

# The Ole Miss Engineer

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## Ole Miss Engineer 2009

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# OLE MISS ENGINEER

The University of Mississippi School of Engineering

Vol. 49 No. 2 • Fall 2009

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*Ole Miss Engineer* is published biannually by the School of Engineering. Editor: Emily Welly. Writers: Edwin Smith, Sonia Thompson. Designer: John McCustion.

## New dean to lead school forward

Since Alexander H.D. "Alex" Cheng became the new dean of the School of Engineering, he's acquired a whole lot more than just a bigger office and a bump in salary.

"This position of leadership is very challenging," he said. "Much has been accomplished during the tenure of my predecessor, but there also remains much to be done.

"We must see the current renovations [Carrier Hall, Old Chemistry] and new construction project [Center for Manufacturing Excellence] to their completion. We're committed to increasing student enrollment, greater fundraising and expanding research opportunities for faculty and students."

Cheng, chair and professor of civil engineering, joined the UM faculty in 2001 after serving on the faculty at the University of Delaware, Columbia University and Cornell University. He replaced Kai-Fong Lee, who left the position June 30 but remains on the faculty. Cheng

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Kevin Bain

Dean Alexander Cheng

## New Administrators Named

Dean Alex Cheng has announced the following faculty appointments within the School of Engineering:

John O'Haver is associate dean for academic and student affairs. He is also director of the Center for Mathematics and Science Education.

Atef Elsherbeni is associate dean for research and graduate programs. He is also a professor of electrical engineering.

Tyrus McCarty is assistant dean for special initiatives. He is also a professor of mechanical engineering.

Joel Kuszmaul is chair and professor of geology and geological engineering. He replaces Gregory Eason as chair of the department.

Christopher Mullen is interim chair and professor of civil engineering. He replaces Cheng as chair of the department.


## From the Dean's Office

After serving 8-1/2 years as dean of engineering, Dean Kai-Fong Lee decided to step down and return to the faculty as professor of electrical engineering. I was honored to be appointed the new dean for School of Engineering at The University of Mississippi on July 1, 2009.

During Dean Lee's tenure, the school saw significant growth in research and improvements in facilities. The school's annual research expenditures have increased by 80 percent from eight years ago. About a year from now, we expect to see a similar percentage gain in the amount of space occupied by the School of Engineering. This will be accomplished by the completion of several building projects, including the Old Chemistry renovation, the Carrier Hall expansion and renovation and the new Center for Manufacturing Excellence building.

Despite the progress made, we still have some way to go to make the Ole Miss School of Engineering among the best in the South and the nation. Among the first priorities is working to increase undergraduate student enrollment and to improve retention. In this coming year, we will start two initiatives: one to help underprivileged and underprepared students to achieve success, thus improving retention; and the second to start a number of interdisciplinary programs as emphases in the engineering bachelor's degree program, including pre-med, pre-law, business and management, public policy, education, military science and manufacturing. We will also continue to grow faculty research to bring the school to national prominence.

All of these activities, including the grand vision of building an engineering complex, will require resources. I look forward to working with the faculty, the university administration, the alumni and friends of the Ole Miss School of Engineering to bring these visions into reality.



Alexander Cheng  
July 2009



## Construction continues at School of Engineering

**C**onstruction crews will work throughout the year to complete the School of Engineering complex.

Aramark Food Services recently renovated the basement of Anderson Hall. New additions include faculty and student lounges, an Einstein Bros. Bagels cafe, a patio and restrooms.

Other School of Engineering construction projects include new civil engineering technology laboratories in the

old Wal-Mart building on West Jackson Avenue. The 11,000-square-foot facility will be used for teaching and research.

"Alumni support through the School of Engineering Advisory Board is the major reason why the university administration granted this new facility," said Dean Alex Cheng.

Though slightly behind schedule, funding is still being sought for the renovation of the Old Chemistry Building. Panola Construction of Batesville has

been awarded the \$3.2 million contract for the second phase of the project. Interior work is to be completed within a year.

The Center for Manufacturing Excellence (CME) is also being built between Carrier Hall and the Old Chemistry Building. Construction of the 35,000-square-foot, three-story structure is anticipated next fall.

Finally, construction on the Carrier Hall extension is expected to start soon.

# High-school, middle-school students sling their way to victory

While balls were being thrown April 21 at The University of Mississippi's Vaught-Hemingway Stadium, there were no Ole Miss football players to be seen—only brainy middle- and high-school students from around the state.

The students were visiting campus for the third annual Gravity-Driven Catapult (Trebuchet) Hurling Competition. Trebuchets originated as medieval engines of war that used counterweights to propel projectiles at enemy targets, such as castle walls.

In the UM competition, students used the catapults to hurl fluorescent tennis balls across the field. (Designed by student teams, the catapults consisted of a single arm and were constructed of metal, wood and rope.) Ole Miss engineering students recorded the distance and height of each toss, and engineers from FedEx Corp. strolled the field talking with the students and judging their contraptions.

Registered for the event were 17 teams representing 10 schools: Amory High School, Charleston High School, French Camp Academy, Leflore County School, Monroe County Vocational Center, Northwest Rankin High School, Oxford High School, Saltillo High School, Southaven Middle School



Kevin Bain

Starkville High School sponsor Ty Adair (left) and students Mallory McCain, Morgan Larkins and Kailey Goodman placed first in height and distance and tied for third place in design in last spring's trebuchet competition.

and Starkville High School.

