefighting Robot Award. The contest is embedded (pun! we use embedded microcontrollers) in the ITEC 467 Mobile Robotics Class. Student teams of one or two members develop unique robots from a selection of available components (sonar sensors, infrared sensors, ultraviolet sensors, machine vision, servos, relays, liquid crystal displays (LCDs), fans, chassis, etc. to tackle the four room, 8' x 8' maze.

The objective is for their robots to locate and extinguish a candle randomly placed in one of four rooms in less than five minutes. Students use the Teensy Microcontroller and C++ to control their designs. Every year a twist, known as the unknown factor, is introduced in the last few weeks of the semester. This year, our maze had occupants. Not just any occupants, but superheroes (The Flash & The Green Lantern) that live in the maze together. The robots were to try and use a new machine vision unit called OpenMV Cam (using Python) to perform color recognition (Red or Green). Once the robots identify a randomized occupant, they either try and tell the superhero to leave the maze via the LCD onboard module (which signals the instructor to remove them physically from the maze) or avoid them altogether, as running over a superhero is an automatic disqualification.

In the end, the winning team was comprised of two AETM RCS majors, Bradford Molchany and Giovanni Rivera (See Figure 2). As a grand prize, the developers of the winning robot earn A's in the class and are excused from the final code exam in addition to receiving a custom plaque/trophy and fancy gold (plastic) metals. Congrats to the new champs!



Dr. John Wright, AETM Coordinator

2020 Department Honors & Awards

Dale Messerschmidt Technical Education Scholarship

Dane A. Koch

Burl Osburn Award

Benjamin D. Whitby

Richard F. Brenner '41 Industrial Technology Scholarship

William Howell

Philadelphia Alumni Award

Tia M. Mauro

Steinmetz Industrial Arts Teaching Award

Jamie Sheehan

Brent D. Frey Technology Education Scholarship

Ryan C. Karpach, Tia M. Mauro, Vlad T. Ciuta,
Justin C. Egresitz, Tyler J. Zeigler, Dane A. Koch

Robert Clark Hosler Scholarship in Industry & Technology

Nathaniel Detweiler, Aleia K. Baker

Robert & Virginia Brown Scholarship in Industrial Technology

Jeremiah Shillingburg

C-P Flexible Packaging - Gary Nicholas Memorial Scholarship

John H. Angelilli

ASSP/Raymond C. Mullin Award

Samantha J. Hackney

Lehigh Valley Chapter of American Society of Safety

Professionals

Luke A. Tsofilas

Paul Specht OSEH Alumni Award

Noah C. Zollner

American Industrial Hygiene Association

Dylan J. Hyer

ISA Central Keystone Section Outstanding Student Award

Cole D. Lefever

Henry J. Kauffman Award

Merritt J. Marks

Paul Eshleman Memorial Scholarship

Jeremiah A. Shillingburg

Susquehanna Engineering & Manufacturing/Gravell Scholarship

Ashly N. Dodd

Dalton Smart Humanitarian Award

John H. Angelilli

Abromaitis Family Scholar-Athlete Scholarship

Sydney A. Levin

Harry & Carolyn Lohss Manufacturing Engineering Scholarship

Jacob J. Chubin

William McGrorty Excellence in Printing Technology

Makenna E. Hewitt

Steinman/Intelligencer Upperclassman Scholarship

Alejandro J. Rosario

Susquehanna Litho Club Underclassmen Scholarship

Ashley N. Dodd

Donald Maley Spirit of Excellence Graduate Student Citation

Michael Aboulhoda

Donald Maley Spirit of Excellence Undergraduate Citation

Joseph Kaskel

Millersville SME Student Chapter Update

The Millersville Society of Manufacturing Engineers (SME) is an organization, founded in 1932, for individuals, students, educators and companies involved in all facets of engineering. Since 2017 the SME group has focused on the collegiate Baja Society of Automotive Engineers (SAE) competition. In Baja SAE, students are tasked with designing and building a single seat, all terrain sporting vehicle that is to be a prototype for a reliable, maintainable, ergonomic, and economic production vehicle that serves a recreational user market. Millersville students learn to function in a team environment to design, engineer, build, test, promote, and ultimately test a vehicle within the limits of the SAE rules.



The Millersville SME club had a record 27 members who regularly attended club meetings this year. A considerable amount of time was spent during the fall semester re-designing the drive train and suspension system; in addition to, re-designing and improving on other components in the existing buggy. Unfortunately, Covid-19 resulted in the cancellation of the dynamic events in the Louisville, KY Baja event this year; however, the team will still be competing in the online portion of the competition taking place this June.

Despite the current challenges, our team is still excited for the upcoming 2021 competition and making plans for building a new chassis and making it into a four-wheel drive to comply with recent rule changes. The team is also busy designing an improved drive train, and steering system which they plan on fabricating entirely in-house. To keep current with our club's activities please check out our website: www.millersvillebaja.com.

Dr. Alex Johnson, MFET Coordinator ■

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