

April 23, 2012

Dr. Caroline Hayes named Mechanical Engineering Department Chair

Caroline Hayes has been named the College of Engineering's next chair of mechanical engineering. She will also hold the positions of professor of mechanical engineering, and Lynn Gleason Professor of Interdisciplinary Engineering. Her appointment will begin October 1, 2012. ([Full story](#))



Hayes

A carbon-negative economy

"Let's not simply reduce the CO2 emissions going up into the atmosphere. Let's draw them down." So says **Robert Brown**, professor of engineering and a leader of the university's [Initiative for a Carbon Negative Economy](#) and its [Bioeconomy Institute](#). Those are interdisciplinary campus efforts to develop ways to remove carbon dioxide from the atmosphere by growing plants or algae, making them into fuels and burying their carbon residues in soil -- and make money doing it.



Brown

The notion that we can generate wealth and remove CO2 from the air is obviously appealing. As atmospheric concentrations of CO2 rise and climate risks grow, so does the need for carbon-negative technologies that pull CO2 from the air, as plants do, and then store it underground or deep in the ocean. ([Full story](#))

Dr. Brown's report "Fast Pyrolysis and Bio-Oil Upgrading" was recently featured as the top download on Biofuels Digest. With currently 130,426 downloads, it has more downloads than any of the 376 other biofuels reports on Biofuels Digest. Check out the top 12 downloads [here](#).

Recent Grant Award Announcements

PI: Terry Meyer

Title: "Hybrid FS/PS Cars and Quasi-Continuous Burst-Mode Imaging for Investigating Turbulent Combustion Dynamics"

Award Amount: \$720,798

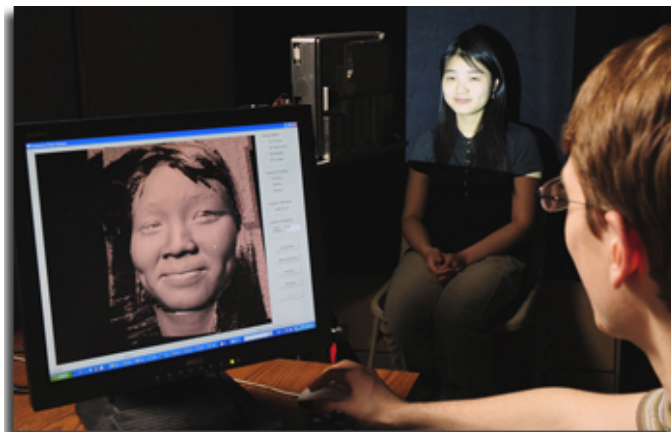
Awarding Agency: Air Force Office of Scientific Research

The goal of this project is to enhance the knowledge and understanding of turbulent combustion dynamics through the development and use of new high-bandwidth laser-based diagnostics and post-processing strategies. A key motivation of the work is to investigate multidimensional time-dynamics in turbulent flames to understand the spatial-temporal coupling of intermittency and chemistry. This understanding is important for optimizing the performance and emissions of novel combustors, especially those utilizing new alternative fuels.



Meyer

Zhang discloses Iowa State's 4000th invention



William Lohry, a chemical engineering student, makes 3-D images of Ying Xu, a mechanical engineering student. The students work in the lab of Song Zhang, who's developing real-time, high-resolution, 3-D imaging technology. *Photo credit Bob Elbert.*

Song Zhang, assistant professor of mechanical engineering, has been working for a nearly a decade to develop high-resolution, real-time, precise, 3-D imaging technologies. As a doctoral student, he began by developing 3-D animations of lung and chest movements as a new way to diagnose health problems. He is now developing technology that uses a camera, a projector and a personal computer to scan a face and instantly display an accurate 3-D image of every line, contour and movement.

Zhang said there's a simple reason he came up with what turned out to be Iowa State's 4,000th invention disclosure. Because his technology records 3-D images at up to 10,000 frames per second, "It was impossible to store the data," Zhang said. "This was invented because I had to. We were running out of memory to store all the data." ([Full story](#))

Jose and Jeong receive Alliant Energy/Erroll B. Davis Achievement Award

Sophia Jose and **Bieu Jeong**, both seniors in mechanical engineering, were selected to receive Alliant Energy/Erroll B. Davis Achievement Awards. These awards recognize academic achievement in engineering or business administration, leadership in campus and community organizations, and potential for future career success. Each undergraduate student selected to receive the award will receive up to \$5,000.



Jose

Jeong

Jose and Jeong were honored at the 2012 Diversity Catalyst Award and Alliant Energy/Erroll B. Davis Jr. Achievement Awards reception held on Thursday, April 12, from 3:00-5:00 pm at the Sheraton Hotel in Iowa City.

PI: Pal Molian

Title: "Swift Manufacturing of Diamond Microtools"

Award Amount: \$12,000

Awarding Agency: US National Science Foundation

The award is for undergraduate student support to conduct research in shock wave induced freeform manufacturing.



Molian

ME alums named 2012 STATEment Makers

Chris Deal and **Wes Meier**, both graduates of mechanical engineering in 2008, were named 2012 STATEment Makers by the Iowa State University Alumni Association. The honor recognizes the early personal and professional accomplishments and contributions to society of Iowa State University's young alumni (graduates under 32 years of age). ([Full story](#))

Alum installs chlorinators in Nicaragua



The chlorinator is the T-shaped device, shown here attached to the loop built onto the main water pipe. *Photo credit Jenni Amundson / CTI.*

Greg McGrath is an ISU Mechanical Engineering alum and co-founder of Emerging Opportunities for Sustainability International. EOS International is a non-profit appropriate technology organization that promotes Compatible Technology International's chlorinator in Nicaragua.

CTI and EOS International plan to help install chlorinators that serve 300,000 people by June 2014. They are on track, McGrath says. In six months in 2011, they helped provide chlorinated water for 20,000 people, and by the end of this year, they plan to reach 100,000 people. ([Full story](#))

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ME senior recognized for abundant accomplishments

The College of Engineering advances many successful engineers into industry each year, and they all have unique experiences and accomplishments from their time at Iowa State. Mechanical engineering senior and Mason City native **Chloe Dedic** is no exception.



Dedic

In Dedic's nearly four years at Iowa State, she has upheld a 3.99 GPA, participated in groundbreaking research, and participated in extracurricular programs. These activities ultimately led to her selection for prestigious honors such as the Barry M. Goldwater Scholarship, the Wallace E. Barron All-University Senior Award, and she was named the College of Engineering Student Marshal for the May commencement ceremonies. ([Full story](#))

Undergrads represent ME at symposium

Mechanical Engineering were exceptionally well represented at the April 17 Symposium on Undergraduate Research & Creative Expression. The day's events included more than 100 unique presentations from students representing 45 different academic programs-- another record level of participation. View a [full schedule](#) of the symposium.

Upcoming Events

April 24 – [Mechanical Engineering Design Expo](#)

Graduation Events

May 4

4:15 to 6:45 p.m. – **College of Engineering Master's/PhD Pre-Commencement Reception**, 220-224 Scheman Building
8:00 p.m. – **University Graduate College Ceremony**, Hilton Coliseum

May 5

8:30 to 10:30 a.m. – **Mechanical Engineering Undergraduate Departmental Reception**, Great Hall, Memorial Union ([Contact Denise Birney for more details](#))
1:30 p.m. – **University Undergraduate Ceremony**, Hilton Coliseum

Do you have department news you'd like to share?
Please e-mail news items for InCYde Mechanical Engineering to [Alex Rausch](mailto:Alex.Rausch)