First-, second- and third-place awards were presented in the categories of accuracy, design, distance and height.

"There were some very well-designed trebuchets, and we saw some record performances for the competition," said Joey Parkerson, a senior chemical engineering, computer and information science and mathematics major from French Camp, who volunteered to help with the competition.

Before the day's final competitive event, participants faced off in preliminaries and visited the Ole Miss science, engineering and mathematics depart-

ments for tours and lab demonstrations.

"The catapult competitions in the past were such great successes that we moved outside this year to provide opportunities for students to design and construct even larger catapults," said Maxine Woolsey, educational outreach specialist in the School of Engineering and coordinator of the event. The trebuchets could be up to 7 feet tall in the rest position and could weigh up to 90 pounds.

"Much of the success of the events has been the interaction between the high-school students and the engineering students," Woolsey said. The engineering students facilitated the competition, she added.

In medieval times, trebuchets were more accurate than other catapults, which used tension or torsion to fire projectiles. In modern times, trebuchets have become popular devices for hurling pumpkins, frozen turkeys or even junk cars in light-spirited competitions.

Sponsors for the competition included the UM School of Engineering and the Mississippi Junior Academy of Sciences.

Winning Teams	Height			Distance			Design			Accuracy		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
Amory High School		●										
Charleston High School												●
French Camp Academy						●	●					
Leflore County Schools												●
Monroe County Vocational Center												●
Northwest Rankin High School			●									
Saltillo High School						●			●			
Southaven Middle School			●									●
Starkville High School	●			●					●			



Participants in one of three MathCamp sessions take a break from crunching numbers.

## Math made fun

More than 100 Mississippi elementary school students put on their thinking caps as they participated in one of three MathCamps held at Ole Miss this summer. Sponsored by the Center for Mathematics and Science Education (CMSE), the weeklong events engaged students in hands-on tasks that helped them to understand and learn mathematical concepts. “Students experience math and science as fun and possible,” said John O’Haver, CMSE director. “We hope that they leave camp thinking about these subjects in a different way and have built confidence that they will take with them back to the classroom this fall.”

## On the Fly

### CE seniors help design airport expansion

Civil engineering seniors at The University of Mississippi recently collaborated with Tupelo Airport officials on designs for a major expansion at the north Mississippi terminal.

“It takes multiple perspectives, experiences, expertise and ingenuities to bring about the best, most optimum plan,” Terry Anderson, airport director, said. “Through continued dialogue and collaboration with the instructors and design teams, airport officials were able to draw more beneficial approaches and conclusions to the challenge of the runway extension project.”

Professor Christopher Mullen said his senior design class was excited about the project. Several of the students used Google Earth to check out aerial views of the facility, but then-senior Tony Gole’s enthusiasm literally took him above and beyond the Internet.

“Tony, a licensed pilot, flew a rented



UM civil engineering students helped create this rendering for planned expansions at the Tupelo Municipal Airport as part of their senior project.

airplane from the University Airport to the Tupelo Airport,” Mullen said. Gole, a Covington, La., native, was commissioned in the U.S. Air Force following his graduation in May 2009.

Anderson provided copies of complete documents for student review and use, including the Tupelo Airport master plan and an environmental impact study done by an engineering contractor. He and

consulting engineer Ken Gilbert spoke to the class and later gave a personal guided tour of the site and facilities.

“It was an uplifting experience to work with the professional, collegial University of Mississippi engineering department and to watch the raw enthusiasm of totally competent senior class engineering teams develop a plan,” Anderson said.

## Facts Meet Fiction

### Alum finds success as mystery novelist

Even though Mary Anna Evans (MS '84) entered The University of Mississippi on a general scholarship, initially she was unsure of her major or career goal. Thirty years, two degrees and two career changes later, the chemical engineering alum is a highly successful mystery writer who, with her fifth and latest novel, has found a way to write about engineers.

"*Floodgates* is set in New Orleans and deals with the causes behind the levee failures and subsequent flooding [following Hurricane Katrina]," Evans said. "New Orleans never could have existed all these years without

the engineers who built it and kept it dry. I pay homage to those engineers, and I had a good time doing it."

In the spirit of Angela Lansbury's "Murder, She Wrote" television series, Evans' novels are a series connected by

lead character Faye Longchamp, an archaeologist who frequently helps detectives solve mysterious homicides.

In *Floodgates*, the heroine is present at the discovery of a long-dead drowning victim from Katrina. Her archaeological knowledge tells her that the debris in the room is somehow wrong.

"She is convinced that this is a murder, but the clues have been obscured by the flooding," Evans said. "The detective is convinced by Longchamps' logic and hires her

as a consultant to help her unravel the mystery."

Evans said the scientific education she received at Ole Miss—and the work that education led her to—is ever-present in developing plots that make sense. "I write about an archaeologist, and her field methods have a lot of parallels to my work as an environmental consultant," she said.

She recalled with fondness her professors and experiences as an Ole Miss student.

