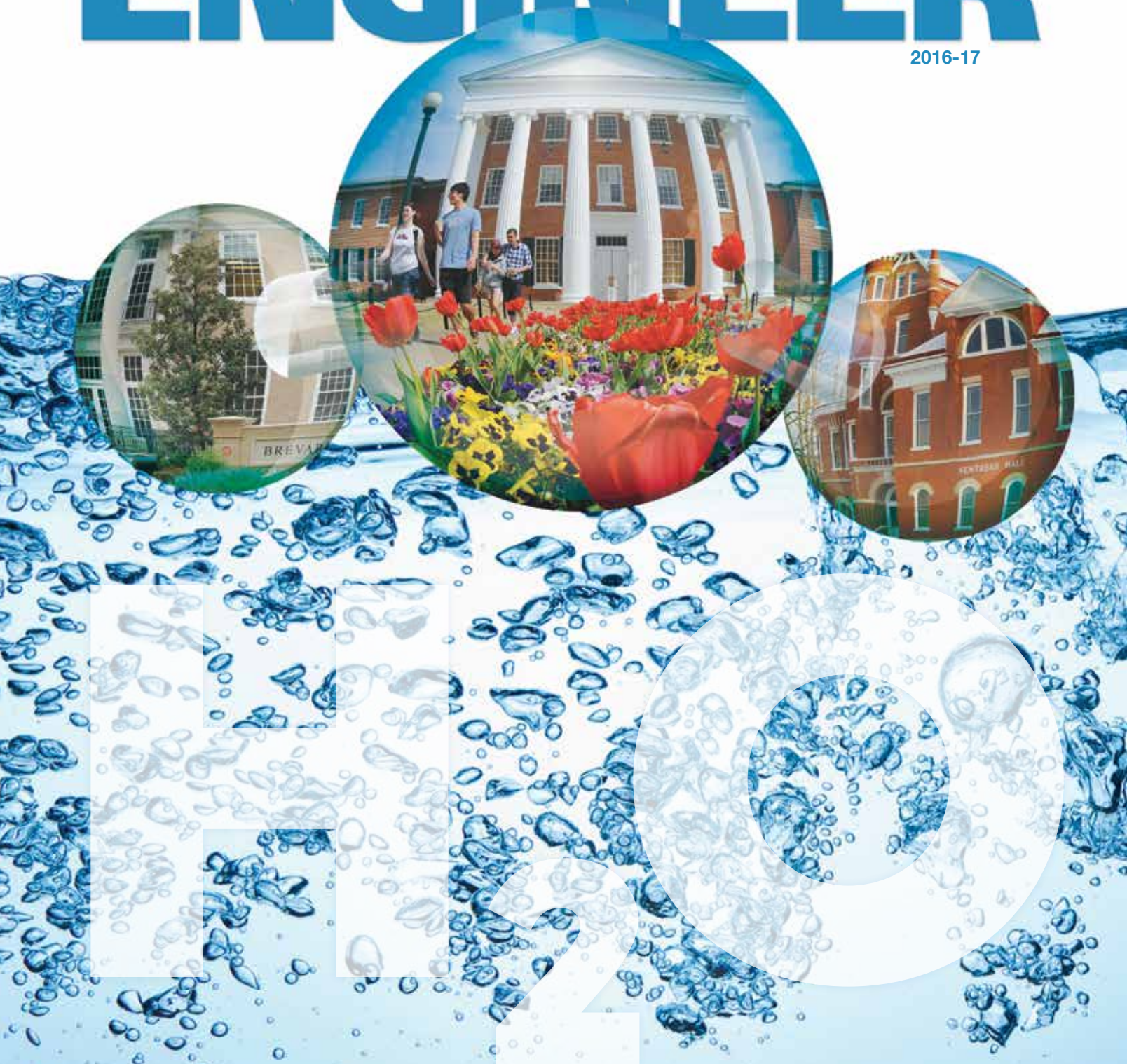


OLE MISS ENGINEER

2016-17



Engineering and Liberal Arts

BONDING IN THE CIRCLE SINCE 1900

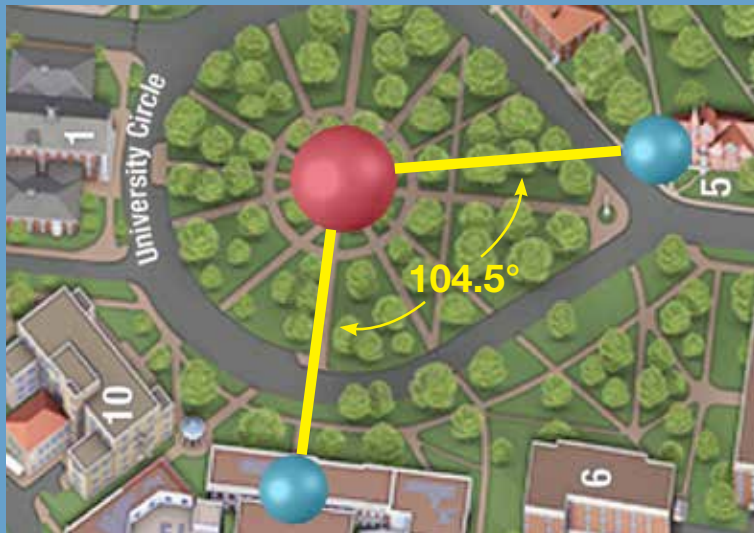
BEHIND THE COVER

Have you ever experienced a good, clear, clean, cold drink of water when you were really thirsty? Nothing quenches quite like it.

Have you ever seen the catastrophic effects of floodwaters or a levee/dam breach? Incredibly powerful!

Hydrogen + Hydrogen + Oxygen are very simple elements creating a substance essential for life. Water covers over three-fourths of the surface of this extraordinary planet we call home. And philosopher, artist, architect, musician, scientist, mathematician, engineer, inventor, geologist, botanist and writer Leonardo da Vinci is quoted as saying, "Water is the driving force of all nature."

So, why am I talking about water? Well, water is the perfect pictorial metaphor for liberal arts and engineering!



We at the engineering school believe that education through liberal arts (represented by Ventress Hall) and technical study in engineering (represented by Brevard Hall) at the University of Mississippi TOGETHER create something of indescribable worth to the graduate. We've been bonding together on the Ole Miss Circle since 1900. In fact, measured from the flagpole in the center of the Circle, we're even positioned apart at the same angle as a water molecule ... for those of you who have an imagination!

Dean Cheng had the opportunity to visit some alumni at ExxonMobil's Houston campus recently, and his description of the beautiful hanging sculptures of cyclohexane molecules (C_6H_{12} or hydrocarbon) gave me the idea to graphically depict liberal arts and engineering.

The Accreditation Board for Engineering and Technology's, or ABET's, definition of engineering confirms all the more the academic partnership liberal arts and engineering enjoy on the Circle: **"The profession in which a knowledge of the mathematical and natural sciences gained by study, experience and practice is applied with judgment to develop ways to utilize, economically, the materials and forces of nature for the benefit of mankind."**

I hope you find this year's magazine an interesting read. The feature article details the benefits engineering students enjoy from a liberal arts-infused education. How refreshing and satisfying to have the opportunity to tell our story from cover to cover.

Enjoy!

Marni

Marni Kendricks

PUBLISHER

Alex Cheng

Dean of Engineering

EDITOR-IN-CHIEF

Marni Kendricks

*Assistant Dean for
Undergraduate Academics
School of Engineering*

ASSISTANT EDITOR

Hank Ducey

*Administrative Coordinator
School of Engineering*

ART DIRECTOR

Stefanie Goodwiller

*Manager of Design Services
University Communications*

COPY EDITOR

Benita Whitehorn

*Assistant Director
University Communications*

DEPARTMENT CHAIRS

Gregg Davidson, Ph.D.

Geology and Geological Engineering

Yacoub Najjar, Ph.D.

Civil Engineering

John O'Haver, Ph.D.

Chemical Engineering

"Raj" Rajendran, Ph.D.

Mechanical Engineering

"Vish" Viswanathan, Ph.D.

Electrical Engineering

Dawn Wilkins, Ph.D.

Computer Science

CONTRIBUTORS

Mustafa Altinakar

Jason Ball

Lee Cohen

Bill Dabney

Hank Ducey

Chinelo Ibekwe

Yafei Jia

Annie McClellan

Michael Newsom

Holly Reynolds

Edwin Smith

Devin Thomas

Waheed Uddin



Photo by Robert Jordan, University Communications

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ALEXANDER CHENG
Dean of Engineering

Dear Alumni and Friends,

We are pleased to bring you another issue of *Ole Miss Engineer*, a newsletter started in 1961 by former student Wells Nutt. In recent years, we have published our news in a magazine format. In each issue, we present a special theme, and this issue highlights the school's mission of a liberal arts-anchored professional education.

The core of a liberal arts education is critical thinking, effective communication, creativity and social engagement. We anchor our engineering education on this core so that graduates become leaders who serve humanity.

Founded in 1848, the University of Mississippi has been a great public liberal arts university. Although the university has a liberal arts origin, engineering education existed since the very first day. One of the original four faculty members was John Millington, professor of natural sciences. Prior to joining the university, Millington was credited as the first professor to teach civil engineering as a university subject in England, at the University College London in 1827.

He also published the world's first handbook of civil engineering in 1839, *Elements of Civil Engineering*, with the subtitle "Being an Attempt to Consolidate the Principles of the Various Operations of the Civil Engineer into One Point of View for the Use of Students, and Those Who May Be about to Embark in the Profession." The scientific instruments Millington brought to the university are still on display in the University of Mississippi Museum.

The university's next connection with engineering came with the appointment of Frederick A.P. Barnard as professor of mathematics, astronomy and civil engineering in 1854. Barnard became the university's chancellor in 1856. After the Civil War, he returned to the North and became the 10th president of Columbia University. He served for 25 years and was credited with raising Columbia's scholarly reputation. During his tenure, Columbia started the Henry Krumb School of Mines, the forerunner of its School of Engineering.

UM's School of Engineering was founded in 1900 as the second professional school at the university and the first engineering school in the state of Mississippi. The first engineering dean was Alfred Hume. Hume earned Bachelor of Civil Engineering and Doctor of Science degrees, and later served as chancellor of the university.

Why is a liberal arts education important for the engineers of today and the future? A major reason is that the world is changing. Well, the world has always been changing, but it is changing at an ever-increasing speed!

