

JUNE 2015 MNE NEWSLETTER

Message from the MNE Department Head

This has been an exciting year of change for the Department of Mechanical and Nuclear Engineering (MNE). I stepped into the role of department head, the college hired Dean Darren Dawson and the university hired Vice President for Research Karen Burg. Together we are taking a fresh look at MNE's role in K-State's 2025 Vision to become a top 50 public research university.



It was outstanding to see MNE's record-high enrollment of 870 students this academic year, a growth trend we expect to continue. As a result, we are launching student retention initiatives, planning upgrades for learning space and hiring new faculty.

This is a very dynamic time. Your investment in mechanical and nuclear engineering students is more critical than ever. Whether you're interested in student retention, learning spaces or the overall educational experience, you'll find several opportunities to help us stay on a successful track.

Student retention

- The *Advising and Recruitment Center* will be a reception site for prospective students and a resource for current students to access computers, meet in small groups and get answers to general questions.

Learning space

- The *Composites Laboratory* is integral to the student learning experience, but major updates are needed to comply with safety requirements and to support our competition teams.
- The Conference Room will provide space for student presentations, meetings and smaller team-based projects.
- Technology upgrades are vital to our ability to record lectures and continue reaching mechanical engineering graduate students around the globe.

Educational Experience

- Excellence funding will support equipment, graduate student workers and research-related travel, all part of helping our new faculty members establish successful research programs.

As we embark on an ambitious plan to improve the student experience, your partnership will be vital to our success. We look forward to discussing what role you might play in this historic journey. Contact the engineering development office to learn more, 785-532-7609 or daniellec@found.ksu.edu.

ME 101 Final Project

In May, as our spring semester was drawing to a close, Prof. Greg Spaulding hosted the 3rd annual ME101 Design Project "Drill Powered Vehicle" Competition. As the event title indicates the student teams are tasked with designing and building a vehicle that they ride that is powered solely by a cordless electric drill. This year the competition went *off-road* and the competitors tried out their designs in grass, on concrete and dirt, and over hills and small obstacles. In addition to the off-road event the vehicle also competed in sled pull and endurance events.



Each team is composed of 6 freshmen, the team is also assigned a mentor from the Senior Design Class. During the semester this freshmen team designs and builds their vehicle. In addition to the design and build the students conduct two design reviews for their mentor. During these design reviews the students provides a written report and an oral presentation of the project status. Two critical skills that the teams develop during this project are teamwork and taking a project through the design process.



Team 1 – Evans, Kelty, Hassell, Blaha, Bohren – first place tie

Team 4 – Hecker, Cheney, Sharlow, Quiason – first place tie

Over 60 participants presented their designs in three different categories. There was a tie for Overall Winner in the competition this year's competition, the teams that earned this year's **full bragging rights** are:

Team 1 – Lee Evans, James Kelty, Brycen Hassell, Cain Blaha, Sullivan Bohren

Team 4 – Samantha Hecker, Nathan Cheney, Chris Sharlow, Brett Quiason

Congratulations to all the participants in this year's competition.

Order of the Engineer

Nine MNE students were inducted into the Order of the Engineer this spring.

Any engineer is eligible for induction if he or she has graduated from an EAC of ABET program or holds a license as a Professional Engineer in the United States. Students enrolled in EAC of ABET degree programs are eligible if they are within one academic year of graduation. Other candidates may be considered eligible because of equivalent credentials, subject to the approval of the local Link Board of Governors or the National Board of Governors. Anyone may witness the induction ceremony. Families are often invited as guests.



The Order of the Engineer was initiated in the United States to foster a spirit of pride and responsibility in the engineering profession, to bridge the gap between training and experience, and to present to the public a visible symbol identifying the engineer.

Theodore A. Augustine
Bonnie Bowman
Skyler Butler
Alan Duong
Kristen N. Fischer

Christa Lynn Hagedorn Tank
Amanda Van Nuland
Austin E. Wessel
Andrew Willman

DOE Collegiate Wind Competition

K-State was a *Finalist* in the 2015 DOE Collegiate Wind Competition at the National Renewable Energy Laboratory's National Wind Technology Center (NWTTC) in Boulder, Colorado. Competing teams included the University of Massachusetts at Lowell, Colorado School of Mines, Pennsylvania State University, California Maritime Academy, Boise State University, Northern Arizona University, and Kansas State University.



Pictured right: K-State Team for the DOE Collegiate Wind Competition

Teams of undergraduates tested original designs of model wind turbines in an on-site wind tunnel and presented their technical designs to wind technology experts.

This year there was the addition of a surprise challenge. Teams were given a set of criteria that included the location of transmission lines, access roads, local demand, and integration facilities, and tasked to use their knowledge of wind energy systems to determine the perfect location for a new wind plant that would produce energy at the lowest cost possible.

Since the Collegiate Wind Competition is intended to inspire and equip the next generation of wind professionals, the involvement of the wind industry is critical. The Energy Department is proud to have

collaborated with Siemens Wind Power, Vaisala, Renewable Energy Systems – Americas, ReGenerate, Invenery, KidWind, and the National Renewable Energy Laboratory to make the Collegiate Wind Competition 2015 Engineering Contest a success.



Shane Smith looks at a wind turbine tested by KSU

The Energy Department's Wind Program leads the nation's efforts to accelerate the deployment of wind power technologies through improved performance, lower costs, and reduced market barriers.

K-State Team

Thomas Umscheid

Shane Smith

Lawryn Edmonds

David Plenert

Lee Evans