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Oakland University

School of Engineering and Computer Science



The official newsletter serving students, alumni, faculty, staff and friends of the School of Engineering and Computer Science at Oakland University.

May 2013
Volume 2 - Issue 3

Winter 2013 Senior Design competition was a success

As the Winter 2013 semester came to a close, engineering students had the opportunity to present their final projects to their professors, parents, and colleagues during the Senior Design Competition.

The event was held inside the School of Engineering and Computer Science, as well as in the courtyard outside of the building. Senior teams could be seen outdoors presenting their robots' skills in an obstacle course, while sophomore groups present their class projects indoors.

Jared Allen, an Electrical and Computer Engineer in his senior year at OU, and his team took second place in the design competition.

"Grizzbot is a three wheeled robot. The front wheels are each connected to a motor and the rear is just along for the ride. It navigates the cone course by using a camera and an ultrasonic range finder," Allen said.

Each senior majoring in engineering must complete this project before they graduate. The project takes one semester to complete and must stand up to a predetermined obstacle course created by the current professors teaching the course.

This year's obstacle course consisted of bright orange cones that the robots had to salomon, or go around, without contacting them. Being autonomous, each robot had to be programmed to avoid the specific color of orange associated with the cones.

"The robot performed excellently. Grizzbot completed the course twice out of the four runs we were allowed. The first successful run took 1 minute 3 seconds but the robot contacted one of the cones. Contacting the cone cost us a 1 minute penalty bringing our time to 2 minutes 3 seconds. The second successful run took 1 minute 1 second. Only one other team successfully completed the course. Their robot took 1 minute 19 seconds," Allen said.

The competition was won by a robot called Hobobot 3000.

In addition to completing the course in a timely fashion without hitting any cones, the teams are also judged on how much money went into creating their robot. The more cost effective robot may win over the faster robot.

Throughout the course of the semester, student groups are required to meet weekly with their professor to discuss their progress.

Dr. Michael Latcha, an associate professor for the Mechanical Engineering Department, is one of the professors who teach the course.

"I was involved in the development of the SECS Senior Design model 2002-03, and have been the lead instructor since 2004," Latcha said.

Latcha also assists in writing the project guidelines for each semester. He said that no semester project is the same.

"While we've done projects mostly with robots (and have required them to do very different things) in the last several semesters, we've also developed projects for the School of Nursing and for global entrepreneurs. Every semester's project brings its own set of challenges and leaves its own particular memories," Latcha said.

Latcha said that the students are graded mostly for their contribution to the group, while the competition is worth only 15 percent of their grade. If a robot fails the obstacle course, the team will not necessarily receive a failing grade in the class.

For upcoming seniors, Latcha encourages them to believe in their abilities.

"My advice to students on the first day of class is to be confident about your knowledge in your field, be willing and flexible in working with others, and to make the commitment up front to put in the long and sometimes difficult hours to make the project a success," Latcha said.

"This course can be either the best or the worst experience in a student's college career, and the difference can always be traced back to the personal commitment the student has made to the project. There are no shortcuts on the road to excellence."

ENGINEERING IN THE NEWS

Engineering Center construction site has expanded
(<http://www.oakland.edu/Newsletter/ViewNewsletter.aspx?x=YTn6r2ViapOgLGyJ0kG7LA%3d%3d&sid=1>)

Student makes impact during Chrysler internship
(<http://www.oakland.edu/news/?sid=304&nid=9861>)

Doctoral candidate earns national award for research
(http://www.oakland.edu/view_news.aspx?sid=34&nid=9839)

Oakland County trade mission, including Amy Butler, director of OU Inc., travels to Japan
(<http://newsle.com/article/0/69478613/>)

OU expands its reach
(<http://www.detroitnews.com/article/20130429/SCHOOLS/304290349>)

ISE Department is pioneering PLM Education
(<http://www.oakland.edu/news/?sid=304&nid=10084>)

IMPORTANT DATES

May 8 - 11

Formula SAE Competition at Michigan International Speedway (<http://students.sae.org/competitions/formulaseries/fsae/michiganprogram.pdf>)

May 27

University Closed - Memorial Day Holiday

June 7 - 10

The 21st Annual Intelligent Ground Vehicle Competition (<https://www.oakland.edu/upload/docs/SECS/Newsletter/2013%20IGVC%20Schedule&Teams.pdf>)

OUTREACH EVENTS

Register now for an upcoming camp or workshop.

K-12 STEM Camps

One-week camps for upper elementary, middle school, and high schools for students who do or might have an interest in Science, Technology, Engineering and/or Mathematics (STEM).