Look around us for technologies and tools that were not yet well developed or did not exist a decade ago: internet and wireless communication that serves information anytime and anywhere; nanotechnology in materials, engineering and medicine; gene editing; big data; artificial intelligence; virtual and augmented reality; 3-D printing. The technical education delivered at the university cannot keep up with these developments. We rely on our graduates to have analytical minds, a commitment to lifelong learning, sound judgment, creativity and innovation, global outlook, entrepreneurship, and a societal and humanistic view to be real and relevant engineers who serve society and humanity.



**SCHOOL OF
ENGINEERING**

UNIVERSITY OF MISSISSIPPI | 1900

227 Brevard Hall
P.O. Box 1848
University, MS 38677
662-915-7407
engineer@olemiss.edu
engineering.olemiss.edu

The school's educational mission states that it "prepares students with a broad-based education ... develops leadership skills, communication and creative-thinking skills, global perspective and commitment to lifelong learning ..." We accomplish such a mission by using the educational opportunities throughout the university.

One such opportunity is the Sally McDonnell Barksdale Honors College. Nearly 200 engineering students are enrolled in the Honors College that "prepares citizen scholars who are fired by the life of the mind, committed to the public good and driven to find solutions."

Other programs that engineering students participate in include study abroad, undergraduate research, the Chinese Language Flagship Program, Center for Manufacturing Excellence, Croft Institute for International Studies, Lott Leadership Institute, and other majors and minors such as art, business and mathematics.

Some of these ambitious students have become Goldwater, Fulbright and Gates Cambridge scholars, Tau Beta Pi Laureate and Army ROTC Cadet of the Year. Engineering students are also active in the university's organizations and communities. A couple of them were voted senior class president and Miss Ole Miss. They are also dedicated to service. Particularly, the engineering school has a highly successful Engineers Without Borders chapter that conducts service projects in Togo, Africa.

The school's liberal arts college environment with close mentoring and its emphasis on a well-rounded education seem to appeal to the young generation of aspiring students. In an eight-year stretch, undergraduate enrollment in engineering has increased from 651 in 2008 to 1,565 in 2016. In the same period, the freshman average ACT score has risen from 24.0 to 27.3.

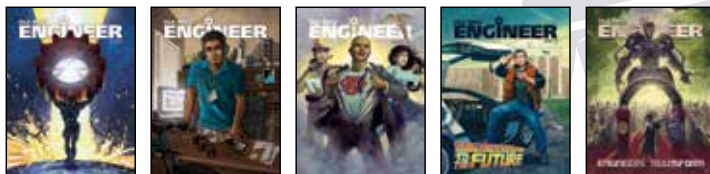
To continue this development, the school has started a new degree program in biomedical engineering with the first class of freshmen to arrive in fall 2017. To better prepare students for the challenging academic programs, we raised admission requirements for regular admissions and started a pre-engineering program to assist underprepared students for a smooth transition into the degree programs. The first such class will also arrive in fall 2017.

I am pleased to share with you the exciting news of the school. I also look forward to reporting to you further developments a year from now.

Sincerely,



Alex Cheng



Miss an issue?

Visit engineering.olemiss.edu/news/olemiss_engineer to view past magazines.

We Appreciate You!

Many thanks go to all of you who participated in the School of Engineering's tailgates during football season. Sponsored by the Woods Society, the events are possible because of the work of Dr. Greg Easson, his staff, and students representing various service and leadership societies. We value the incredible opportunity the tailgates on the Circle offer for engineering students to interact with you. Engagement with alumni and friends makes such a lasting impact!

Please return soon, and encourage your classmates and colleagues to do the same. As you make plans to spend time on campus, alert me. The engineering school welcomes alumni and friends to drop in on classes and meet students. Also, we have student societies that meet throughout the week and would benefit greatly from your expertise. Many opportunities are available for you to invest in our program, from taking time to encourage and mentor students and setting up internships to hiring our graduates, providing service to the dean and sharing financial resources.

To those of you who are graduating in 2017 or graduated in the last 10 years, Dean Cheng has created a new, special program for you. **CIRCLE 1900** (the year our engineering school was founded) offers club membership for our recent graduates who pledge as little as \$19 per month. These donations in mass will help fortify your department for sustained growth and a continued commitment to excellence over the next decade. We hope you will join CIRCLE 1900 and help improve the experience at Ole Miss for the next generation of change agents.

We are extremely grateful that so many of you do make private gifts to our program. We cannot continue the progress we enjoy without you! No matter how you direct your gift now or in the future with planned giving, all types and sizes of gifts are needed and appreciated. If I may assist in your goals or plans to support the School of Engineering, please contact me at kevin@olemiss.edu or call me at 662-915-7601.

Thank you for partnering with us.

See you on the Circle,



KEVIN GARDNER
Development Officer
for the School of Engineering



Photo by Robert Jordan, University Communications

More for the Major

WHAT IT MEANS TO HAVE A LIBERAL ARTS EDUCATION

By Holly Reynolds

The University of Mississippi is our state's flagship liberal arts university, the leading public university with liberal arts education at its core.

From the origins of Western civilization in the ancient world comes the concept of a liberal arts education. The term comes from the Greek word *eleutheros* and the Latin word *liberalis*, both meaning "free" or "worthy of a free person." To fully participate in Athenian democracy, free (male) Athenian citizens needed certain skills in critical thinking and communication developed through a broad education in seven disciplines: the *trivium*, or verbal arts, consisting of grammar, logic and rhetoric; the *quadrivium*, or numerical arts, consisting of arithmetic, astronomy, music and geometry. Such an education celebrated and nurtured human freedom and early democracy.

This classical education was used for centuries in Western culture and was the basis of the first curriculum at UM. However, Chancellor F.A.P. Barnard (1856-1861) led a dramatic shift by emphasizing an enriching student life outside the classroom, and promoting "universitas scientiarum," a plan for a more comprehensive university. Through all these curriculum changes and the addition of pre-professional schools, the liberal arts core remains. The essence of the College of Liberal

Arts has remained intact with the discipline groupings of arts, humanities, natural and social sciences that provide the foundation for all degrees on campus.

"The most important aspect of a liberal arts education is that it challenges our students to think about a great many things while considering many different perspectives," said Lee Cohen, dean of the College of Liberal Arts. "I believe this encourages our students to be creative, critical thinkers, who are empathic and have strong communication skills. These skills are highly transferrable in industry and essential to our society – which becomes more and more complex each year.

"At the University of Mississippi, all students, regardless of the college or school that houses their major area of study, must complete our general education requirements, which are strongly rooted in the liberal arts. Hence, liberal arts is at the core of all of our students' educational experience, and we are proud to play a role in the training of our engineering students."

In keeping with Chancellor Barnard's vision, the students in the School of Engineering have the opportunity for a well-rounded education that happens both inside and outside the traditional classroom. This edition of *Ole Miss Engineer* provides a variety of wonderful examples of students making the most of their collegiate experience. ✨

School of Engineering announces new advisory board members

By Hank Ducey

Advisory board members provide a powerhouse of guidance to the University of Mississippi's School of Engineering. With professionals from industry, government, academia and business, these volunteers could easily be called "overqualified."

Forget the biannual meetings and corporate chicken dinners both fall and spring. These dedicated individuals pay their own way and give up vacation and personal time to share their insights with the burgeoning School of Engineering. Attending standing committees and stakeholder work sessions, meeting with administrators, and dealing with the ever-present constraints of the budget: how much fun can that be?

Evidently, it's a riot. With the school's growth and recognition in the professional world and in the classroom, these dynamic leaders have a chance to make a difference in the university and the state.

Dean Alex Cheng has a habit of finding great people and letting them do what they do best. Simple really, but it's not the pattern of

top-down leadership in many organizations. It's more like having a team of great quarterbacks and no linemen — they all are good at throwing the ball down the field to get to the end zone.

And quarterbacks they are, every board member a leader, ready to formulate a plan and execute a maneuver. However, these engineers also have the ability to listen. They all want to encourage graduates to see the world as a place to live, not just a place to work. They have staunchly insisted that graduates be given a premium-quality, well-rounded education with opportunities for meaningful careers.

Board members have breakfast and lunch with students who are preparing to go out into the workplace. They speak to the leadership class to share lessons they've learned along the way. Some members tap students for prized co-op or internship opportunities. Their efforts have resulted in 140 percent growth in the school in the last nine years. These engineers are the men and women who give back again and again. We are so proud to call them family!

David Aune (BSEE 77)
Dallas Baker (BSME 93, MS 97)
Bryan Beyer (BSChE 80)
Dawn Blackledge (BSGE 82)
Darrell Brown (BSCS 83)
Richard Carroll (BSME 89)
Gray Carter
Mike Channel (MS 85)
John Cleveland (BSCE 88)
Maureen Corcoran (BSGE 06)
Tamara Crawford (BSME 02)
Curt Curtis
Troy Drewry
Bill Dykeman (BSEE 86)
David Dykes (BSChE 86)
Noel Ellis
Jim Greenlee (BE 74, JD 81)
Albert Hilliard (BSCS 83)
John Mark Holliday (BSChE 83)
Hunter Howell (BSChE 07)
Mike Jurgensen (BSME 74)
Christy Lea (BSChE 97)
Karen Matthews (BSCS 85)
Todd May
Markeeva Morgan (BSEE 01)
Shaquinta Morgan (BE 03)
Jimmy Palmer (JD 02)
Bill Parsons (BE 79)
Chris Patterson (BSME 02)
Butch Porter (BSCE 71)
Lucy Priddy (BSCE 02)
Bob Reed (BSCE 81)
Vince Rodriguez (BSEE 94)
Gary Sisco (BSCE 67)
Steve Smith (BSEE 93)
Craig Sparks
Gregg Tobin (BSEE 91)
Lisa Wadlington (BSChE 87)
Henry Walker (BSEE 76)
Howard White (BSME 83)
Derrek Wilson (BSChE 99)





“

Today’s student-engineers not only need to acquire the skills of their predecessors but many more, and in broader areas. As the world becomes more complex, engineers must appreciate more than ever the human dimensions of technology, have a grasp of the panoply of global issues, be sensitive to cultural diversity, and know how to communicate effectively.

”

FROM THE ARTICLE “A MAKEOVER FOR ENGINEERING EDUCATION”
BY WILLIAM A. WULF AND GEORGE M.C. FISHER FOR THE JOURNAL *ISSUES IN SCIENCE AND TECHNOLOGY*



Tara Shumate (BSCE 15) (left) and Vera Gardner take a break to sit with some children of Hedome Village during an Engineers Without Borders school construction project.