"The chemical engineering department was very small at that time, and we students were close, having all our classes together and studying at Anderson Hall," Evans said. "In particular I enjoyed my classes under Dr. [Jim] Clemmer, Dr. [Efton] Park, Dr. [William] Genetti, Dr. [Russell] Aven, Dr. [Clint] Williford and Dr. [Ajit] Sadana."

At least one of Evans' former professors said she made a lasting impression on him.

"She always seemed to handle things well," said Williford, chair and pro-

*"I write about an archaeologist, and her field methods have a lot of parallels to my work as an environmental consultant."*

— Mary Anna Evans

fessor of chemical engineering. "Mary Anna's experience is a shining example of how an engineering education can set people on diverse career paths. It's great to hear that a former student has found her own satisfying path—especially one less taken."

Having found her niche as a writer, Evans said chemical engineering continues to provide an educational basis for everything she's done professionally.

"Cause and effect is an important concept, both in science and in life. I really do love my work," she said.





The Kit Jones

## Unsinkable Kit Jones

MMRI boat survives Katrina, other disasters in 70 years on the job

**T**hrough seven decades, severe storms and several owners, the *Kit Jones* and her crew have had numerous nautical adventures. From the coastal waters of the Atlantic Ocean to the choppy waves of the Gulf of Mexico, the wooden-hulled vessel's voyages have ranged from pleasure cruises in her early years to more recent underwater research explorations.

And, while her volume of voyages may be slowly dwindling, the research vessel for the Mississippi Mineral Resources Institute at The University of Mississippi won't be retired from service any time in the foreseeable future.

"She'll be going to the Chandeleur Islands off the coast of Louisiana between September and November," said Andy Gossett, one of the mechanical systems engineers who maintains the vessel's seaworthiness. "The *Kit Jones* has been through a lot, but she's still going strong."

Such praise for the *Kit Jones* is well-deserved. She has served not only the MMRI and UM but also has been employed in research projects by the U.S. Geological Survey, U.S. Navy, National Oceanographic and Atmospheric Administration, Minerals Management Service, industry and various components of Mississippi's state govern-

ment. Those who have served on her crews over the years have marveled at her ability to—both figuratively and literally—go the distance.

The vessel even survived the catastrophic destruction wreaked by Hurricane Katrina in 2005. After the storm left the *Kit Jones* beached, a crew went down to Biloxi to repair her extensive damages.

"They did a fabulous job to revive her," said Carol Lutken, interim MMRI director. "Services were not available, no one had air conditioning, temperatures were 100 degrees-plus, and the mosquitoes were indescribably thick."

The crew hauled the ship out of

the mud, turned her right side up and re-launched her into her home on the Mississippi Sound.

“Without a doubt, it’s a very strong, well-built boat,” said Ladd Schrantz, a retired marine technical specialist with MMRI and port captain for the *Kit Jones*. “Even those 18- to 20-foot

***‘Without a doubt, it’s a very strong, well-built boat. Even those 18- to 20-foot waves couldn’t sink her.’***

— Ladd Schrantz

waves couldn’t sink her. I believe she’ll keep right on sailing as long as there are agencies that need her services.”

“When The University of Mississippi purchased the ship in 1986, it was partially underwater off the coast of Georgia,” said Robin Buchannon, assistant vice chancellor of research and sponsored programs and former MMRI staffer. “Several MMRI employees went to Georgia and worked on her until she was again seaworthy.”

While the *Kit Jones* was still in Georgia, the University of Georgia contracted with MMRI to use her for collecting sediment samples in the near-shore areas off the coasts of Georgia and South Carolina. When that work was complete, winter was rapidly approaching, and it was time to move the ship to her permanent home on the Mississippi Gulf Coast to ready her for the spring field season.

“MMRI staff sailed down the Atlantic coast, through Lake Okeechobee in cen-

tral Florida, to the Gulf of Mexico and around to Point Cadet,” Buchannon said.

Once in Biloxi, the ship was transformed into a more spacious vessel to accommodate the crew and equipment for extended cruises. Improvements included state-of-the-art navigational

equipment, a Cummings diesel engine and a hydraulically operated A-frame for deployment and recovery of research equipment.

Matt Lowe, MMRI mechanical systems engineer, recalls some rough times spent on board the *Kit Jones*.

“We did a core sampling job

around Little Lake on the Mississippi-Louisiana line,” Lowe said. “I remember, while trying to sail back to Biloxi, we had to endure a nine-hour storm in the Mississippi Sound. It was the worst storm I’ve ever been in, but the *Kit Jones* rode it out.”

The longest distance the *Kit Jones* ever sailed was an eight-day trip from Biloxi to Atlantic City, N.J., according to Gossett.

“We had three separate jobs along the East Coast...,” he said. “It was the farthest away from home she’d ever traveled, and she pulled it off without a hitch.”

*The Kit Jones, post-Katrina*



Following Hurricane Katrina, *Kit Jones* crew members Matt Lowe (left), the late James Robert ‘Bob’ Woolsey, Larry Overstreet, Brian Noakes and Andy Gossett marvel at the ship’s restoration.



## Senior wins intelligence grant

**W**ith academic pursuits ranging from electromagnetics to patent law, one impressive electrical engineering major has been nationally recognized for her diverse interests.

Senior Christina Bonnington won a grant of up to \$10,000 from the National Consortium for MAS-



Bonnington

INT (Measurement and Signals Intelligence) Research Scholar Program.

