

GET TO KNOW THE DEPARTMENT!

The MIE newsletter features events and department faculty research.

NOTABLE DATES:

- Spring Break 2016 (March 16-20)
- Senior Design Night (Thursday, May 5th)
- Spring 2016 MIE Advisory Board Meeting (Friday, May 6th)
- Spring 2016 Commencement (Graduate May 13, Undergraduate, May 14)

MECHANICAL & INDUSTRIAL ENGINEERING (MIE)

College of Engineering
3131 Seamans Center, Iowa City, IA 52242
<http://www.engineering.uiowa.edu/mie>

Spring 2016 | Volume I | Issue II

MISSION STATEMENT

The mission of the Department of Mechanical and Industrial Engineering is to provide an education that builds within students a solid foundation in mechanical and industrial engineering principles, expands the reasoning, communication and problem solving abilities of students, and prepares graduates who have the motivation and ability for lifelong growth in their professional careers; and to develop and maintain a world-class research program in selected focus areas within mechanical and industrial engineering that complements the educational mission and addresses the evolving needs of industry and society.

"There's nothing I believe in more strongly than getting young people interested in science and engineering, for a better tomorrow, for all humankind." –Bill Nye

AIAA REACHES FOR THE SKIES

The University of Iowa American Institute of Aeronautics & Astronautics (AIAA) student organization competed in the Midwest High Power Rocket Competition in North Branch, Minnesota on May 19th-20th, 2015. This was the group's first 2015 competition and included 19 other schools from the US. The project began in fall 2014 when the team composed the rocket design. Eight AIAA members represented the University of Iowa at the event.

The UI chapter of AIAA received the Most Improved Student Organization award at the first annual Engineering Professional Development Etiquette Dinner & Awards Banquet on April 23rd. AIAA has 20 members and is open to all students, including non-engineering majors. Leadership includes Vicki Trojanowski (President), Kayla Racinowski (Vice President) and Austin Brenner (Senior Design Lead). For more information, contact aiaa.uiowa@gmail.com.



UI AIAA accepting the award of "Most Improved Student Organization."

L-R, Associate Professor and AIAA faculty advisor Albert Ratner, Brandon Demerath, Tejasvi Sharma, Shelby Clair, Victoria Trojanowski, Austin Brenner, and Kayla Racinowski

MECHANICAL & INDUSTRIAL ENGINEERING SOCIAL MEDIA

Follow MIE on social media! MIE thanks student office assistant, Megan Grubb for updating and activating the MIE social media platforms:

- [Facebook](#) (Page): University of Iowa Mechanical and Industrial Engineering
- [Twitter](#): @uiowa_mie
- [LinkedIn](#) (Group): University of Iowa Mechanical and Industrial Engineering
- [Flickr](#): University of Iowa Mechanical and Industrial Engineering
- [Instagram](#): @uiowamie

MIE will share Facebook articles about faculty, students, research, awards, presentations, and deadlines, as well as seminar announcements and related information.

Twitter posts allow MIE to communicate quickly and directly with followers in addition to the Facebook page. Twitter often reaches followers more quickly than Facebook and shares a topic at a glance. Followers are encouraged to retweet the information to help our communication groups grow.



LinkedIn helps connect with alumni. Our group includes 700 members and MIE hopes that number continues to grow as more alumni connect through updates about the Department. LinkedIn also connects students to alumni resources regarding future careers and graduate programs.

Flickr can provide a story through photos rather than words. Public photos from events, activities and presentations may be uploaded and users may post photos from other users through accreditation from those accounts.

Instagram is a photo and video platform for sharing photos of campus, activities, and events related to the Department as well as student and faculty projects and competitions. Faculty, staff and students are able to use the hashtag #uiowamie for photos relating to the department, which allows us to see who's posting about us and also to share those photos.

MIE intends to reach out and connect with alumni and students through social media by sharing important events and opportunities on campus. The Department plans to feature seminar announcements, job opportunities, research highlights and more through posts each week.