Photo by Nancy Dupont

Elements of Success

ENGINEERING & LIBERAL ARTS AT OLE MISS PREPARE GRADUATES FOR LIFE

By Bill Dabney

Students who consider pursuing engineering degrees may imagine college careers limited to time spent sequestered in classrooms, study sessions, laboratories and libraries when, in fact, engineering education at the University of Mississippi offers literally a world of opportunities — often in the open air.

Take the nationally acclaimed Engineers Without Borders (EWB) program, for example, which is by far the antithesis of a cloistered classroom experience. For the past five years, students in the Ole Miss chapter of EWB have helped the people of a few villages in the West African nation of Togo build a sound infrastructure and plan a deep-water well installation.

This is hands-on, practical work in the field, and **Vera Gardner** of Memphis, Tennessee, feels fortunate to have had the experience. Gardner — a senior who is double majoring in mechanical engineering and general studies with emphases in Portuguese, linguistics and math — traveled to Togo her freshman year to help construct a school in the village of Hedome. She returned to

Africa her junior year to help determine where a well could be drilled to provide fresh water to the community.

“In Togo, I learned how to build trusses. This was my first taste of anything technical, and I was able to learn statics firsthand, even before I took the class the following semester,” Gardner said. “I gained confidence from working alongside seasoned seniors and learning more about the culture in Togo.”

Gardner was also named an Innovation Scholar through the university’s McLean Institute for Public Service and Community Engagement. As such, she had the opportunity to join the Catalyzing Entrepreneurship and Economic Development, or CEED, initiative, in which students and faculty build partnerships with primarily low-income communities in Mississippi.

“As a CEED scholar, I have been able to grasp more fully how others live in Mississippi — primarily in the state’s impoverished Delta region — through classes, literature, field trips and a summer internship in 2016,” she said. “The awareness I gained from this experience, as well as Engineers Without Borders, is that the world does not



Bill Dykeman (center) converses with U.S. Sen. Thad Cochran (left) and Army personnel during testing of the Army's first production Sentinel radar in 1998.

revolve around me. ... I see that others are in need and, as a person who has been blessed, I should learn how to use my skills to help others. Combining my knowledge and resources with the desires of a community are important in making a difference."

Gardner is involved at Ole Miss and locally in many other ways. Most engineering students are. That's the beauty of pursuing a technical degree at a university that also boasts a strong liberal arts environment and in a town that welcomes students as vital contributors to community life.

"We're not just a technical school; we are the 'Ole Miss' School of Engineering, and we produce an excellent product: a technical engineer who speaks liberal arts," said Marni Kendricks, assistant dean for undergraduate academics in the engineering school. "How is that an advantage? We believe students who have the benefit of purposefully developing the full set of technical skills, soft skills and leadership skills have an edge entering the professional world."

Bill Dykeman is one such example. During his 30-year career with Hughes/Raytheon, the 1985 UM School of Engineering graduate has served in various technical and management

“

When I left Ole Miss in 1985, I realized I had gotten a lot more than I bargained for. I had been living at the intersection of liberal arts and engineering for four years and was more prepared for the future than I realized at the time.

”

BILL DYKEMAN

roles. He now serves as chief engineer at Raytheon's Space and Airborne Systems facility in Forest, Mississippi, and reports into the SAS Electronics Engineering Center. He and his team develop the infrastructure to provide on-time delivery of high-performance, high-quality aerospace products.

An expert in measurement technology for antenna and radar systems, Dykeman recently led the design and implementation of high-power, far-field and near-field antenna ranges and low-power diagnostic chambers used for

testing Active Electronically Scanned Array antennas. During this assignment, he planned and executed more than \$50 million in capital improvements, including the Navy's Next Generation Jammer.

"When I left Ole Miss in 1985, I realized I had gotten a lot more than I bargained for," Dykeman said. "I had been living at the intersection of liberal arts and engineering for four years and was more prepared for the future than I realized at the time."

Dykeman said the university taught him not only circuit theory, controls,

antenna design and digital systems but also gave him a transformed attitude for the love of lifetime learning and the ability to think critically and independently.

"My liberal arts courses in German, U.S. history and psychology were a great complement to my highly technical undergraduate degree," Dykeman said. "I went from being a fairly introverted engineer type to a much more outward-thinking, leadership-oriented and ambitious graduate. I owe much of my career success to this unique starting place in my college experience. I believe the liberal arts influence was especially helpful when my career turned more toward technical management, where I have served in various project and department management roles."

All ABET-accredited engineering schools deliver a solid set of technical skills, according to Kendricks, but Ole Miss, with its multitude of opportunities for personal enrichment, gives students more than 275 student organizations and clubs, ranging from academic, cultural, religious, special interest, professional and social to elected office in student government.

Acacia Santos of Southaven, Mississippi, is active in many of these organizations. The senior mechanical engineering major has a full course load with her manufacturing emphasis. Yet she also feels it's important to engage in the greater UM community, frequently sacrificing sleep to participate in the extracurricular activities she enjoys.

Santos is a member of the prestigious Columns Society, an orientation leader and a community assistant with the Department of Student Housing. She also has held leadership roles within the Black Student Union, Associated Student Body and Student Activities Association in addition to being active in various honor societies and volunteer organizations.

"It's amazing if you focus all four years of your education on engineering, but I think it might mean more if you can see other parts of the world around you because it rounds you out," Santos said. "You're not always going to be interacting with just engineers; you're going to meet a world of people from all different backgrounds, and if you don't know how to understand them

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I've seen what leadership is like, and I know what it means to follow and be a supportive base, and so I feel like I can take both of those together and be an amazing CEO or project manager someday.

”

ACACIA SANTOS



Ole Miss senior Cole Putnam escorts 2016 Miss Ole Miss Acacia Santos onto the football field during Homecoming. Photo by Kevin Bain, University Communications

and interact with them, it will make it so much harder to work together.”

The University of Mississippi has given Santos more opportunities to meet people than she ever dreamed possible. Most recently, she was elected Miss Ole Miss after shaking many new hands during a stressful campuswide campaign — a difficult task for a self-proclaimed shy person, yet also rewarding. The role of being Miss Ole Miss comes with a number of public-speaking obligations, which Santos said will further prepare her for one day being a leader in the engineering profession.

“I’ve seen what leadership is like, and I know what it means to follow and be a supportive base, and so I feel like I can take both of those together and be an amazing CEO or project manager someday,” Santos said. “I feel like engineering can change the world. I mean it constantly is changing the world. You always need engineers and people with ideas to make this place

better. It’s like the ultimate service. To me, I’m doing something I love but also helping everybody else out.”

At Ole Miss, opportunities abound for student involvement in special events, pageants and musical entertainment such as the UM Concert Singers, which made a guest appearance at the White House, singing for President Obama; the UM Gospel Choir, which signed with a major gospel record label; and the Ole Miss African Drum and Dance Ensemble.

Additionally, students can find challenging activities and incorporate healthy habits through the university’s recreational programs and services by participating in intramural sports, swimming, group fitness and personal training, as well as in exciting off-campus adventures such as rock climbing, hiking and white-water rafting.

About 42 percent of Ole Miss students participate in Greek life in one of 35 national fraternities and sororities housed on campus, all of which support

various charities and philanthropies while promoting a sense of camaraderie. A campuswide day of service, dubbed the Big Event, gives Greeks and non-Greeks alike a chance to cumulatively contribute thousands of hours of volunteer work to Oxford and Lafayette County each spring.

Speaking of the broader community, the university’s home base of Oxford has the amenities of a big-city borough without the hassles. Musicians, artists and writers alike find inspiration in its rich history and small-town charm. William Faulkner’s home, Rowan Oak, is a short walk from the town square, where many of Oxford’s unique shops, galleries and first-class restaurants are located. In addition to many area parks, bike paths and running trails, nearby Sardis Lake offers a popular gathering place for students.

And there’s always the excitement surrounding game day, no matter which of the university’s 16 Southeastern Conference teams students choose to support.

“Ole Miss offers an incredible array of opportunities to get involved! I can honestly say I did it all and my college experience was amazing,” said **Stephen Greer** of Clinton, Mississippi, who earned a bachelor’s degree in mechanical engineering in 2016 and is now a full-time student at the University of Mississippi Medical Center School of Dentistry. “I was



Stephen Greer (BSME 16) (left) and twin brother Michael Greer (BSME 16) celebrate their graduation.

“
Ole Miss offers an incredible array of opportunities to get involved! I can honestly say I did it all and my college experience was amazing.
”

STEPHEN GREER



Dustin Dykes and his father, Col. David Dykes (BSChE 86) pose for a photo at the Ole Miss Army ROTC Military Ball.

“
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on occasion.
”

DUSTIN DYKES

Senior mechanical engineering major **Dustin Dykes** of Madison, Alabama, has had a similar experience. Dykes is Rebel Battalion commander of the Ole Miss Army ROTC, an organization that has given him the opportunity to travel to Germany and Korea. He is also an active member of the Engineering Student Body, serving as secretary-treasurer for the 2015-16 academic year, and is chapter president of the American Society of Mechanical Engineers. He has also served as vice president of the Baptist Student Union and is actively involved with First Baptist Church of Oxford, where he participates in the college ministry, sings in the choirs and works in the nursery.

“I have attended almost all home football games and also thoroughly enjoyed SEC tennis, baseball and basketball,” he said. “I have seen the Ole Miss Choir perform ‘Carmina Burana’ as well as watched the Russian National Ballet perform in the Ford Center. Ole Miss offers amazing opportunities with something to interest everyone. All of these extracurricular opportunities have broadened my educational experience beyond engineering and have also provided an outlet to relax on occasion.”

a Division I pole vaulter (Academic All SEC), in the military and ran two businesses. I competed in business plan competitions, was part of the Sigma Chi fraternity and inducted into Who's Who. Throw in tailgating at football games and fun on the Square, and I would say it was a good mix! There was never a dull moment at Ole Miss.”

Greer places great value on his well-rounded academic experience, stating that graduating from Ole Miss with an engineering degree and a minor in

chemistry showed him the importance of hard work while preparing him for the work to come.

“As a dental student, I appreciate the critical-thinking skills I developed while studying engineering,” he said. “I firmly believe that the professors in the engineering school challenged and mentored me into becoming a quality dental school student. And this year, my peers elected me as class president. I owe that success to the well-rounded education I received at Ole Miss.”