The program is provided by the Defense Intelligence Agency as a means to encourage young researchers to select technical careers within the intelligence community. The grant is to be used for tuition, books and room and board during her senior year.

"I'm so honored to receive this grant," Bonnington said. "I'm excited that I'll have the opportunity to spend my time contributing to our department's research without worrying about financials, and I hope that other students will be inspired to work hard and apply for scholarships and awards that may seem out of reach."

This summer Bonnington worked at UM's National Center for Physical Acoustics and assisted with updating the Applied Computational Electromagnetics Society Web site. Following graduation, she plans to attend law school, specializing in patent law. She is also engaged to fellow electrical engineering major Dan Gailey.



Pam Lawhead, associate professor of computer and information science, provides Alice instruction to Hong Kong school district officials.

## Alice brings its wonderland to Hong Kong

**S**everal years ago, Alice arrived at The University of Mississippi. This summer, the 3-D interactive graphics software program was introduced to staff and faculty in the Learning through Engineering Art and Design (LEAD) division of the Hong Kong Youth Federation.

Joanna Cheung, manager of the HKYF Jockey Club, invited a team of Alice experts—including a UM professor—to do a series of workshops for kindergarten through 12th-grade teachers and Hong Kong University faculty. While there, the team met with the executive director of LEAD to discuss becoming collaborators with them.

"We went there, at their invitation, to encourage the use of Alice in the Hong Kong schools and at LEAD centers," said Pamela Lawhead, associate professor of computer and information science. In addition to Lawhead, the team comprised Wanda Dann, Alice director at Carnegie Mellon University, and Jessica Orquina, Java brand marketing manager from Sun Microsystems.

"The Hong Kong schools are cur-

rently using Scratch software from MIT and were ready to go further with their students," Lawhead said. "The hope was that Alice would encourage creativity in their students."

Lawhead said Alice has been ideal for bright students who did not receive the mathematical background in high school required to major in computer science at the university level.

"Interacting with Alice's animation and sound, students quickly become engaged in creating their own films and games. It's learning in disguise," Lawhead said.

The Alice system was developed by Randy Pausch, professor of computer science at Carnegie Mellon, who became famous for his book *The Last Lecture* before he died in 2008. A textbook, *Learning to Program with Alice* (Pearson Prentice Hall, 2006), was authored by Pausch, Dann and Stephen Cooper, associate professor of mathematics and computer science at Saint Joseph's University.

For more information about the Alice system, visit [www.alice.org](http://www.alice.org).

## Toying Around

### Computer science students program Lego robots to play the piano, draw

One child's toy is a college student's final project.

That's what some University of Mississippi computer science majors found as they completed a robotics class last spring.

During the semester, the students developed software for the Lego Mindstorms NXT robots. Each student created a Hallway Explorer Robot before spring break. At their last seminar, they displayed 10 event-responsive computer programs using the building blocks toys.

"We're teaching a new kind of computing that listens for events to happen," said Yixin Chen, assistant professor of computer science. "We're teaching students to write programs to respond to their environment. These

*'We're teaching students to write programs to respond to their environment... where they can observe the effects of their programming and develop solutions to socially relevant problems.'*

— Yixin Chen

toys allow us to demonstrate to students a one-to-one relationship between their abstractions and the concrete, where they can observe the effects of their programming and develop solutions to socially relevant problems."

The robots, dubbed MyBots, all have names and perform a variety of demonstrations, including operating a forklift, mapping, playing the piano and drawing. One robot even played the Connect Four game against human competitors.

The Lego Mindstorms robots, which were included in kits purchased

at Lego Education for \$280 each, are fully functioning and programmable, offering a low-cost alternative for the classroom. A large research robot can cost as much as \$30,000, Chen said.

"With the financial support of the computer science department, the Adler Endowment and a minigrant from the Center for Excellence in Teaching and Learning, we were able to provide each student a Lego kit and sensors to work with," he said.

"From the beginning, we developed all of our programming based upon the robot used in the very first workshop," said Chris Reichley, a master's student from St. Louis, Mo. "It's been fun and challenging coming up with adaptations for the new model."

Far from a remote-control toy, the Lego robot features light sensors, touch sensors and two motors, allowing it to respond to events and make its own decisions based on programming information input by its operator.

"We were all looking for an original idea," said Robert Decurtins, a junior from Olive Branch.

Another plus, Chen said, is that the toy robots are virtually indestructible.

Lego robots have been used at all levels of college computing classes and beyond.

"My Autonomous Mobile Boolean Emissary Robot [AMBER] could be used one day for surveying areas where it may not be safe or too small for human beings to go," Reichley said.

Videos of UM students demonstrating their MyBots are available at [www.youtube.com/olemisscs](http://www.youtube.com/olemisscs).

Kevin Bain



Clifton Gunn, a computer science major from Corinth, discusses his Forklift MyBot during a recent robotics seminar at The University of Mississippi.

## 2 2009 graduates recognized for outstanding achievements

**R**obert Aune (BSME 09) of Oxford was awarded the Mississippi Engineering Society's Outstanding Senior in Engineering Award for 2009.

