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May 9, 2014

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"Engineering or Technology is the making of things that did not previously exist, whereas science is the discovering of things that have long existed."
~ David Billington

CEAS News

WMU Competes In International Aircraft Design Competition



L-R: Aisosa Asemota, Laurence Timmerman, Jacob Maynard, Tim Myer, Tyler Wall, Cameron Segard, and Nathan Meinzer

The WMU chapter of America's Institute of Aeronautics and Astronautics (AIAA) recently traveled to Wichita, Kansas to compete in the international [Design, Build, and Fly \(DBF\) competition](#). The eight month long DBF competition, sponsored by Cessna Aircraft Company, Raytheon Missile Systems, and AIAA, provides aerospace engineering students with real-world aircraft design experience. During the eight months, teams design and build a RC airplane which is required to complete three unique missions. The theme for this year's competition was to create a bush plane capable of completing simulated medical evacuation missions. WMU was able to complete all three missions, a task which no current member had previously achieved. Designing a plane capable of completing the entire competition was the team's main goal this year, and the reward for completing this goal was a 10th place finish out of 80 teams.

The WMU team has progressed over the past few years as it took 35th in 2012 and 20th in 2013. Earning 10th place overall was not easy, as many team members spent late nights building the 4.5 lb. aircraft. In addition to the countless hours spent designing the aircraft, the team had to fly the aircraft in 20-30 mph winds during the competition. The winds proved devastating to many teams, but the team pilot, Cameron Segard, was able to successfully fly and land the aircraft in the adverse weather conditions. Even though the team is happy with their recent success, they understand there still is much room for improvement. The amount of students enrolled in WMU's aerospace engineering program has increased over the past few years bringing with it new and fresh ideas. Current members hope the new students will learn from the current designs and improve upon them for future competitions.

~ Laurence Timmerman, contributor

Kyle Croes Wins the James W. Barany Award for Student Excellence

Kyle Croes an industrial and entrepreneurial engineering student, was recognized by the National Office of the Institute of Industrial Engineers as the 2014 winner of the Institute of Industrial Engineers James W. Barany Award for Student Excellence. This national award recognizes an undergraduate student who has provided distinguished service to industrial engineering through excellence of scholarship and campus leadership. Kyle stated that:

The James W. Barany award is something I couldn't have anticipated receiving. An award that spans the US, Mexico, and Canada and encompassing hundreds of competitive, prestigious colleges is something I would regard as out of my league. It is a flattering, humbling experience and I am honored to be selected for it. Importantly, my good friend and mentor **Dr. Bob White** should take a lot of the credit for this, as he sponsored my candidacy for this award and inspired me to work harder and strive for new heights of excellence. I am proud to have been a contributing influence to the Institute of Industrial Engineers, and hosting the 2014 IIE Conference here at Western was a great experience. Finally, I hope this provides motivation to Western engineering students to pursue great things, and to aspire to be recognized.

Kyle is the first student at WMU to win this award and he and his father will be going to Montreal in May to receive the award at IIE's Annual Conference.



Kyle Croes

Institute of Industrial Engineers (IIE) Paper Competition Award

Congratulations goes to **Simon Matar** on winning the 3rd place award at the Student Paper competition organized by the Institute of Industrial Engineers (IIE), Construction Engineering Division. Simon entered the competition based on his research conducted during summer 2013 under the supervision of **Dr. Upul Attanayake**, Assistant Professor of Civil and Construction Engineering at WMU. The paper titled "Evaluation of Potential use of Waste Powder Paint (WPP) in Cement Grout and Mortar" was submitted to the competition. The research objective was to evaluate the possibility of using WPP in cement grout and mortar. Powder paint is a polymeric material and a large quantity of powder paint waste from auto and furniture industries is usually sent to landfills. To help sustainability, it is vital to explore the potential use of WPP in other industries. Hence, the use of WPP in cement-based products such as grout and mortar was evaluated by analyzing their fresh and hardened properties. Preliminary results with WPP showed reduction in heat of hydration, reduction in compressive strength at early ages, continuous strength development with WPP in the presence of moisture, significant expansion (35%) opposed to the shrinkage properties observed with cement, and altered absorption and leaching mechanisms. The preliminary results show a great potential to use the material in structural, foundation, and tunnel lining retrofit activities. The research project was funded by the Green Manufacturing Industrial Consortium at WMU. The individual support of Drs. John Patten and David Meade, Ms. Carey Schoolmaster, and Mr. Colin Knue is greatly appreciated.