Hugh Warren stands in front of the Robert C. Khayat Law Center, where he plans to go after graduating with a degree in electrical engineering.
Photo by Marni Kendricks

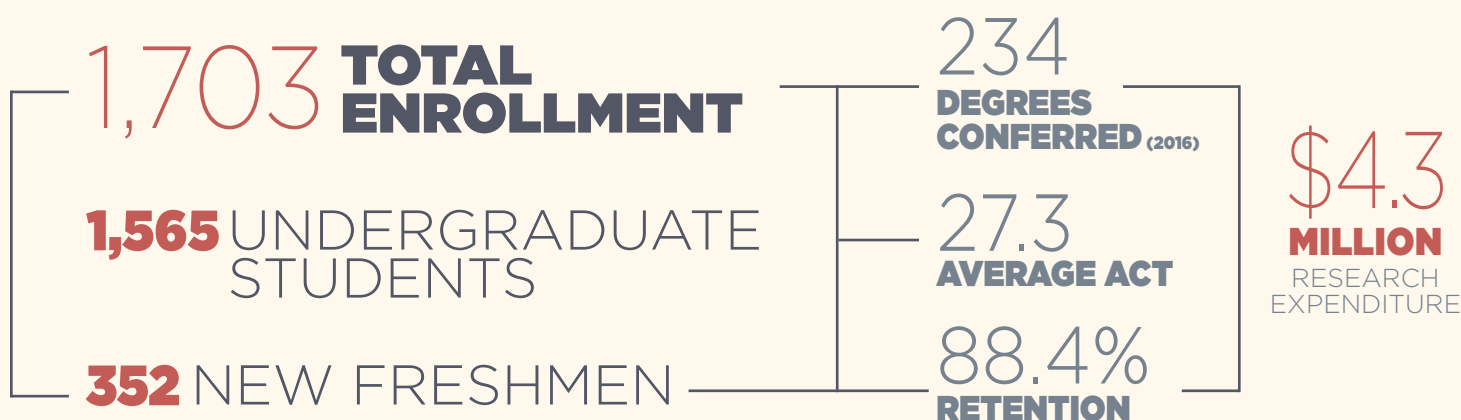
Interacting with other students from diverse backgrounds is an added benefit of being an engineering major who participates in the many different organizations and activities available at a liberal arts-centric university.

"Being a part of the Ole Miss community means meeting new people and learning leadership skills that reach across human differences in this country and elsewhere," said Brandi Hephner LaBanc, vice chancellor for student affairs. "Students from various backgrounds find many opportunities to mingle, study, debate and socialize, forming bonds that last."

In fact, the University of Mississippi is extraordinarily diverse, with students from all 50 states, Washington, D.C., and 90 countries. Its open enrollment policy, balanced with a top honors college and tuition rated among America's best values in higher education, draws people from all socioeconomic backgrounds. UM students are African-American, Asian, Latino and Caucasian, and hail from such places as Sweden, Israel, Nigeria, Japan and Australia.

Ole Miss offers abundant opportunities for developing personal and professional friendships with faculty, staff and students. Administrators and professors alike pride themselves on their open-door

Engineering at Ole Miss



“

Engaging in and fostering personal relationships is such an essential and intentional human act, albeit one in which not enough emphasis is placed in this day and age.

”

HUGH WARREN

policies, and small class sizes make learning interpersonal and inspirational.

“Engaging in and fostering personal relationships is such an essential and intentional human act, albeit one in which not enough emphasis is placed in this day and age,” said **Hugh Warren** of Madison, Mississippi, a senior electrical engineering major. “Robust extracurricular opportunities provide an avenue for these relationships to be forged. They also contribute to a more dynamic environment that is helpful in preventing complacency and a stagnant mindset.”

Warren was an active member of Kappa Alpha Order, where he served as a new member educator and a judicial

council member. He also served as president of the Engineering Student Body from 2015 to 2016, as an engineering ambassador and as an Associated Student Body senator. He regularly attends football games and works as a houseboy for the Kappa Delta sorority.

“Not having this experience would have made me two-dimensional,” he said. “A rigorous academic load coupled with an equally involved social schedule provides meaningful and valuable depth to any person. My plan is to leverage the networks and relationships I have created in college as I pursue my goal of becoming an attorney with a practice focused on patents and intellectual property. Studying engineering has taught me

critical skills in approaching complex problems that I feel confident will benefit me as I study and practice law.”

Greer shared similar sentiments.

“Ole Miss has a strong reputation in math and sciences and offers a unique path to medical or dental school by allowing you to major in engineering while getting the necessary prerequisites in other sciences. I knew the critical-thinking and problem-solving techniques I learned in the mechanical engineering program and my rigorous science classes would give me the skills I needed to get accepted and be successful in dental school,” he said. “I went to Ole Miss to learn and get a degree; I left truly understanding what a special place it is.” ✨

ACCOLADES

An engineering student dual enrolled in the Chinese Language Flagship Program was top ranked in the national competition for the Chinese Language Flagship capstone program (2015).

An alumna was named as the National Society of Professional Engineers' 2005 “New Face of Engineering.”

Chemical engineering students won first place in 2009 and second place in 2011 in the American Institute of Chemical Engineers' National Student Team Design Competition; ranked sixth in the nation for all-time awards won.

2

GOLDWATER SCHOLARS

1

FULBRIGHT SCHOLAR

GATES CAMBRIDGE SCHOLAR

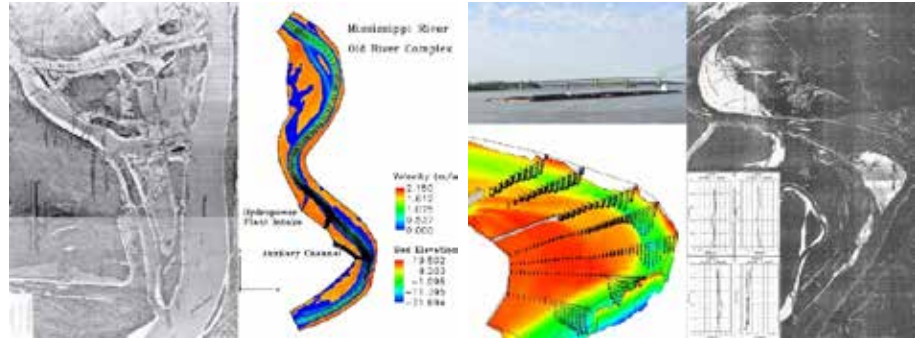
TAU BETA PI NATIONAL LAUREATE

Water, Water Everywhere!

NATIONAL CENTER FOR COMPUTATIONAL HYDROSCIENCE AND ENGINEERING ESTABLISHES STARTUP COMPANY TO COMMERCIALIZE SIMULATION MODELS

By Mustafa Altinakar and Yafei Jia

During the last 30 years, the research faculty, scientists and staff at the National Center for Computational Hydroscience and Engineering have developed a suite of fully verified and validated numerical models in one, two and three dimensions to simulate free-surface flows in watersheds, rivers, lakes, estuaries, coastal areas and oceans. Called CCHE1D™, CCHE2D™ and CCHE3D™, these numerical models have modules for simulating erosion, transport and deposition of sediments and the associated morphodynamic changes, transport and fate of pollutants, water quality, and



aquatic ecosystem and ecotoxicology. They have been and are being used extensively by federal and state agencies, researchers and consulting engineers in the U.S. and abroad to solve real-life engineering problems and to carry out scientific research.

Encouraged by the university administration, faculty and scientists

at NCCHE have recently established a startup company to commercialize these numerical models. The startup company now has licensed users in the U.S. and around the world.

For more information, visit https://www.ncche.olemiss.edu/projects/CCHE2D-3D_Commercialization

NCCHE PLAYS IMPORTANT ROLE IN U.S. DAM SAFETY

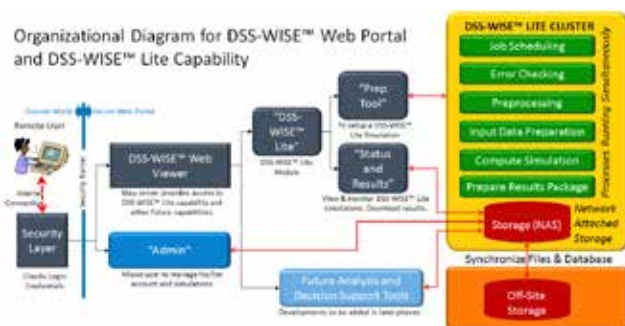
DSS-WISE™ Lite is a unique web-based automated dam-break flood modeling and mapping capability, which operated from 2012 to 2014 under the Federal Emergency Management Agency Dams Sector Analysis Tool (DSAT) platform hosted at the Argonne National Laboratory. In 2015, NCCHE was contracted by FEMA as the sole source provider to develop a stand-alone improved version to be used by FEMA personnel, state dam safety offices and other stakeholder agencies to carry out dam-break flood mapping for hazard classification, consequence analysis and emergency action plan preparation. During emergencies, DSS-WISE™ Lite capability is also used as a real-time operational flood mapping model for planning emergency response and evacuation.

NCCHE developed the new stand-alone system in less than a year. After a successful beta testing by 60 users from 12

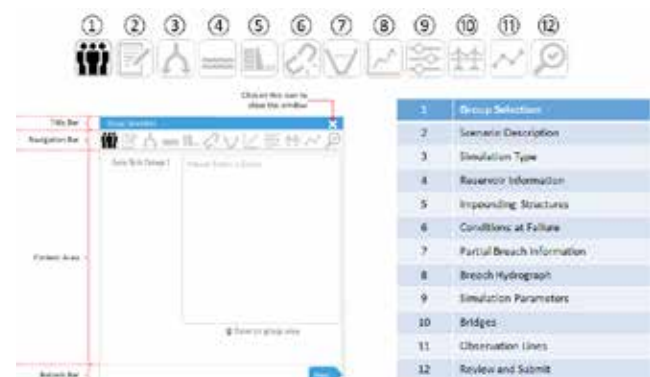
states and two federal agencies, the new system is now open for use by all authorized users. The system is handling about 10 simulations per day on average. In 83 percent of the simulations, users receive results in less than a half-hour.