In addition to being at the top of his graduating class, Aune has been an integral part of the engineering school community. He served as president of the student chapter of the American Society of Mechanical Engineers, was an undergraduate research assistant and founded the Rebel Rocketry Club. He completed summer internships with NASA and Exxon Mobil Corp. In addition to the outstanding senior award from the Mississippi Engineering Society, Aune was named a 2009 Taylor Medalist and received the John A. Fox Award for Outstanding Mechanical Engineering Student.

Aune and his wife, the former Christin Burns (BSChE 08), live in Houston, Texas, where he is pursuing a master's degree in materials science at the University of Houston. His research is based on fracture in ultra-high temperature



Robert Aune (left) with Professor Arunachalam Rajendran and Al Crawley, president of MES

ceramics. Following graduation, he plans to pursue a career in the materials science field.

Lauren Michelle Haney (BSCE 09) of Sandy Hook received the 2009 David W. Arnold Engineering Award.

As an undergraduate, Haney demonstrated technical skill and leadership not only in her course work but also in her off-campus experiences, including an internship as an engineering graphics consultant for Mudea's Fine Dining in Ellisville and two engineering co-ops as a project engineer and a field engineer with Ergon, Inc., in Jackson. On campus, she served as an Engineering Ambassador, president of the Engineering Student Body and engineering graphics undergraduate teaching assistant. She was a member of Phi Kappa Phi honor society and was the recipient of the Mississippi section of the American Society of Civil Engineers' student scholarship.

Haney's experiences prepared her for her current job as an air compliance engineer with ExxonMobil Development Company in Houston, Texas.



Lauren Haney

## 2009 engineering graduates ready for work world

**A**nother class of engineering students has moved steps closer to working in the field. The School of Engineering awarded 63 bachelor's, seven master's and five PhD's during its May 2009 commencement.

The ceremony was held in Fulton Chapel following the universitywide graduation. Department chairs honored graduates by reading brief biographies as they walked across the stage.

An additional 15 bachelor's, 12 master's and three PhD's were awarded in August 2009.



Photos by Harry Briscoe



# Student engineers honored

The School of Engineering's most outstanding students received recognition last spring. The following engineering honors were awarded at the end of the semester:

## Mississippi Engineering Society

**Outstanding Senior in Engineering Award:**  
Robert Parker Aune of Oxford

**David W. Arnold Engineering Award:**  
Lauren Michelle Haney of Sandy Hook

## 2009 Taylor Medalists:

Robert Parker Aune of Oxford; Anna Kathryn Hailey of Muscle Shoals, Ala.; Christopher Jon Turbeville of Southaven; Casey Nicole Wilson of Pontotoc

## Chemical Engineering

**Outstanding Chemical Engineering Freshman Award:**

Samuel Olusegun Apetuje of Lagos, Nigeria, and Dana Nicole Reinemann of Batesville

**Outstanding Chemical Engineering Sophomore Award:**

Jonathan David Jones of Long Beach

**Outstanding Chemical Engineering Junior Award:**

Anna Kathryn Hailey of Muscle Shoals, Ala., and Casey Nicole Wilson of Pontotoc

**Outstanding Chemical Engineering Senior Award:**

Joey Keith Parkerson of French Camp

**Blake Davis Award in Chemical Engineering:**  
Brittany Jane Henley of Biloxi

**Efton L. Park Jr. Memorial Award for Chemical Engineering:**

Alain Leopold Tchamba of Southaven

**John Boswell Memorial Scholarship:**  
Cody Rials Branch of Foxworth

**Russell Aven Scholarship:**

Whitney Leigh Hauslein of Portland, Texas

## Civil Engineering

**Chi Epsilon Outstanding Senior Award:**  
Lauren Michelle Haney of Sandy Hook

**Deep South Institute of Transportation Engineers (ITE) scholarships:**

Anna Claire Chapman of Ridgeland and Katherine Keller Osborne of Lexington, Ken.

**Southern Section of the Air and Waste Management Association (A&WMA) scholarship:**

Shannon Elaine Wilson of Fairfax Station, Va.

## Computer and Information Science

**Outstanding Computer and Information Science Freshman Award:**

Rachelyn Goodwiller Farrell of Oxford

**Outstanding Computer and Information Science Junior Award:** Daniel Christian Read of Byhalia

**Outstanding Computer and Information Science Senior Award:**

Donald Brent Sharrow of Gulfport

**Richard E. Grove Award:**

Meghan Kathleen Oswalt of Oxford

**2009 SAP Scholarship Awards:**

James Vincent Fermo of Clarksdale; Daniel Christian Read of Byhalia; Xiaofei Nan of Zhengzhou, China; Rachelyn Goodwiller Farrell of Oxford

**Graduate Achievement Award:**

Baoqiang Yan of Qi Xian Hebei, China

## Electrical Engineering

**Eta Kappa Nu Outstanding Electrical Engineering Student Award:**

Damilola Sadiq Owodunni of Lagos, Nigeria

**Eta Kappa Nu Outstanding Electrical Engineering Sophomore Award:**

Melissa Daniella Bond of Corinth

**Eta Kappa Nu Outstanding Electrical Engineering Junior Award:**

Jesse Stewart Pinion of Oxford

**Graduate Achievement Award:**

Laila Kanaan Hady Salman of Giza, Egypt

## Geology and Geological Engineering

**Outstanding Geology and Geological Engineering Freshman:**

Scott Edward Peacock of Madison

**Outstanding Geology and Geological Engineering Sophomore:**

Christopher Murray of Hernando

**Outstanding Geology and Geological Engineering Junior:**

Benjamin Mark Benedetto of Metairie, La., and Melanie Graupner of Waldkraiburg, Germany

**Outstanding Geology and Geological Engineering Senior:**

Steven Thomas Fox of Dothan, Ala.

