InCYde MECHANICAL ENGINEERING
IOWA STATE UNIVERSITY
Department of Mechanical Engineering

May 16, 2012

## Wickert named senior vice president and provost


Wickert

**Jonathan Wickert**, dean of the College of Engineering and professor of Mechanical Engineering, has been tapped to become ISU's next senior vice president and provost.

President Steven Leath selected Wickert to become Iowa State's chief academic officer following a national search. The appointment is subject to approval by the Iowa Board of Regents. Wickert will assume his new post July 30, and an interim will be appointed to lead the College of Engineering while a search is conducted for a new dean. (Full story)

## Heindel joins NSF EPSCoR leadership team


Heindel

**Ted Heindel** has been appointed leader of the energy utilization plank of a project aimed at building Iowa's research capacity in renewable energy and energy efficiency. Heindel, interim chair of the mechanical engineering department and Bergles Professor of Thermal Science, will become one of four co-leaders of Iowa's $20 million National Science Foundation's (NSF) Experimental Program to Stimulate Competitive Research (EPSCoR).

"Ted is a great addition to our team and is well suited to lead the energy utilization platform with his expertise in both energy research and education." said **Robert C. Brown**, leader of the Iowa NSF EPSCoR program. Brown is Anson Marston Distinguished Professor in Engineering, the Gary and Donna Hoover Chair in Mechanical Engineering, and the Iowa Farm Bureau Director of Iowa State's Bioeconomy Institute. He noted that Heindel specializes in thermal-fluid sciences, which form the backbone of many energy production and utilization systems. (Full story)

## Zhao featured in Journal of Applied Physics

A paper by **Yue Zhao**, graduate student in mechanical engineering and research assistant to Associate Professor **Pranav Shrotriya**, has been selected as a research highlight of the Journal of Applied Physics. The paper is titled "Cantilever deflection associated with hybridization of monomolecular DNA film." (View here)

## VRAC greets visionary

When students and visitors walk into Iowa State University's Howe Hall, they are greeted with a towering, almost futuristic-looking fixture. Inside, some of the world's most sophisticated virtual reality software is on the cutting edge of research projects for high-profile customers like the U.S. Department of Defense and mega-companies like Chicago-based Boeing and Iowa's own Deere & Co.

Thanks to the work done at ISU's Virtual Reality Applications Center, or VRAC, Deere has found more efficient ways to train its

## Team PrISUm prepares for 2012 American Solar Challenge


Hyperion and Team PrISUm's official race crew photo for the 2012 American Solar Challenge competition.

Team PrISUm is currently gearing up for the cross-country 2012 American Solar Challenge. This competition begins on July 6th with four days of "scrutineering" where race officials will inspect all of the solar cars for compliance with race regulations. Teams that successfully pass these inspections will move on to the 3-day 2012 Formula Sun Grand Prix track race from July 10-12 on the 1.6 mile South Course circuit at the Monticello Motor Club in New York.

The final results of this qualifying race determine the starting positions for the cross-country race. If a team is unable to qualify enough drivers with a sufficient number of laps, they may not be allowed to continue in the competition. The solar cars that have successfully qualified will embark from Rochester, New York on July 14 on a 1650 mile road competition that ends July 21st in St. Paul, Minnesota. Team PrISUm is advised by **Emmanuel Agba**, senior lecturer in mechanical engineering. (Visit Team PrISUm's Website)

## Oliver named university professor


Oliver

**James Oliver** was recently named University Professor. Oliver is the Larry and Pam Pithan Professor of Mechanical Engineering as well as the director of the Virtual Reality Applications Center (VRAC). The University Professorship recognizes faculty members whose professional work has focused upon effecting positive, significant institutional change at Iowa State University.

## ME faculty receive promotion and tenure


Olsen


Wang


Meyer

Congratulations to the 14 College of Engineering faculty

employees. Boeing now knows that the huge apparatus can properly display a prototype in the design stages if the company brings it to Ames. And the technology deployed at the 22-year-old VRAC could soon allow doctors everywhere to take a virtual tour of the insides of patients' CT scans.

VRAC Director and Larry and Pam Pithan Professor of Mechanical Engineering **James Oliver** says those possibilities help attract talented students, professors and researchers to the school and to the research program.

"It's a magnet for real creative, smart people, and we nurture those people and help them develop and grow," he said. (Full story)

## Iowa Energy Center supports research aimed at building Iowa's bioeconomy

**Song-Charng Kong**, left, and Nicholas Creager examine a new bio-oil gasifier developed and built on campus. *Photo by Bob Elbert*.

Two research teams affiliated with Iowa State University's Bioeconomy Institute and the Department of Mechanical Engineering have won Iowa Energy Center grants to help them combine biorenewable technologies for better production of fuels and chemicals.

One grant given is up to a three-year, $468,000 grant to a research team led by **Song-Charng Kong**, associate professor of mechanical engineering. Other researchers working on the project are **Robert C. Brown**, Anson Marston Distinguished Professor in Engineering and the Gary and Donna Hoover Chair in Mechanical Engineering; **Eliot Winer**, associate professor of mechanical engineering and associate director of the Virtual Reality Applications Center; and Guiping Hu, assistant professor of industrial and manufacturing systems engineering.

The energy center grant will allow the researchers to gasify bio-oil and develop a computer simulation of the gasifier and its performance. The experimental testing and computational tool will help them improve gasifier performance and predict the performance of a commercial-size plant. They'll also use virtual engineering tools to visualize the layout and operation of a commercial plant.