CURRICULUM IMPROVEMENT

Wind Energy Certificate Program Updated

The Wind Energy Certificate has been developed as an effort between the Departments of Geography, the Department of Electrical and Computer Engineering, and the Department of Mechanical and Industrial Engineering, which serves as



home for the program. Originally developed as part of the IAWIND program in 2012 by faculty in Geography, Mechanical and Industrial Engineering, it has been reformulated in 2015.

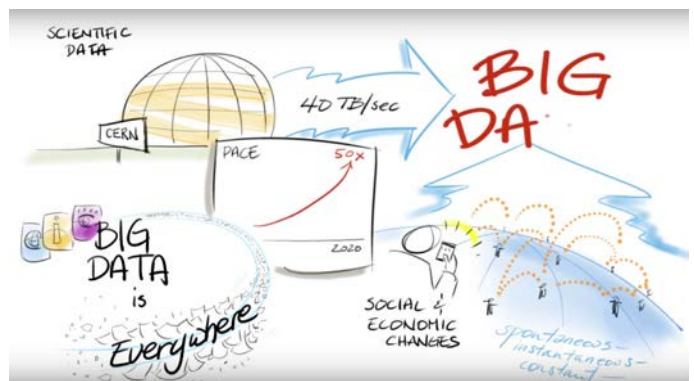
Professors James Buchholz and Pablo Carrica (MIE), David Bennet and Marc Lindermann (Geography) and James Maxted (ECE) lead the effort. A total of 18

semester hours in elective courses are needed to complete the Certificate, of which 2 courses must be from 5 tightly related to wind energy fundamentals. The rest of the classes can be chosen to focus in a specific area of interest in wind energy. There are predesigned tracks on Aerodynamics, Energy and Environment, Power Systems, and Spatial Analysis, Planning and Policy. More information can be found at <http://www.engineering.uiowa.edu/mie/undergraduate-program/certificate-wind-energy>

New Big Data Analytics Elective Focus Area (EFA)

Many graduates of Industrial Engineering are recruited to jobs in the field of Big Data Analytics, which is the process of examining Big Data to uncover hidden patterns, unknown correlations and other useful information.

Every day, we create 2.5 quintillion (10^{18}) bytes of data — so much that 95% of the data in the world today has been created in the last 12 months alone. This data comes from everywhere: sensors used to gather climate information, posts to social media sites, digital pictures and videos, purchase transaction records, and cell phone GPS signals to name a few.

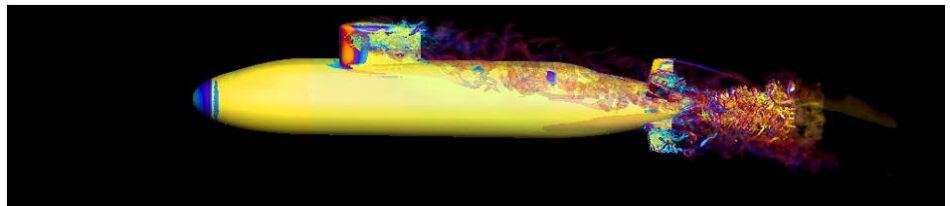


The BIG DATA ANALYTICS EFA includes courses in the field of Data Mining (Knowledge Discovery and Pattern Recognition) and improving the technical background of students (Computers in Engineering and Information Visualization). Advanced courses are planned for the future (Data Analytics and Large Data Analysis).

New Naval Hydrodynamics Certificate Program

The Department of Mechanical and Industrial Engineering (MIE) is the home of a new University of Iowa Certificate Program in Naval Hydrodynamics. The program was developed through a STEM education grant from the Office of Naval Research led by Professors James Buchholz and Pablo Carrica. The MIE faculty are working with Dr. Jae-Eun Russell of the University of Iowa's Center for Teaching on course design and program assessment to ensure a high-quality educational experience for students. The certificate includes 18 semester hours of courses in fluid dynamics, numerical methods and experimental methods, and includes two new courses in naval hydrodynamics. The first new course, ME:4175 Computational Naval Hydrodynamics, is being taught by Professor Carrica in the Spring 2016 semester.