**Outstanding Graduate Student:**

Bryan Jared Gunter of Nebo, N.C., and Patrick Williams Niemeyer of Lumberton

**Boland Scholarship**

(Mississippi Geological Society):

Mallory Kay Crandall of Shreveport, La.

**Shreveport Geological Society Scholarship**

Fund of the Community Foundation of Shreveport:

Melanie Graupner of Waldkraiburg, Germany

## Mechanical Engineering

**John A. Fox Award**

**for Outstanding**

**Mechanical**

**Engineering**

**Student:**

Robert Parker

Aune of Oxford

**Outstanding**

**ASME**

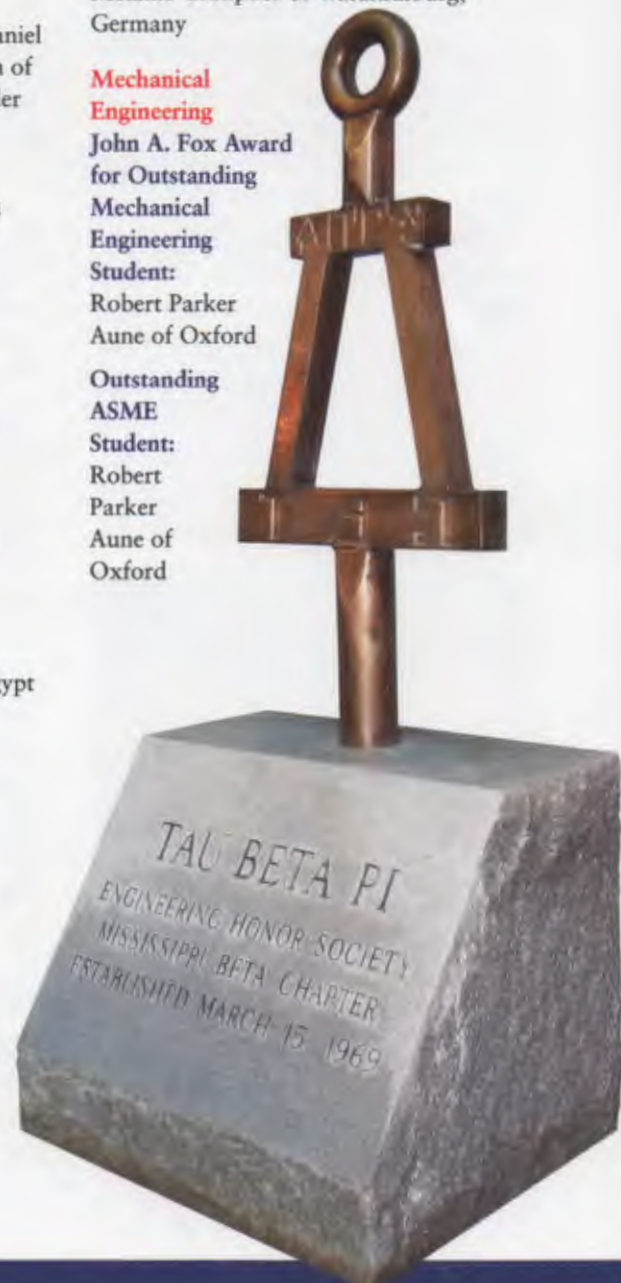
**Student:**

Robert

Parker

Aune of

Oxford



## First Woolsey scholarship recipient introduced at MMRI meeting

**M**elanie Graupner, an international student from Germany, is the first recipient of a memorial scholarship paying tribute to J. Robert "Bob" Woolsey, the late director of the Mississippi Mineral Resources Institute (MMRI) at UM.

Graupner, who was recognized Aug. 18 during an MMRI board meeting on the Oxford campus, plans to use the scholarship to attend geology field camp in South Dakota next year.

"I feel extremely honored that I was selected for this award named for such a great geologist," said Graupner, an Ole Miss junior who plans to pursue graduate studies after earning a bachelor's degree in geology. "My ultimate goal is a career with a U.S. company that allows me to work out in the field."

A renowned geologist and expert in undersea mineral resources, Woolsey died in a July 2008 car accident. Memorials in his name amounting to more than \$11,000 were made to The University of Mississippi Foundation, and Maxine Woolsey, his widow, has committed additional resources to fund the Woolsey Scholarship Endowment for Geology and Geological Engineering.

Woolsey said Graupner's plans fit the intent of the scholarship award.

"To appropriately honor Bob, this scholarship should help students become hands-on geologists and geological engineers," she said. "Bob always felt the best classrooms didn't have walls. I want scholarship recipients to use the funds to have extraordinary experiences."