**Robert C. Brown** is also leading a research team for a two-year, $200,000 grant. The team also includes Laura Jarboe, assistant professor of chemical and biological engineering; David Laird, professor of agronomy; and **Bernardo del Campo**, graduate student in mechanical engineering.

The researchers are converting biochar, a charcoal that's produced by fast pyrolysis, to activated carbon, a form of carbon that's processed to be porous with a large surface area. Activated carbon is often used to remove impurities from gases or liquids. (Full story)

members who were approved for promotion and tenure awards for the 2012-13 academic year. In the department of mechanical engineering, **Michael Olsen** and **Xinwei Wang** were promoted to Full Professor (Already Tenured). **Terry Meyer** was promoted to Associate Professor with Tenure. Well done!

## Spring 2012 Teaching and Research Excellence Awards

Five mechanical engineering graduate students received research and teaching excellence awards for the Spring 2012 semester. **Mahdi Javanbakht**, **Kamran Samani** and **David Muth, Jr.** received research excellence awards, and **Ravi Kolakaluri** and **Jing Ren** received teaching excellence awards. These awards recognize and encourage outstanding achievement by graduate students in research and teaching. Congratulations to all for your hard work!

## Attinger organizes Micro/Nano Forum at 2012 IMECE

Attinger

The ASME Nanoengineering Council will sponsor a special poster session focusing on micro- and nanotechnology during the ASME International Mechanical Engineering Congress and Exposition (IMECE) this November in Houston, TX. The Council will be accepting poster abstracts for the session — The ASME Society-Wide Micro & Nano Technology Forum — through July 16.

"With more than 200 participants and more than 500 attendees, the forum is one of the largest events of the IMECE conference," said Associate Professor **Daniel Attinger**, forum chair. "It showcases advanced work on micro- and nanotechnologies by the best graduate students of the community."

The Forum was developed to bring together ASME members and others from different disciplines and technical divisions with a focus on micro- and nanotechnology. This year's IMECE will take place from Nov. 9 to 15 at the Hilton Americas and the George R. Brown Convention Center. (More information)

## Mechanical Engineering Graduate Student Organization officers elected

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| Matt Kieffer | President |
| Dustin Dalluge | Vice President, Graduate & Professional Student Senator |
| Kristi Korkowski | Treasurer |
| Kaige Wang | Communications Coordinator |
| Chloe Dedic | Learning Community Coordinator |
| George Zacharakis-Jutz | Social Events Coordinator |
| Nicholas Craeger | Graduate & Professional Student Senator |
| Eric Murphy | Graduate & Professional Student Senator |

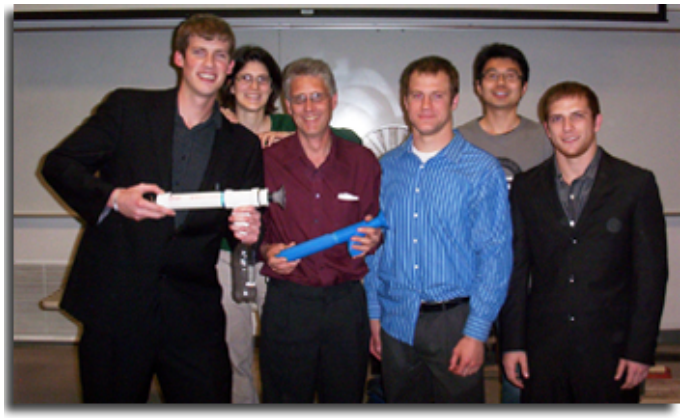
## The Gear Heads win ME 270 design competition

## Iowa State concrete canoe team places 2nd in Midwest competition


Mechanical engineering senior Kevin Welsh (left) and civil engineering sophomore Josh Leyh paddle the race portion of the 2012 Midwest Regional Concrete Canoe Competition April 20-21 in Platteville, Wisc.

A group of 25 engineering students placed second in the 2012 Midwest Regional Concrete Canoe Competition, held April 20-21 in Platteville, Wisconsin. Throughout the year approaching competition, students from the American Society of Civil Engineers student club worked together to design, build, brand, and race a concrete canoe.

Nicknamed The Kraken, their silver medal vessel was judged on a design paper, an oral presentation, the final product and a race on Black Hawk Lake in Cobb, Wisc. They competed with seven other universities in the Midwest with University of Wisconsin-Platteville hosting. The Iowa State team advanced to national competition in 1992, 2002 and 2003. This and last year they fell just short of advancing to nationals. (Full story)



The Gear Heads. From left: Miles Hayes, Assistant Professor Erin MacDonald, Brad Johnson, Benjamin Perna, Teaching Assistant Jingnan Zhao, and Robert Lagano.

Students from ME 270 (Introduction to Mechanical Engineering Design) had been working all semester on design projects to present at the spring 2012 Design Expo, held on April 24 in the Howe Hall atrium. Their assignment was to design something to create sustainable economic activity for a developing country.

The Gear Heads won the design competition with their project "Save the Babies", a low cost breast pump. Members of The Gear Heads include Miles Hayes, Brad Johnson, Benjamin Perna and Robert Lagano. They were led by Assistant Professor **Erin MacDonald** and Teaching Assistant **Jingnan Zhao**.

## Upcoming Events

**May 18** – Seminar: Science and Technology of Modern Permanent Magnet Materials
**May 18** – ISUAA Inspiration Awards
**May 18** – Dance social
**May 23-27** – Odyssey of the Mind World Finals
**May 28** – Memorial Day

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Do you have department news you'd like to share?
Please e-mail news items for InCYde Mechanical Engineering to Alex Rausch.