Status and Results page for viewing/downloading results



For more information, visit https://www.ncche.olemiss.edu/projects/DSS-WISE_Lite



Graphical User Interface (GUI) for simulation setup



HELPING TAIWAN TO SOLVE EROSION PROBLEMS

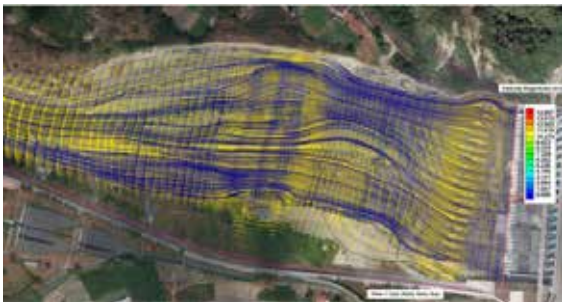
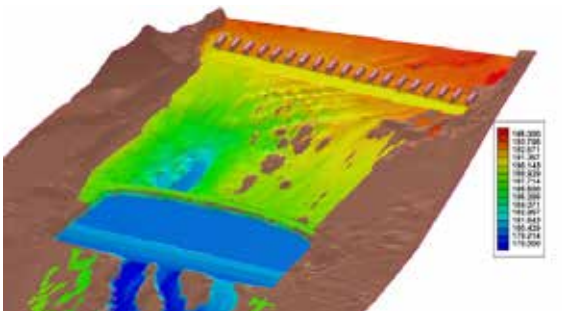
In Taiwan, heavy rainfall brought by typhoons often leads to severe erosion of steep mountain slopes and river channels with weak geological formations. Vertical erosion of the soft and easily erodible rocks forming the bed of the Chushui River downstream of the JiJi Weir built in 2001 has reached about 30 feet and is threatening the integrity of the structure. NCCHE is helping the Water Resource Planning Institute of Taiwan to study the problem and to develop innovative solutions to stop the erosion and stabilize the river channel.

To predict the erosion process under current conditions and structural measures, NCCHE scientists developed a new computational module to simulate the abrasion of the soft rock by the sediments transported by the river. The new module was implemented in CCHE2D and CCHE3D models and successfully tested using the past observations.

Using the improved model, NCCHE scientists developed and numerically tested innovative structural measures to prevent erosion in collaboration with the researchers at the National Chiao Tung University, Taiwan. These measures are being considered for implementation downstream of the dam.

The soft-rock channel erosion module will soon be made available in the commercialized versions of CCHE2D/3D.

For more information, visit https://www.ncche.olemiss.edu/projects/Taiwan_Project



SIMULATING GRANULAR DAM FAILURES AT THE LABORATORY

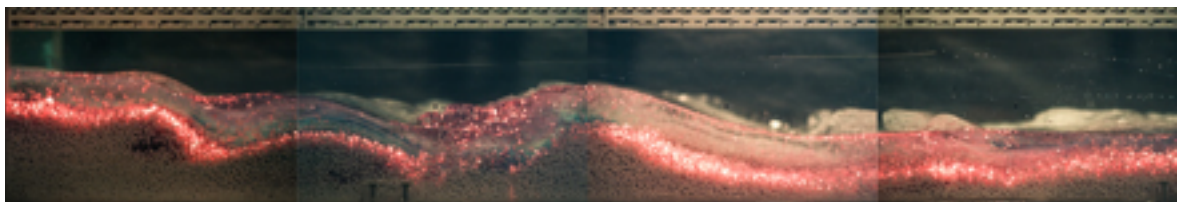
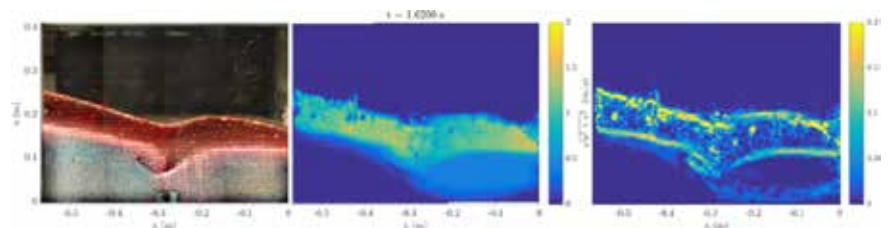
NCCHE is known for its cutting edge software for flow simulations, but only a few know about its state-of-the-art experimental facilities located at the USDA-ARS National Sedimentation Laboratory. One of those is the dam-break flow facility, which consists of a reservoir and a platform to serve as the floodplain, separated by a fast-moving

vertical gate to simulate a dam break. High-speed cameras and other sensors are used to capture the flow characteristics. Novel image analysis techniques have been developed to extract velocity distributions of water and sediments and to reconstruct three-dimensional flow geometry. The experimental results will help to better understand tailings

dam failures, debris and mud flows, and to develop numerical models to simulate complex two-phase flows of sediment and water.

For more information, visit <https://www.ncche.olemiss.edu/projects/GranularFlows>

Extraction of velocity and vorticity fields in water and sediment layers. Reddish color is due to the laser-sheet lighting.





Biomedical engineering students soon will be among those using engineering laboratories such as this one.

Biomedical degree program arrives fall 2017

By Edwin Smith

After years of development, the University of Mississippi School of Engineering has launched its new biomedical engineering degree program.

The Mississippi Institutions of Higher Learning Board of Trustees approved the curriculum for the new major during its November 2016 meeting. Students interested in pursuing a Bachelor of Science in Biomedical Engineering are encouraged to apply now for admission for the fall 2017 semester.

"Biomedical engineering at the University of Mississippi will prepare students for rapidly growing opportunities in three primary job markets," said Dwight Waddell, associate professor of electrical engineering and director of the new program. "These include biomolecular engineering, biomedical systems engineering and bioinformatics."

"I believe that the addition of the new biomedical engineering program will definitely serve the university, state and nation well," said Alex Cheng, dean of the engineering school. "With so much attention currently being given to the field, having such a program here keeps us highly competitive."

Biomolecular engineering is a growing discipline at the interface of molecular biology, biophysical chemistry and chemical engineering, whereby students gain expertise developing novel molecular tools.

"These tools are used to translate understanding of fundamental prin-

ciples of physical biochemistry into useful processes, devices, therapies and diagnostics," Waddell said.

Biomedical systems engineering incorporates elements of mechanical engineering design with physiological controls and instrumentation.

"Students can employ lessons from bio-instrumentation and systems mechanics to create sensors, test models and build devices to meet currently unmet needs in the medical field," Waddell explained.

Bioinformatics is an interdisciplinary hybrid combining computer science, statistics, mathematics and engineering to analyze and interpret biological data.

"Techniques from bioinformatics have helped unlock the human genome, better understand evolutionary biology and are now pivotal in the coming era of 'big data' analysis," Waddell said.

In addition to fundamental engineering courses, biomedical engineering students will take courses in biology, chemistry and systems physiology to more effectively apply engineering science to specific medical and industrial needs.

"We are excited to be able to expand our current emphasis in biomedical engineering into a full major," said Ryan Upshaw, assistant dean for student services in the engineering school. "Growing numbers of prospective students have shown interest in combining engineering and medicine through a program like this, and I have enjoyed sharing the news about this new academic offering with them. We are also excited for the chance

to increase collaborations with the University of Mississippi Medical Center on undergraduate research and experiential learning opportunities. I look forward to welcoming the first class of biomedical engineering students next fall!"

The idea and initial work for the new program was initiated by Ramanarayanan "Vish" Viswanathan, chair of the UM Department of Electrical Engineering, and Cheng. Waddell, also a research associate professor of health, exercise science and recreation management at UM, moved into the School of Engineering to facilitate program development in 2013.

"It's an exciting time," Waddell said. "With increasing demands to share fiscal resources and promote interdisciplinary research, BME is uniquely situated at the cusp of applied technology, medicine and STEM education."

A former postdoctoral researcher at the Georgia Institute of Technology, Waddell earned his doctoral and master's degrees in biomedical engineering from the University of Texas, and his bachelor's degree in mechanical engineering from Louisiana State University. Formerly a faculty member at Tulane University, he has an active research program, including projects on stuttering mitigation, functional brain imaging and postural control of gait and locomotion. 🌟

For more information about UM's biomedical engineering program, visit <https://engineering.olemiss.edu>.

General engineering alumna among Yates' youngest directors

By Edwin Smith

Olivia Walt has evolved quickly from a promising 2015 University of Mississippi general engineering graduate to director of business development at Yates Construction in Jackson.

Walt, who entered the firm as an estimator, was responsible for generating the cost of construction of a project. About one year later, she advanced to her current position.

"My initial impression of Olivia was that she seemed smart and capable," said Laura Hearn, senior marketing manager at Yates. "Since then, she has proven to be not only smart and capable but a hard worker, self-motivated and dependable."

Walt said she has grown into her present duties.

"By getting a technical degree with a business background, I can now communicate with a project manager or engineer who is trying to talk about foundations or logistics," Walt

said. "I can also communicate with an owner about what makes our firm stand out from another."

Yates Construction has four core values: safety, integrity, passion and commitment, which mean a lot to Walt.

"I believe that these are all fundamental values that a company should possess and exhibit in day-to-day activities," she said. "Yates is a family-owned company, and the (Yateses) really do strive to make each and every employee feel like a member of their family."

Walt, who earned her degree with an emphasis in business, hails from Jackson. She said she chose Ole Miss because she fell in love with Oxford and the university while touring campus and attending football games.



"I could talk for hours on why I loved the engineering school, but my absolute favorite thing about UM engineering is the support I received from Marni Kendricks and Dwight Waddell," she said. "They are outstanding individuals, both professionally and personally. They thrive on seeing their students succeed."

Walt said she also loved the tight-knit family that the school creates.

"Bringing mechanical, civil and general engineers all into one group created relationships that will last a lifetime," she said.

Kendricks, assistant dean for undergraduate academics and a fellow UM general engineering alumna, said Walt is exceptional.

"I am so happy for Olivia," Kendricks said. "She has got to be one of the youngest people to ever take this job. So very wow!"

Outside work, Walt enjoys riding hunter/jumper horses and was the high point adult amateur rider in Mississippi for 2015. 🌟

Ole Miss General Engineering

33

Program includes 33 credit hours of course work in emphasis areas outside the School of Engineering

90%

90% acceptance rate into medical or dental school for applicants since tracking began in 2004

CME

Available degree program for students admitted to the Center for Manufacturing Excellence

Opportunity for cross-disciplinary theses for Honors College students

Program director Adam Smith advises students in emphases such as pre-med, pre-law, business, manufacturing, military science and naval science

Intra-departmental degree program within the School of Engineering



Members of the UM chapter of the Collegiate Automotive Manufacturing Society include Joseph Reed (left), a mechanical engineering major; Taylor Scism, a business management major; and Tyler Thompson, who is majoring in mechanical engineering.

Photo by Kevin Bain/Ole Miss Communications

Automotive Society chapter organized by manufacturing students

By Edwin Smith

As the auto industry in the United States continues to rebound, University of Mississippi students are positioning themselves for future productivity and success.

Twelve students have formed a campus chapter of the Collegiate Automotive Manufacturing Society. The chapter began in fall 2015 as a result of an idea presented by Ryan Miller, programs manager for the Haley Barbour Center for

Manufacturing Excellence and the group's adviser.