Bob Woolsey's work in the scientific community garnered attention for the university, but Maxine Woolsey said her husband, in return, was grateful to the university for allowing him to take students on his travels to further enhance their training and education. Among their research projects were



Melanie Graupner (fourth from left) is the inaugural recipient of the Dr. James Robert Woolsey Scholarship for Geology and Geological Engineering. In attendance at the presentation of the award were (from left) Carol Lutken, interim director of MMRI; Bob Woolsey's daughter Emily Woolsey; his widow, Maxine Woolsey; Charles Swann, MMRI staff geologist; Terry Panborst, assistant professor of geological engineering; Woolsey's son Joe Woolsey; and Alex Cheng, dean of the School of Engineering.

efforts to develop better underwater drills and search for mineral resources on the ocean floor, identifying sand deposits and oil and gas reserves.

"The idea for the scholarship formed right away because MMRI and the students were Bob's second family," said Maxine Woolsey. "He cared about everyone, and students thought of him as Dad. Bob was an educator and a doer, constantly learning and sharing amazing experiences with students and colleagues. His advice to students was to choose careers that would give them the opportunity to do something they truly enjoyed. He obviously loved what he did; I don't think he ever would have completely retired."

Bob Woolsey, who was named director of MMRI in 1982, was instrumental in founding UM's two marine centers: the Center for Marine Resources and Environmental Technology, and the Seabed Technology Research Center, which is a division of the National Oceanic Atmospheric Administration's National Institute for Undersea

Science and Research. Through these centers, he organized an international consortium of scientists and engineers to study gas hydrates. Woolsey led the consortium's efforts to establish a gas hydrates monitoring station/seafloor observatory in the Gulf of Mexico.

The goal of the monitoring station—a multidisciplinary project that includes 17 academic institutions, six government agencies and several industrial participants—is to investigate the role of gas hydrates in seafloor stability (and instability), as a major potential energy resource and as a source/repository of greenhouse gases and therefore a determinant of global climate. More recently, Woolsey helped guide efforts to produce biodiesel from cooking oil and other plant sources to power MMRI's equipment and vehicles, as well as UM's grounds maintenance equipment.

To contribute to the Woolsey scholarship, please mail a gift to The University of Mississippi Foundation, Woolsey Endowment, P.O. Box 249, University, MS 38677-0249.

## UM electrical engineer wins teaching award



Fan Yang (right) was nominated for an award for excellence in teaching by Atef Elsherbeni.

Fan Yang, associate professor of electrical engineering, is the first recipient of the Donald G. Dudley Jr. Undergraduate Teaching Award.

The award, presented annually by the IEEE Antenna and Propagation Society, recognizes outstanding and original contributions to undergraduate education by an individual in his career. Yang was selected for his extraordinary effort to excite and engage students in electromagnetics through his enthusiasm, excellent teaching and active research advising.

Yang received the award during the 2009 IEEE International Symposium on Antennas and Propagation and the USNC/URSI National Radio Science Meeting in June.

"I feel very humble to receive this prestigious award," Yang said. "The Dudley teaching award is a great encouragement to me to continue my academic career in electromagnetics."

Yang also gave his thanks to fellow electrical engineering professor Atef Elsherbeni, who nominated him for the award, department chair Allen Glisson and former Dean Kai-Fong Lee.

"Based upon my personal experience and knowledge of his contributions, I knew Professor Yang would be an excellent choice," Glisson said.

"I knew he was an active researcher in electromagnetics and antennas," Lee said. "Since he joined our faculty in 2004, I realized that Professor Yang is an excellent teacher as well."

## 'Crowning Achievement'

### Former dean receives award for innovation

A career founded in research was rewarded when Kai-Fong Lee, professor of electrical engineering, received the prestigious John Kraus Antenna Award in June.

The award, presented annually by the Institute of Electrical and Electronics Engineers' Antennas and Propagation Society, recognizes an individual or team that has made exceptional contributions to the field of antennas through innovation. Lee was selected for his invention of the wideband U-slot patch antenna and for expanding the U-slot technique to small size, dual/triple band and circular polarization applications.

"The John Kraus Award recognizes exceptional contributions to the antenna field through innovation," Lee said. "I regard this recognition as the crowning achievement of my research on antennas, and it is a dream come true."

As a graduate student in the 1960s,

Lee said he was fascinated by John Kraus' book *Antennas*. Students and professionals alike regarded the book as the "antenna bible," he said. Lee said he was equally interested in the many novel antennas invented by Kraus, including the helical antenna, which was the workhorse for space communication applications.

Lee worked on plasma waves and instabilities from 1965-80. Since 1981, his research interest has focused on antennas. His publications include the textbook *Principles of Antenna Theory* and the edited book *Advances in Microstrip and Printed Antennas*. He is a fellow of IEEE and a fellow of IEE.

"This award confirms Dean Lee's brilliant research record and is a reflection of how his colleagues perceive his innovative approach to an important area of research," UM Provost Morris Stocks said, "[His] continued dedication to his own research agenda is reflected in the

research productivity of the faculty of the School of Engineering."

Lee served as dean from 2001 until his retirement in June; he continues on the faculty as a professor.



Kai-Fong Lee (left) receives an award for antenna research

## Army Corps of Engineers puts interns through their paces

**N**ine civil, mechanical and geological engineering students got hands-on professional experience as interns at the U.S. Army Corps of Engineers' Engineer Research and Development Center (ERDC) this summer.