Register here (<http://www.oakland.edu/formbuilder/forms.aspx?formid=74516&sid=304>)

Macomb Engineering and Computer Science Summer Camp

Explore exciting and in-demand careers in the fields of industrial, systems, mechanical, computer and electrical engineering, and computer science. Students will also delve into the emerging fields of biomedical and alternative energy. Hands-on activities and simulations such as constructing a solar panel and building electronic motors and assemblies will engage students as they learn about career options in this growing field. Students will also travel to Oakland University's campus in Rochester for an extensive alternative energy tour and visit the Clean Energy Research Center.

Register here (https://ebill.oakland.edu/C21178_ustores/web/product_detail.jsp?PRODUCTID=1159)

Engineering and Computer Science Summer Workshop

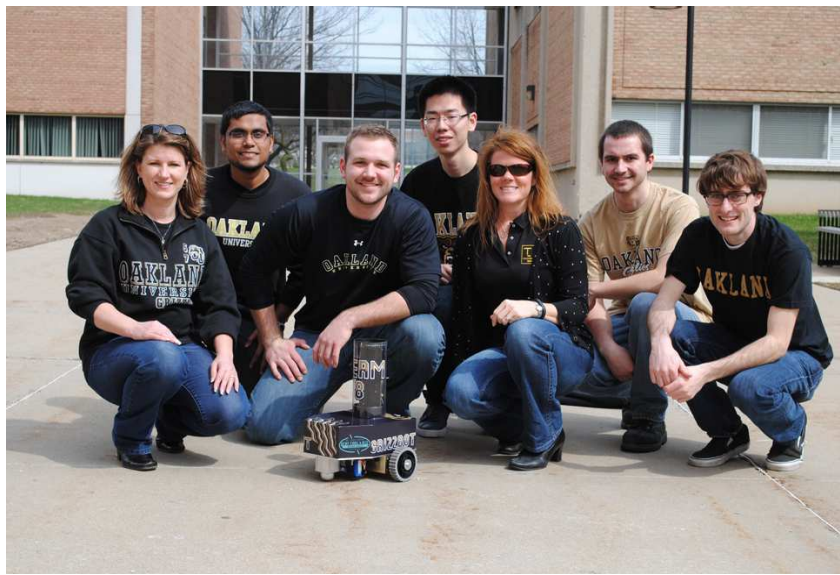
One-week intensive workshop for students who have completed their freshman, sophomore, or junior year of high school and want to explore the fields of engineering and computer science.

Register here (<http://www.oakland.edu/formbuilder/forms.aspx?formid=33116&sid=304>)

To learn more about outreach events and opportunities through the School of Engineering and Computer Science visit [oakland.edu/secs/outreach](http://www.oakland.edu/secs/outreach) (<http://www.oakland.edu/secs/outreach>).

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248 DHE



Senior Design is the culmination of a student's education at Oakland University's School of Engineering and Computer Science. Pictured left to right are Denise Vallis, Mechanical Engineering, Shakil Qureshi, Electrical and Computer Engineering, Jared Allen, Electrical and Computer Engineering, Chen Deng, Mechanical Engineering, Daphne LaPensee, Mechanical Engineering, Chris Nowak, Mechanical Engineering and Jacob Smith, Mechanical Engineering.

ECE professor receives lifetime achievement award

Dr. Subramaniam Ganesan, a professor in the Electrical and Computer Engineering Department, was awarded the Lifetime Achievement Award on in December by the International Society of Agile Manufacturing (ISAM).

Ganesan learned he was being considered for the honor six months earlier.

"I was really surprised and felt honored to receive this award," he said.

Ganesan, who has been with Oakland University since 1986, has been educating college students for more than 30 years. He has served as visiting professor at Concord University in Montreal, Canada, as well as faculty member at Western Michigan University.

Ganesan received the award in "recognition of his illustrious career in teaching, research, administration and also of his life -long contribution to the fields of engineering."

Ganesan received his Ph.D. from Indian Institute of Science in 1979.

"Professionally, this award signifies a recognition for my dedicated, enthusiastic teaching, research and service I have done at Oakland University without looking for any reward," Ganesan said. "I wish to thank Oakland University for providing me the opportunity and support to excel as a faculty member in a humble way. The credit goes to Oakland University. After receiving this award, I feel that I have to work more hard to achieve more for Oakland University."



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The School of Engineering and Computer Science is always interested in hearing from our alumni. E-mail us a few lines about your latest job, accomplishment or relocation to prawdzik@oakland.edu (<mailto:prawdzik@oakland.edu>).

Dr. Subramaniam Ganesan, left, received a lifetime achievement award from the International Society of Agile Manufacturing.

Engineering Center continues to take shape



The School of Engineering and Computer Science's new Engineering Center continues to come along nicely. This week work was done to finish the concrete walls and get ready for steel.

Engineering & Computer Science student organization roundup

News and notes from a selection of SECS student organizations.

Congratulations to our outstanding student organizations!