A member of the Mississippi Automotive Manufacturers Association board of directors, Miller suggested to the CME students that they found a collegiate engineering-business-accounting honors society with MAMA as the parent association. The goal is to better connect automotive manufacturers with millennials and try to help the manufacturers better understand them through more direct

contact. Miller's dream is that all the automotive manufacturers associations will develop CAM Society chapters of their own in their respective states' public universities.

"Ryan approached me with the idea, looking for input and assistance from a student perspective," said Harleigh Huggins of Oxford, a junior mechanical engineering major and chapter president. "Together, we developed the officer structure and planned the first recruitment meeting.

"It has grown from there. We are the guinea pigs for this project, as we are the first CAM Society to get past the planning stage into the recruitment stage. We will hopefully pave the way for future CAM societies."

Other CAM Society officers are Tyler Thompson of Madison, a junior mechanical engineering student and vice president; and Taylor Scism, a junior business management major from St. Louis, who serves as the chapter's chief financial officer.

Representatives of the group attended the Southern Automotive Conference this fall in Biloxi, where they served as panelists in two sessions dealing with a multigenerational workforce and working with "millennials."

"It was a great opportunity for us to network with Southern automotive manufacturers and their suppliers," Huggins said. "Giving members that exposure and opportunity for networking is extremely important to CAM."


The students' presentation received high marks from those in attendance.

"They have been lauded as the best part of this conference by multiple sources," Miller said. "The team represented the university with great class, tact and professionalism."

Among activities the chapter has sponsored since its charter was having Donald "Stogie" Stoegbauer, a member of MAMA, come talk to chapter members about his group's importance and the benefits of a relationship with MAMA.

"It is our goal to get students in higher education more involved with the automotive manufacturing industry and make it easier for those already in the industry to engage with potential future employees," Scism said. "It is our hope that other four-year institutions nationally recognize the impact this could have on the industry and create their own chapters."

"As we are expanding our recruitment process, we are looking for engaged individuals who have a passion for the automotive industry and academics."

Spring events will include philanthropy, team-building activities and a "Cars under the Stars" event with MAMA. Members also have discussed helping local Cub Scout packs with their Pinewood Derby car designs as an outreach activity. 

Chemical engineering student takes on major tasks during co-op

By Chinelo Ibekwe



After my sophomore year, I took two semesters off to work with two manufacturing firms. I dedicated the 2015-16 academic year towards getting co-op experience.

For the fall semester, I worked with Mars Food Co. (Uncle Ben's branch) because I was curious about food manufacturing practices. Mars Food covers a lot of brands like Skittles, Mars chocolate, Twix and many more, but I was most excited about the Uncle Ben's rice branch just because rice production is predominant in my home country, Nigeria.

As an intern, the first project assigned to me was to redesign the site quality management system to utilize ingredient specific information such as allergen risks. The project tested my ability to research process capabilities to create process descriptions for 17 systems, including the rice milling system. I also conducted risk assessment for 130 raw material categories for Uncle Ben's Rice product line and formulated food management process descriptions to ensure compliance with food industry safety standards.

Having completed my intern project ahead of the deadline, I volunteered to help out with a section of the internal auditing process. I got to interview new hires to ensure that they had the fundamental knowledge of the business operations, e.g., how to apply the quality principle to their jobs, identifying food safety hazards, etc. I also worked with consumer complaint investigations.

For the spring semester, I worked with Medtronic Co., a medical device manufacturing company. My first project was to analyze the synthetic bone graft market to make recommendations on a supply base strategy to the management team. Next, I performed capabilities assessment on 50 suppliers and developed an inventory tracking system for an acquisition. Finally, as part of a three-person team, I rationalized critical sterilization data for a multibillion-dollar acquisition.

The highlight of my co-op experience was when I took part in a business case competition: a two-person team that analyzed profitable geographical markets and made recommendations to company executives to expand footprint in West Africa. The research I conducted exposed me to the threats that medical device companies face when trying to expand in developing countries like Nigeria.

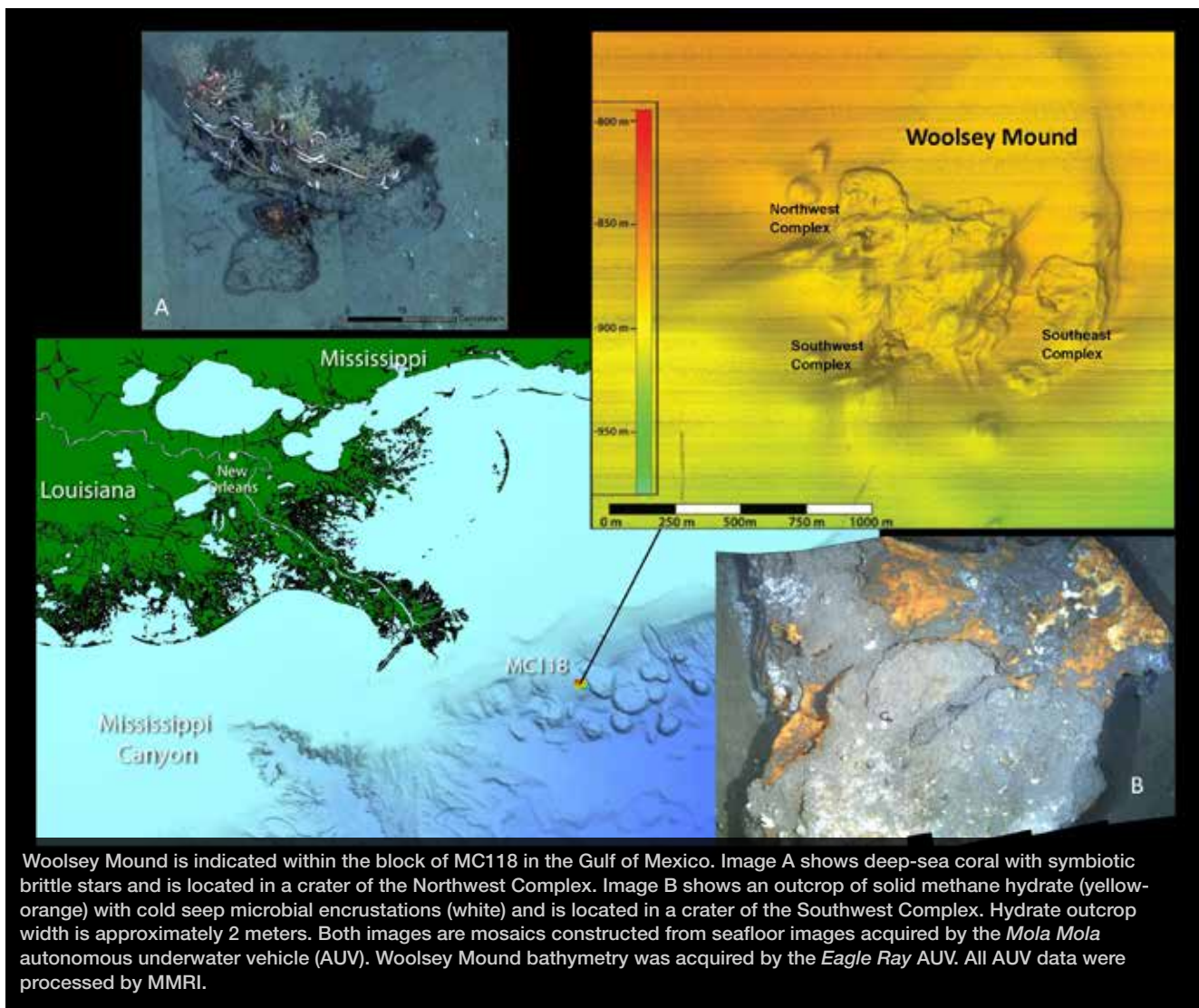
The truth about life is that every experience is what you make of it. Based on my co-op experiences, I pushed a little harder every time, just to create more opportunities for me to learn. I chose not to be the average intern. I am most proud of my insatiable appetite for learning. This is the basis of the work of a genius – the ability to LEARN.



IBEKWE

Co-ops are a great opportunity for both students and employers.

For more information on our co-op program, please contact Megan Miller at 662-915-5699 or megan2@olemiss.edu.



MMRI researches oil spill impact and more

By Greg Easson

The Mississippi Mineral Resources Institute was established in 1972 by the Board of Trustees of State Institutions of Higher Learning in an effort to coordinate mineral-related research in Mississippi. The mission of MMRI remains to provide both the public and private sectors with expertise needed to make responsible decisions regarding Mississippi's and the nation's mineral resources and environmental well-being.

The goals of MMRI are:

- To promote mineral resource and related environmental research and education within the state and around the world
- To provide academic background and practical expertise to interested agencies of industry, academia and government
- To promote the transfer of technology between academia, industry and government
- To ensure that future scientists and engineers receive appropriate training by providing educational opportunities, work experience and financial support in academic fields complementary to the goals of the institute

MMRI seeks to meet these goals by pursuing research projects that address contemporary issues, providing educational and practical training to college students who work on these



projects, providing our project results to interested parties in industry, government and academia, and by engaging in community service.

Did you know?




MMRI manages the ONLY research reserve on the seafloor of the Gulf of Mexico. The site, Mississippi Canyon Block 118 (MC118), is at approximately 1,000 meters below sea surface and contains a hydrate mound. The mound, named Woolsey Mound in honor of former MMRI director James R. (Bob) Woolsey, has been extensively mapped and studied using multiple geophysical datasets. The site continues to be used by scientists around the Gulf of Mexico in their research into the impact of the Deepwater Horizon accident.

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




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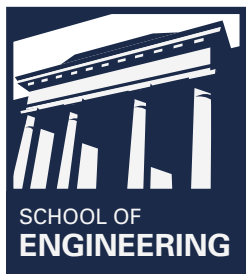
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What a ride!

UNEXPECTED DEGREE PATH LEADS ALUMNA TO EXXONMOBIL AND CROSS-COUNTRY BIKE TRIP

By John O'Haver and Annie McClellan

Four-plus years ago, Annie McClellan walked into the chemical engineering department's office. She was entering her senior year, finishing off a B.S. in chemistry and B.A. in biology that year.

When asked why she chose graduate school in chemical engineering, McClellan told her story.

"As you know, it took me a bit to figure out what I wanted to do with my life," she said. "I knew I loved chemistry, but I didn't know how to carry that education over to a professional career that excited me. I thoroughly enjoyed research and lab work, but I knew it wasn't something that I wanted to do my entire life.