Members of the group spent two months in Vicksburg interacting with engineers who are experts in their respective research fields. Participants, who ranged from finishing freshmen to rising seniors, were held to the most rigorous of standards and succeeded in completing their assigned responsibilities.

"This was the first time in recent years that Ole Miss has had such a large number of students in the ERDC internship program at one time," said Marni Kendrick, assistant to the dean

of the School of Engineering. "The students' Corps of Engineers supervisors said that they were thoroughly impressed with each intern."

Kendricks said the officials also expressed an interest in maintaining and even increasing the number of Ole Miss engineering students in their co-operative education program.

"There is a severe shortage of qualified engineers in the country, which is why the Corps of Engineers is recruiting students earlier each year," Kendrick said. "They're seeking to fill 200 positions in the next two years at ERDC."

Arunachalam Rajendran, chair of the Department of Mechanical Engineering, was instrumental in

reviving and invigorating the Ole Miss-ERDC relationship. A former chief scientist with the U.S. Army Research Office, Rajendran's influence enhanced and strengthened the connection, Kendrick added.



Civil engineering students Nick Farney (left), Anna Claire Chapman and Jared Case interned with the Army Corps of Engineers this summer.

## Senior projects impress

Last spring, senior mechanical engineering majors worked with a variety of engineering experts to complete design projects before their 2009 graduation. Their projects included



### Wind Turbine ▲

David Rich (pictured) of Madison and Lucan Ainsworth of Meridian worked with Perry, LLC, of Oxford.

### Mars Robo ▶

Daniel Davis (left) of Oxford and Stuart Cockrell of Baldwin worked with the American Society of Mechanical Engineers.



### Tre-Moto Monstrosity ▲

Eddie Smith (left) of Starkville and Robbie McIver of Columbia, Tenn., worked with Power Sports Gallery of Columbus.

## New development director ready to excel

Joshua Waggoner recently joined The University of Mississippi as director of development for the School of Engineering. In this role, Waggoner will seek private financial support for the school, which last year launched a capital campaign to increase enrollment and faculty through funding initiatives and to create a new engineering complex on the Oxford campus.

“The progress being made within the School of Engineering is amazing, and I’m looking forward to talking with alumni about that progress and working with them to ensure our students and faculty have the resources necessary to succeed,” Waggoner said.

Waggoner comes to UM with eight years of development experience, having successfully garnered major gifts for Tulane University’s medical school, St.



Joshua Waggoner

Jude’s Children’s Research Hospital, Savannah College of Art and Design and a private educational foundation in Indianapolis. Waggoner has also worked in the corporate world, with Sanofi Aven-

tis Pharmaceuticals and AFLAC.

“A great deal of opportunity exists for our alumni and friends to assist us as we complete construction on a world-class engineering facility and open the new Center for Manufacturing Excellence, and we’re happy to have someone of Joshua’s background engaged in these efforts,” said Alex Cheng, dean of the School of Engineering.

Debbie Vaughn, UM’s assistant vice chancellor for development, agreed: “We are thrilled to count Joshua as part of our development team, and we know he will excel.”

A native of Salem, Ill., Waggoner earned a bachelor’s degree in advertising and marketing from Murray State University in 1997 and an MBA from the University of New Orleans in 2005. He can be reached at waggoner@olemiss.edu or 662-915-1601.

*New Dean, continued from Page 1*

assumed his new duties July 1.

“We are very pleased that Dr. Cheng has agreed to serve as dean of the School of Engineering,” said Morris Stocks, provost and vice chancellor for academic affairs. “He is an accomplished and highly regarded scholar, an effective teacher and a proven administrator. Dr. Cheng has a strong and well-articulated vision for the school.”

Cheng said he is “very pleased, excited and honored” to be named to lead the engineering school.

Cheng says engineering alumni have contributed significantly to the school’s ongoing success. “Alumni support has been critical to every area of the School of Engineering. I am looking forward to continuing to work with them, as well as our new development officer, toward the school’s future growth.”

Cheng’s achievements at UM include the 2004 School of Engineering Faculty Service Award and the 2007 Outstanding Engineering Faculty of the Year Award. Previous honors include the Walter L. Huber Civil Engineering Research Prize from the American Society of Civil Engineers, the Basic Research Award by the U.S. National Committee for Rock Mechanics and the Eminent Scientist Award from Wessex Institute of Technology.

A registered professional hydrogeologist, Cheng founded two international conference series: the International Conference on Saltwater Intrusion and Coastal Aquifers and the Biot Conference on Poromechanics. He is vice president of the Engineering Mechanics Institute of ASCE, and he formerly served as vice president of academic affairs of the American Institute of Hydrology.

Cheng holds a doctorate from Cor-

nell University, a master’s degree from the University of Missouri-Columbia and a bachelor’s degree from National Taiwan University. His primary research interests are water resources, boundary element methods, mechanics of porous materials and nanomechanics. He is the principal investigator and co-principal investigator of several million-dollar research grants on nanocomposites, infrastructure protection and levee protection.

He has written two books and published more than 100 refereed journal papers. He has edited more than a dozen books and more than a dozen journal special issues. He is listed in *Who’s Who in the World*, *Who’s Who in America*, *Who’s Who in Science and Engineering* and *American Men and Women of Science*.

A native of Taiwan, Cheng and his wife, Daisy, have two daughters, Jacqueline and Julia.