In April the Center for Student Activities celebrated 'The Annual Student Activities and Leadership Award Night.' The School of Engineering and Computer Science's Society of Women Engineers won 'Outstanding Education Program' for their event planned for the Girl Scouts, "Examining Engineering."

Amartanshu Parashar, president of the Institute for Electrical and Electronics Engineers, won 'Outstanding Student Organization President.'

Congrats again!

Tau Beta Pi members attended District Conference

Members of Tau Beta Pi attended the District Conference at the University of Michigan in April. TBP members in attendance were Jameson Carle, Kimmy Romstad, Abedin Sherifi, Tiffany Ohman, Colin Howard, Christina Mullinix and Claudiu Harta.

Romstad was asked by district directors to give a presentation at the conference.

"The purpose of the District Conference is to effectively transition new officers into their positions by teaching them all about their future responsibilities to the chapter," Romstad said. "Being selected by District Directors to present on our chapter's best practices at this conference was an incredible honor. We got the chance to inspire other chapters with ideas to build a stronger chapter. It is very inspirational to see how much fellow Tau Bates learn and take from the conference, and to witness the passion members have for this organization."



TBP members pictured at the District Conference are, left to right, Claudiu Harta, Abedin Sherifi, Dr. Bill Edwards, Kimmy Romstad, Tiffany Ohman, Jameson Carle, Christina Mullinix and Colin Howard.

Sophomore Recognition Dinner held

Tau Beta Pi hosted a Sophomore Recognition Dinner last month in honor of the top 20 students in the sophomore class.

All students received an award and the highest ranking students in attendance received a \$200 scholarship. This year's scholarship winners are James Yonts and Steven Stewart.

"I appreciate the exceptional opportunities offered by the SECS and I'm honored to receive this award," Stewart said. "I am excited to continue my education and this award will surely assist that pursuit."



Dr. Chris Kobus, Director of Outreach and Recruitment and Associate Professor, top left, Dr. Robert Van Til, Professor and Chair of the Department of Industrial and Systems Engineering, top right, and Dr. Lorenzo Smith, Associate Dean of the School of Engineering and Computer Science, bottom right, are pictured with honored students at the Sophomore Recognition Dinner.

Engineering and Computer Science Brag Corner

News and notes from around the School of Engineering and Computer Science.

Computer Science and Engineering

- **Jie Yang, Ph.D.**, has recently published his paper titled "*Detection and Localization of Multiple Spoofing Attacks in Wireless Networks*" in the prestigious journal "IEEE Transactions on Parallel & Distributed Systems."
- **Dr. Yang** has one paper titled "*Sensing Vehicle Dynamics for Determining Driver Phone Use*" accepted to the 11th International Conference on Mobile Systems, Applications, and Services (MobiSys 2013) with acceptance rate 15.7%. MobiSys is the premier conference on mobile and wireless systems, and applications.
- **Dr. Yang** has another paper titled "*Smartphone Based User Verification Leveraging Gait Recognition for Mobile Healthcare Systems*" accepted to the 10th Annual IEEE Communications Society Conference on Sensing and Communication in Wireless Networks (SECON 2013).
- **Mr. Jooseok Lee**, a research from ZenithTek, Korea visits the Software Engineering Lab of **Professor Dae-Kyoo Kim** from February to May 2013.
- **Dr. Ching-seh (Mike) Wu** presented a research paper titled "*Optimizing Medical Data Quality Based on Multi-agent Web Service Framework*" at the MedTech Innovate Seminar of the 2013 MD&M West Conference, Anaheim, CA.
- **Dr. Wu** and his Ph.D. students, **Chi-Hsin Huang** and **Yen-ting Lee**, have a research paper titled "*The Test Path Generation from State-based Polymorphic Interaction Graph for Object-Oriented Software*" accepted by the IEEE International Conference on Information Technology - New Generations (ITNG 2013).
- **Dr. Wu** and his Ph.D. student, **Ibrahim Khoury**, have a research paper titled "*Web Service Composition: From UML to Optimization*" accepted by the IEEE International Conference on Service Science and Innovation (ICSSI 2013).
- **Dr. Wu** and his Ph.D. student, **Chi-Hsin Huang** have a research paper titled "*The Web Services Composition Testing Based on Extended Finite State Machine and UML Model*" accepted by the IEEE International Conference on Service Science and Innovation (ICSSI 2013).

Electrical and Computer Engineering

- **Hoda Abdel-Aty Zohdy, Ph.D.**, John F. Dodge Professor received the Oakland University Research Excellence Award.