Simon Matar

~ Upul Attanayake, contributor

WMU Students Impress at PaperCon 2014

According to **Kate Miller** CEAS recruiter, PaperCon 2014 was another extraordinary experience for students thanks to the support or financial contribution of the Paper Technology Foundation, the College of Engineering and Applied Sciences, the Department of Chemical and Paper Engineering, and TAPPI which made the trip possible. This year, Western Michigan University sponsored 11 students to attend, 1 additional student was successful in gaining sponsorship from his employer. All of the students representing WMU on this trip are now on their way to their summer or permanent employment destinations. WMU students were tremendous representatives of our University, College, and Program and continue to impress employers and industry professionals with each interaction. Also WMU partnered with 10 other paper schools to host an alumni soiree at PaperCon. This event allowed past and present students of our program to meet and network. Kate reported that we had the largest number of both students and alumni attending than any other school. It is expected to become an annual event. Two students were



Dr. Chris Luettegen, Senior R&E Manager--North American Innovation, Katie Stickels, Ryan Stoneburner, Lexi Pierce, and Kevin Bussa at the alumni soiree.

recognized at the event as well, **Taylor Baranaski** received the Recycled Paperboard Technical Association student scholarship award and was recognized at their annual dinner on Sunday, April 26th. This summer Taylor is interning at Graphic Packaging in Battle Creek. **Garrett Fisher** won the TAPPI National Paper Scholarship, a very commendable achievement for someone only one year into the program. This summer he will be in West Point, VA serving RockTenn as their Power Intern.

Pictured left is David Briere, Senior VP for Coated Recycled Mill Operations for RockTenn President, Taylor, and Amy Shaffer, Executive Director of the Recycled Paper Board Association. **Pictured right** is Garrett Fisher.



WMU Civil and Construction Engineering Department Prepares Career-Ready Graduates

Founded in 2002, the Civil Engineering program at Western Michigan University has become the third largest such program in the state of Michigan. The Civil and Construction Engineering (CCE) department mission is to provide students the opportunity to obtain state-of-the-art engineering knowledge and skills through student-centered education whereas the College of Engineering and Applied Science (CEAS) mission is to prepare career-ready graduates.

In 2011, looking at both the CCE and CEAS missions, **Dr. Upul Attanayake**, Assistant Professor of Civil and Construction Engineering, established a process in collaboration with the Michigan Concrete Association (MCA) for WMU CCE students to obtain the American Concrete Institute (ACI) Concrete Field Testing Technician - Grade I certification. "ACI certificates are accepted worldwide and our students are certified during their junior year. State highway agencies, contractors, and testing labs prefer students with this certification because the students can walk directly into a construction site and performing productively. The experience our students gain as certified technicians and the contacts they develop with the industry, help our students secure jobs much easier than the students from other institutes", stated Dr.



Attanayake. So far 55 students acquired the Grade I certification through this collaborative effort between WMU and MCA. Mr. David Hollingsworth the Director-of Technical Services/Training at the Michigan Concrete Association, proctored the entire examination while several other certified technicians helped with proctoring individual practice tests and written examinations. With the help of MCA, this examination is being conducted annually at the end of the spring semester at Parkview campus facilities. The picture left shows some of the students who took the exam this year as well as Mr. David Hollingsworth's team representing MCA.

~Upul Attanayake, contributor

Summer Camps 2014

Summer camps 2014-Program and Energize Your Own T-Shirt: Microcontroller E-Textiles:

Monday, June 23, 2014 through Friday, June 27, 2014. 8:30 am -12:30 pm.

Advanced Technology Experience at WMU:

Monday, June 23, 2014 through Friday, June 27, 2014. Friday is 9:00 am -4:30pm.

Fun in the Sun –A Half-Day Solar Energy Camp:

Thursday June 26, 2014, 1:00-5:00 pm.

Introduction to Video Game Programming, Computer Science camp:

Monday July 7 through Friday, July 11, 2014, and Monday July 14, through Friday, July 18, 2014. 1:00 to 4:30pm.

The Sky is Not the Limit, Aerospace Engineering camp:

Monday, August 18, 2014 from 9:00am -4:00pm, through Friday, August 22, 2014.

Friday is 9:00am-2:00pm.

[Click here for more information on the camps.](#)

Graduate Poster Competition

Posters were submitted in the first CEAS Graduate Research Poster Competition, held on April 15, 2014 in conjunction with the Senior Engineering Design Project Conference. Posters were displayed on level 1 at the Main Entrance, and the public was invited to vote for their favorite by text message. Entries spanned the college and showcased truly innovative research being done by our graduate students. Posters were separated into two categories, doctoral and masters.

The winners of this year's competition were:

1st Place, Masters Category - Vinay Turke

2nd Place, Masters Category - Michael Joyce

1st Place, Doctoral Category - Ali Eshkeiti

2nd Place, Doctoral Category - Sai Guruva Reddy Avuthu

Congratulations to all the entrants - their hard work and effort came through clearly in their poster submissions.

~ Steve Durbin, contributor