The course was originally planned for Spring 2017; however,



motivated by the high level of student interest, it is being offered earlier to enable more current students to complete the certificate. The program offers students a broad foundation in the fundamentals of fluid mechanics and modern laboratory and computational tools, while introducing students to science & technology challenges faced by the Navy, as well as related career paths. Participants also have unique opportunities to work on Navy-sponsored open-ended projects within a community of peers in the IIHR Fluids Workshop (<http://www.iihr.uiowa.edu/iihrfluidsworkshop/>).

More information on the Naval Hydrodynamics Certificate Program can be found at <http://www.iihr.uiowa.edu/onrstem/certificate-program-in-naval-hydrodynamics/>

PHOTO GALLERY

MIE Winter Event December 4, 2015



MIE Faculty, Staff & guests

Advisory Board Meeting October 9, 2015



Members (front l-r) Bill Haman, Herm Reninga, Bob Stahlin, Miguel Encarnacao; (back l-r) Michael Traetow, Michael Maley, Troy Brunk, Jim Cahill, Lance Wilshusen, Michael Mueller, Justin Strabala, Geoff Ward, Ching-Long Lin (MIE chair)



Advisory Board tour of Operator Performance Lab with IE Associate Professor Tom Schnell

Senior Design Night December 9, 2015

See more photos at [Flickr](#)

[Mechanical Engineering Design Project](#), [Program for Enhanced Design Experience](#), [Virtual International Project Team](#), [Industrial Engineering Design Project](#)



PEDE Team B- Austin Evens, Eric Clasen, Alan Callender & Zach Manders (not pictured)



PEDE Team D: Colton Barone, Luke Benischek, Craig Brown & Kyel Doerring



IEDP Team- Ytalo Magalhaes, Evan Bridwell, Thomas Miller & Cody Wagner



MEDP Team D- Matthew Panzer, Chloe Paul, Derek Platt & Jay Patel



MEDP Team I- Dennis Long, Emily Fohn, Megan Bathel & Shannon Struttman



Senior Design Night dinner in Seamans Center

NEW MIE ADMINISTRATION

Ching-Long Lin, Mechanical Engineering Professor, was appointed as the new DEO of the Department of Mechanical and Industrial Engineering (MIE) at the University of Iowa this past summer. He grew up in Taiwan, obtained his Ph.D. degree from the Department of Mechanical Engineering at Stanford University and began his journey at The University of Iowa in 1997. The MIE department consists of two accredited programs, mechanical engineering and industrial engineering, thus this department is well positioned to expand its endeavors in interdisciplinary curriculum and research. He believes that the ability to offer interdisciplinary programs will make MIE stand out among others. Iowa City is where he calls home. Over the past several years, Ching-Long has developed a passion for photography. It taught him to appreciate and pay attention to the beauty of our surroundings. He took his first Milky Way shot in his backyard on a summer night. During the winter, he gets excited when the weather is cold and windy because it makes American bald eagles more active. While most people enjoy the warmth of their homes on these days, you'll find him taking shots of eagles along the Mississippi River.



Ching-Long Lin

Tara Hoadley is MIE's new Academic Program Specialist. She is a native Iowan, born and raised in Des Moines. She moved to Iowa City and attended the University of Iowa studying Anthropology. She lives in Iowa City and first worked for the university as a student and continued after graduation. She is excited to join MIE and be part of a very diverse team, "Let's see what we can do!" Outside of the office, Tara enjoys spending time with family and friends.



Tara Hoadley

Another student office assistant recently joined MIE. Alexis Busch is a sophomore at the UI studying communication and human relations. She is originally from Cedar Rapids, Iowa, and went to Linn-Mar High School. On campus, Alexis is involved in Greek life and Dance Marathon. In her free time, she likes being active and she is addicted to puppies and Starbucks. She is training and working with Megan and will continue with MIE after Megan graduates in May, 2016.

FEATURED IN THE NEXT ISSUE WILL BE...

New Faculty in Fall 2015

Stephen Baek, Assistant
Professor in Industrial
Engineering



Ruben Beltran del Rio,
Lecturer in Industrial
Engineering



Ranganathan
Gopalakrishnan, Lecturer in
Mechanical Engineering



To share highlights of current research or events, please contact Megan Grubb at megan-grubb@uiowa.edu for more information. Contributions made by: UI AIAA, Tara Hoadley, Ching-Long Lin, Alexis Busch and IIHR.