Industrial and Systems Engineering

- With the end of the school year and the beginning of spring weather, our ISE students thoughts turn from their studies to another subject - internships. Our ISE students have lined-up several exciting internships at companies such as Chrysler, Crittenton Hospital Medical Center, Fauerica, Rayconnect and even Disney. Please contact **Professor Robert Van Til** at (248) 370-2211 or vantil@oakland.edu (<mailto:vantil@oakland.edu>) if your company is considering an ISE internship program or looking for ISE students to hire for internships.
- About 50 ISE and Engineering Management students and faculty attended the first annual ISE department End-of-the-School-Year Pizza Party. Based on feedback from the students, we are planning to hold an ISE department Start-of-the-School-Year Pizza Party in the fall and also plan to invite ISE department alumni.
- ISE students **John Katona** and **Avinash Konkani** along with **Professor Robert Van Til** presented an overview of robotics to middle school students from the Grand Blanc City School using the robots in the Sharf CIM Laboratory.
- In March, **Professor Robert Van Til** took Oakland University Product Lifecycle Management (PLM) Scholarship students on a tour of Chrysler's Conner Avenue plant - home of the Viper. The plant tour was led by ISE Dept. alumni Doug Lindow and Tyler Morgan. The PLM Scholarship Program was funded by a \$598,980 National Science Foundation (NSF) grant to support students with financial need to study either Industrial and Systems Engineering or Mechanical Engineering. The NSF's goal in allocating these funds is to help satisfy a growing demand for engineers by enabling more engineering students to enter the workforce following completion of their degree.
- **Barb Oakley, Ph.D.** received the Oakland University Teaching Excellence Award.

Mechanical Engineering

- Mechanical Engineering undergraduate student, **Ionut Claudiu Harta**, and Industrial and Systems Engineering student, **Kayla Owens**, presented a conference paper titled "*Tribological Performance of ZnO-Oil Nanofluids at Elevated Temperatures*" at the 2013 SAE World Congress in Detroit, MI on April 18, 2013. This paper is based on research that they conducted under the direction of **Dr. Schall** and **Dr. Barber** during the summer of 2012 with another undergraduate student, **Steven De Jesus Santiago** from the Universidad del Turabo, Puerto Rico, when they took part in the AERIM Research Experience for Undergraduates (REU) program that **Dr. Guessous** and **Dr. Zou** co-direct in the Mechanical Engineering Department. The paper has also been published in the **SAE International Journal of Fuels and Lubricants**. Both students have also distinguished themselves through their academic achievements: **Claudiu** is an OU presidential scholar who was recently awarded an OU Provost's Research award to continue work on his research project; **Kayla** is a member of the OU Women's Soccer team, who has twice earned a spot on The Summit League Academic Honor Roll as a distinguished scholar.
- **Prof. Laila Guessous** conducted a workshop titled "Lessons Learned from the ENGAGE Program: Time-Effective Tips to Improve Faculty-Student Interactions in STEM Classes" through the Oakland University Center for Excellence in Teaching and Learning (CETL) on March 12th. The purpose of this workshop was to discuss and explore some research-based and well tested methods that can improve faculty-student interaction, as a strategy to improve undergraduate student retention and motivation in STEM fields.
- **Chris Kobus, Ph.D.** received a \$41,415 grant from the Michigan Space Grant Consortium (MSGC) to run summer STEM camps for K-12 students, STEM workshops for K-12 teachers, and community outreach.
- ME graduate student **Xin Xie** received the 2012 Most Outstanding Thesis of Oakland University for his Master Thesis titled "*Newdevelopment of spatial phase-shift technology applied in digital shearography and holography*," advised by **Professor Lianxiang Yang**.
- **Lianxiang Yang, Ph.D.**, was invited to give an invited talk titled "Forming Limit Determination by Digital Image Correlation: Methodologies and Potentials" at the International Conference on Applications for Image based Measurements in Ulm, Germany.
- Two ME doctoral students won the 2013 STLE Detroit Section Scholarship. They are **Monica Majcher** (Adviser: **Prof. Zissimos Mourelatos**) and **Ghassan Abed** (Adviser: **Prof. Qian Zou**).
- Journal paper publications are: 1) **Luan Gara, Qian Zou**, "*Friction and Wear Characteristics of Oil-Based ZnO Nanofluids*", Tribology Transactions, 56: 236-244, 2013. 2) **Jiman Han, Qian Zou**, "*Evolution of Contact Characteristics during a Scuffing Process*," Tribology Transactions, 56: 58-64, 2013.
- The Quarton Imagineering outreach program has completed for the year at Quarton Elementary School in Birmingham. Three SECS students -**Caymen Novak**, **Micheal Lohrer**, and **Caleb Noorgard**- were involved. The program runs about 6 weeks, each fall and winter semester. A video from the 2012 program can be seen **here** (<http://www.youtube.com/watch?v=nFP6VIEJDvs&feature=youtu.be>).



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[Coordinate map of Auburn Hills Entrance \(https://www.google.com/maps/@42.672702,-83.220234,16z\)](https://www.google.com/maps/@42.672702,-83.220234,16z)

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