"I ended up meeting Dr. Alice Clark at a local conference down at Mississippi State University, and I shared with her my ideas and concerns for my career. She really took me under her wing after our chat. She set up meetings on campus for me with different professors in the School of Engineering to show me what different fields were available in engineering and to hopefully spark an interest for me. That's when I set up some time to chat with Dr. O [John O'Haver] about chemical engineering and possible associated career paths.

"After some talking and a whole lot of thinking, I found myself signing up for Chemical Engineering 307. After one course in chemical engineering, I was hooked and knew that it was the area I needed to pursue professionally.

“My internship with XOM could not have been any more of a positive experience.”

”

ANNIE MCCLELLAN

"I enjoy solving challenges, which really gave me a type of fulfillment when I did my internship at ExxonMobil. My internship with XOM could not have been any more of a positive experience. I was ecstatic when I received my full-time offer. I had three different co-op roles during my yearlong internship, the first of which was in the operational support department at the Baytown Olefins Plant.



Annie McClellan cycles to raise money for nonprofit Bike & Build.

"My second role was at BOP again, but I moved to the planning department to work on beginning stages of capital projects. Then for my last role, I was moved over to the refinery in Baytown and joined the coordination and product quality department."

"All of my projects were centered around making our computer simulations of the site as accurate as possible, considering both fluctuating economics and sitewide stream properties. We use that simulation as a tool to decide crude imports as well as a number of signals throughout the plant."

Between graduation and ExxonMobil, McClellan volunteered for Bike & Build, or B&B, a nonprofit organization that brings young adults together to cycle across the country to raise money and awareness for affordable housing.

"I've been cycling for about eight years, but it wasn't until my internships in Houston that the affordable housing issues came to the forefront for me. While at XOM, we volunteered at a good number of community service projects in the Houston area. Some of my favorites were the weekends we spent working with Habitat for Humanity.

"From these service projects, I knew I wanted to get more involved in the affordable housing cause, so B&B gave me the perfect opportunity to spend a summer of service and cycling. On my route, South Carolina to Santa Cruz (SC2SC) (4,200 miles), we raised about \$150,000 and helped build 13 houses across the country." ✨



Dean Cheng congratulates assistant professor Adam Smith for double awards.

Awards and Grants

Adam Smith, Ph.D., assistant professor of chemical engineering, received both the Outstanding Junior Researcher and Outstanding Service awards during the 2016 Engineering Banquet.

Paul Scovazzo, Ph.D., associate professor of chemical engineering, and Smith, received a National Science Foundation grant for a project titled "Magnetically activated chemical equilibrium and separations using recyclable magnetic surfactants and polymers." Additionally, Smith received a National Science Foundation Major Research Instrumentation grant titled "Acquisition of a Goniometer-Based Light Scattering System for Research and Training at the University of Mississippi."

Science Meets Art in Honors Thesis

Sally McDonnell Barksdale Honors College graduate Joella Vaughnn (BSChE 16) used a scientific approach to artistic expression in her thesis.

"I wanted to complete a thesis that utilized both my skills as a chemical engineer and as a painter," said Vaughnn, who decided to focus on the performance and composition of paint.

Vaughnn visited Golden Artist Colors in New Berlin, New York, to learn how it manufactures paint. After her trip, she decided to evaluate four types of paint as they act as a glaze, or a thin coat of diluted paint, to emulate a similar technique used by Dutch painter Johannes Vermeer. She chose oil, acrylic, gouache and encaustic technique, and evaluated their performance much like a scientist would evaluate the efficacy of a drug.

"I thoroughly enjoyed my Sally McDonnell Barksdale Honors College thesis journey, and I could not have accomplished my goals without strong mentorship from the Department of Chemical Engineering," she said.



Samples of Vaughnn's paint research

chemical engineering

combustion engineering
carbon sequestration
low-energy separations
composite materials/
interfacial chemistry
gene delivery
polymer synthesis
enhanced oil recovery
paper coatings

40%

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Barksdale Honors College
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246

STUDENTS

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ABET ACCREDITED PROGRAM SINCE 1954

Mechanical engineering labs get major facelift

By "Raj" Rajendran

Photos by Robert Jordan, University Communications

The faculty, staff and students in mechanical engineering have stepped up the pace this fall for the long-anticipated Accreditation Board for Engineering and Technology (ABET) inspection, which happens every six years. After many long hours and a tight budget, their tireless efforts have brought about some fantastic results that include "extensive but inexpensive" renovations in the labs, new state-of-the-art lab equipment and a perfect score with a six-year extension on the ABET accreditation inspection.

To begin, lab instructor Damian Stoddard and machine shop supervisor Matt Lowe performed a careful inspection of the rooms, experiments and other equipment to determine if repair, refurbishment or replacement was the most cost-effective approach. While still serviceable, the rooms were dated as were some of the experiments.

After the painstaking inspection, Stoddard and Lowe met with department chair A.M. "Raj" Rajendran, who was able to secure funding to move forward with the restoration. Energized by the support of Dr. Raj, and with the help of several students, they set about renovating and refurbishing everything



Melissa Wright, Jordan Hilderbrand and Joseph Jones work in the machine shop.



A mechanical engineering class is held in one of the Carrier Hall labs.



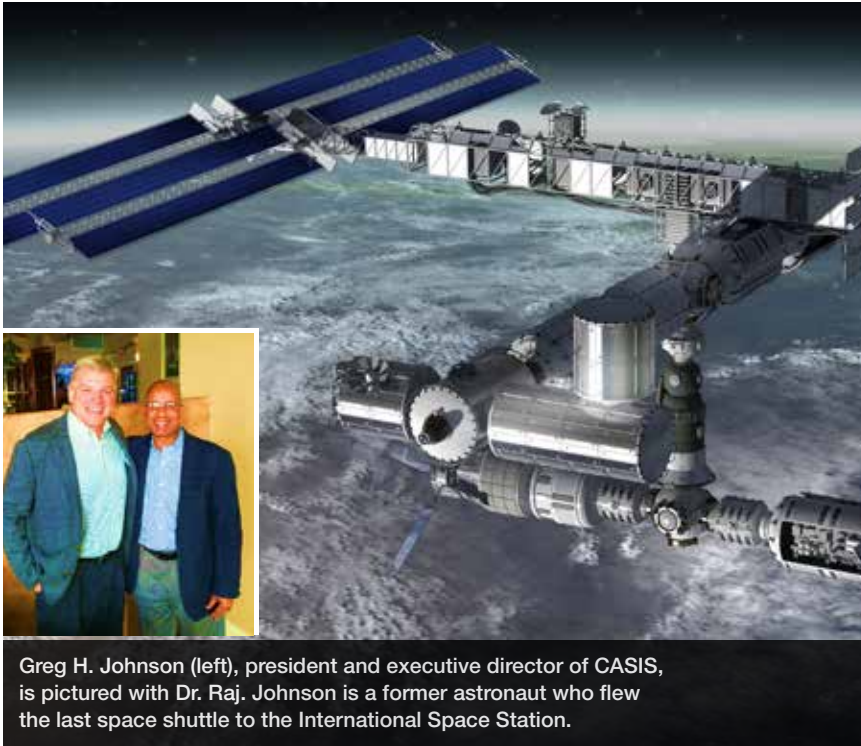
Graduate instructor Damian Stoddard in the refurbished mechanical engineering lab

in sight. A whirlwind of activity took place during which furniture, storage cabinets, desks and chairs were shuffled from one room to another and mostly landed in the machine shop. This was taxing on the department because, as they say in show business, "The show must go on!" Perseverance and cooperation among faculty and staff paid off, and the department was able to work around every lab without having to cancel a single lab section and still pull off a very budget-conscious remodeling. Walls and floors received a fresh coat

of paint, and what didn't get painted got scrubbed and mopped with a vengeance.

Facilities Management staff installed air-conditioning units in every room, and senior secretary Janet McBride placed work orders almost daily to speed up the process and help take some of the load off the other department employees. Then the arduous task of reassembling began.

The results have been spectacular and well received by all who have visited, and the lesson flow during the labs has improved dramatically. ⚙️



Greg H. Johnson (left), president and executive director of CASIS, is pictured with Dr. Raj. Johnson is a former astronaut who flew the last space shuttle to the International Space Station.

'Dr. Raj' sits on ISS R&D board

A.M. "Raj" Rajendran, chair of the Department of Mechanical Engineering, is a member of the research and development evaluation advisory board of the International Space Station U.S. National Laboratory. He was invited to join the board by Greg Johnson, executive director of the Center for the Advancement of Science in Space. CASIS was created and mandated in 2015 by Congress to manage the ISS National Laboratory.

The R&D evaluation board met in Kennedy Space Center Sept. 21-22, 2016.

About 60 or more STEM and other educational projects are being conducted in the ISS under microgravity using NanoRacks.

The projects include a large spectrum of applications: fire retardant of nanofibers, electrolytic gas evolution, crystal growth, melt and vapor growth, variable emissivity devices for thermal management, micromolecular transport, chemical extortion using continuous flow separation, improved aluminum casting, fiber optics manufacturing, earth abundant textured thin film photovoltaics and several kinds of additive manufacturing. Researchers in academic institutions are encouraged to team up with industries and federal laboratories to submit proposals to CASIS for obtaining unique data under microgravity.

All these scientific experimental data obtained under a microgravity environment will be compared to results obtained from experiments performed under gravity on Earth. Researchers will have an incredible opportunity to invent new processes and mechanisms to exploit extraordinary capabilities for a variety of engineering applications that could benefit mankind.

Meet new faculty member Shan Jiang



JIANG

The Department of Mechanical Engineering has hired a new faculty member: Shan Jiang. He earned his first Ph.D. in computational mechanics from Dalian University of Technology, China, and he recently obtained his second Ph.D. in structural mechanics from the University of Missouri, Columbia. His research interests are mechanics of materials and structures, multiscale modeling and simulations, strength of advanced materials, atomic/molecular-level simulations, thermo-mechanical response of nano-/mesoscale structures to extreme loading conditions, blast-resistant structures and materials, energetic materials, shock simulations, and high performance computation for simulation-based engineering science.

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mechatronics;
energy harvesting

UNDERGRADUATE RESEARCH AND
CO-OP OPPORTUNITIES

6

new faculty and instructors
in past two years

SENIOR CAPSTONE PROJECTS IN
INDUSTRY, ASME AND SAE
COMPETITIONS



A Stepping Stone

By Jason Ball

I still remember the excitement of that winter night when I received my first job offer. I had long pursued a college degree and the opportunities that it could offer, but my time at the University of Mississippi made me realize that this was but a stepping stone – the pursuit of knowledge should not end once you get a degree but act as a beacon that guides you day by day.

I entered the electrical engineering department as a 26-year-old with no technical courses under my belt. I had spent the better half of the previous eight years as a musician, traveling around the country trying to make ends meet.

During this time, I picked up a book titled *Godel, Escher, and Bach* by Douglas Hofstadter. This book moved me to say the least – I had to pursue some type of career in science. I chose electrical engineering because of the mathematical nature and how abstract the concepts are compared to other sciences. Anthropic reasoning will only take you so far before having to rely on mathematics to guide you. This was the challenge I needed in my life, but I frankly still had no idea what I would do with it.

Entering the department, I recognized immediately that the professors shared the same philosophy as me. The style of the subjects taught had a tendency to give you just enough to get started, and subsequently provided a space for deep introspection and reflection. As one professor put it, “The class is simply a time to discuss the topics. You have to put in

the hard work during the off time.” This attitude helped me discover an important skill – how to teach myself things (something that has translated very nicely into my professional career). But, despite learning this trait, I still had no idea what I wanted to do. Then one fateful day in class, I saw a packet capture in Wireshark.

One thing that the EE department excels at is giving students an opportunity to see what they enjoy about the field and pursue it rigorously with specific classes. Seeing that packet capture was astounding – never in my life had I seen 100,000 of anything. Yet, in a matter of seconds, this number of packets had traversed the air in front of me. This is another feeling I will never forget. I had discovered my calling: telecommunications. My professors noticed this, took me under their wing, and guided my education for the remainder of my time as an undergraduate.

My time at the EE department at the University of Mississippi is a period I will never forget. Each individual contributed to my personal growth and where I am today. However, it taught me more about myself and showed that it is never too late to get back into something. 🌟



BALL

Jason Ball (BSEE 15) is a C Spire RF design engineer.



UM Partners with Cadence Design Systems

EE students gain access to company's tools, learning services

The UM Department of Electrical Engineering has entered into an innovative engineering education relationship with Cadence Design Systems to provide electrical engineering students access to the company's tools and internet learning services.

Cadence is a leading provider of electronic design automation and semiconductor Internet Protocol or IP. Its custom/analog tools help engineers design the transistors, standard cells and IP blocks that make up system on chip (SoC). Its internet learning services courses include dynamic course content, downloadable labs, instructor notes and bulletin boards.

UM is the first university providing undergraduates access to these courses throughout the curriculum, with the goal of strengthening students' capabilities and résumés upon graduation.

Personal Best

"The four years I spent in the electrical engineering program were fantastic. I didn't notice how unique the EE department was until my junior year. Most of my friends who were outside the engineering department were in larger, fast-paced classes, where my classes were much smaller. The professors could tailor the material to focus more on our strengths and weaknesses. I also became close friends with my classmates as well as my professors. I am proud to say I am an alumna of the electrical engineering department at Ole Miss. Hotty Toddy!" — Faith Woods, Raytheon Systems Co.

All about Communications

Lei Cao, professor of electrical engineering, is principal investigator of a NASA Experimental Program to Stimulate Competitive Research (EPSCoR) project. Through this project, researchers from the University of Mississippi, Jackson State University and NASA Jet Propulsion Laboratory are developing novel delay-tolerant and robust systems for deep space communications.

Cao and his team have also recruited a number of undergraduate students who are working closely with graduate students and faculty in designing various practical communications systems using the Universal Software Radio Peripheral system.

As a co-PI, Cao has also largely contributed to the establishment of an Ole Miss site of the Broadband Wireless Access and Applications Center that is sponsored by the National Science Foundation. Cao is also leading a team that is working on spectrum sensing and dynamic channel assignment for 5G wireless communication systems.

B.S. in Biomedical Engineering

Starting fall 2017, the EE Department will offer the Bachelor of Science in Biomedical Engineering program, which is a joint venture of four engineering departments: electrical, chemical, mechanical, and computer and information science. See full story on page 18.

STEM Outreach

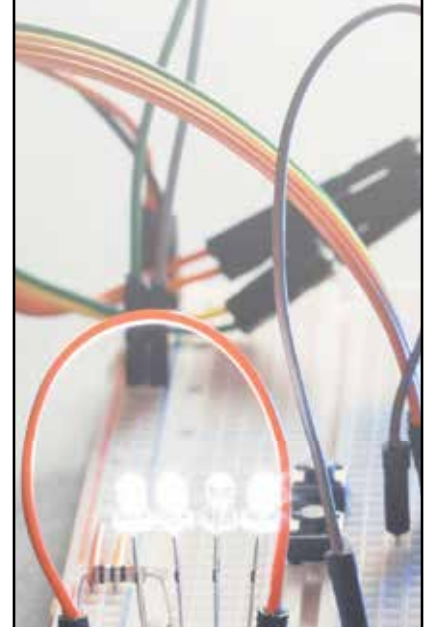
EE assistant professor Matthew Morrison hosted two summer camps for select high school students in 2015 and 2016. A student group worked on smart device apps to be used by athletes and athletics staff for research relating to concussions in several sports. A second project included interviews with NASA scientists for understanding impact assessment on the human body resulting from return-to-Earth landing on a Soyuz spacecraft, and another involved wireless sensor applications for emergency room monitoring in hospitals.

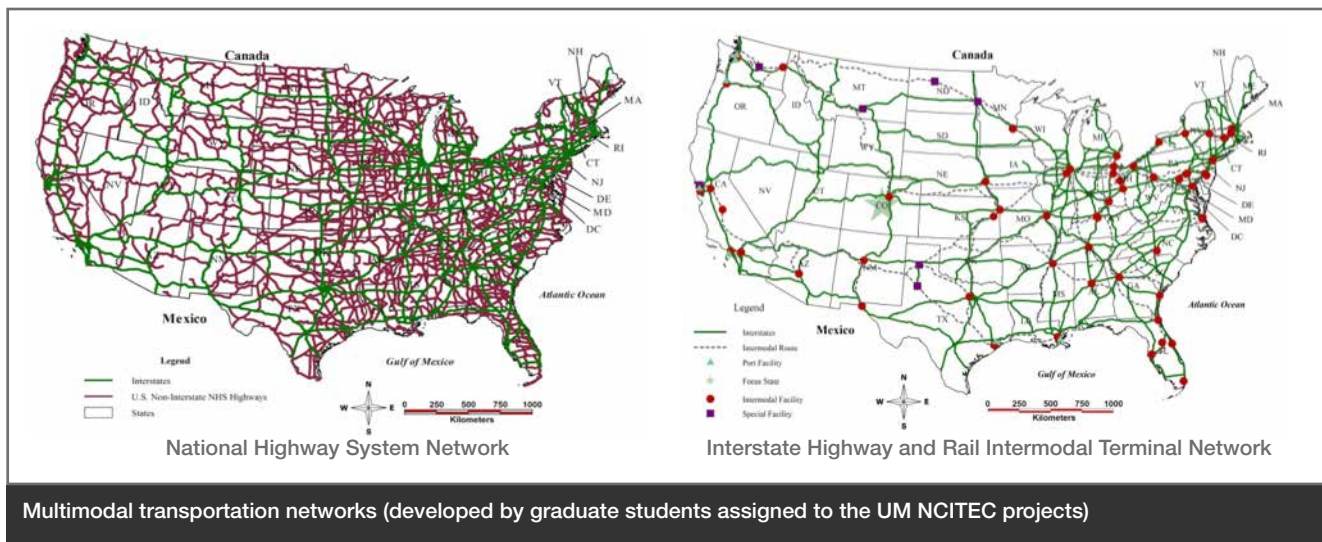
Faculty Recognition

Paul Goggans, Dwight Waddell and Greg Snyder (communicative disorders): Patent rights to one of their technologies, "UM7060 Utilizing Tactile Speech Feedback for Stuttering and other Speech/Fluency/Motor Initiation Disorders," has been licensed to StutterLess LLC.

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- National Science Foundation Industry/University Cooperative Research Center on broadband wireless access and applications
- ABET accredited program since 1969





CE receives \$1.26 million NCITEC grant

By Waheed Uddin

The University of Mississippi's Center for Advanced Infrastructure Technology (CAIT) partnered with a Mississippi State University-led university consortium for a National Center for Intermodal Transportation for Economic Competitiveness (NCITEC) grant of \$6.9 million from the U.S. Department of Transportation's Research and Innovative Technology Administration (RITA). Other consortium partners included University of Denver, Louisiana State University and Hampton University in Virginia.

The theme of NCITEC is to promote the development of an integrated, economically competitive, efficient, safe, secure and sustainable national intermodal transportation network.

The overall goal of this center is to achieve economic competitiveness by integrating all transportation modes for both freight transport and passenger mobility. As a result of the CAIT partnership with MSU, from January 2012 to August 2016, the UM Department of Civil Engineering received NCITEC projects for a total grant of \$1.26 million.

Overview

During 2012-16, UM researchers conducted 13 research projects with contributions from the School of Engineering

(civil, electrical, mechanical, National Center for Computational Hydrosience and Engineering, Mississippi Mineral Resources Institute), National Center for Physical Acoustics, Meek School of Journalism and New Media, and Trent Lott Leadership Institute.

The research focused on transportation of freight and people, energy, hazardous spills reported in news media, flood risks, and studies of transportation infrastructure and bridges. The following studies were completed under all NCITEC project grants at UM (last names of key investigators shown in parentheses):

- Infrastructure funding issues and road safety evaluation (Holland, Uddin and Smith)
- Optimization of freight routes and logistics (Cao and Goggans, Uddin)
- Intermodal freight integration of highway and rail for NAFTA routes (Uddin and Victor Torres-Verdin)
- Highway and waterborne freight integration; shipping demand models (Uddin and Najjar)
- Computational modeling of flood simulation

impacts on infrastructure (Uddin and Altinakar)

- 3-D-finite element modeling of bridges and simulation of floodwater impacts (Uddin)
- Field and finite element studies of highway bridges for scouring damage (Swann and Mullen)
- Structural health monitoring of highway bridge structures (Ervin, Aranchuk, Mullen)
- Energy harvesting from vehicle-pavement vibrations (McCarty and Sharma)
- Passenger rail revival along the Mississippi Gulf Coast; technology transfer products (Uddin)
- Media framing of transportation accidents including hazardous spills (Swain) ✳



View of US 178 B-002 highway bridge and fixed base finite element model

Future of Construction

Alkhateb awarded Marshall Space Flight Center Faculty Fellowship

Hunain Alkhateb, assistant professor of civil engineering and researcher in the Nano Infrastructure Research Group at the University of Mississippi, was awarded NASA's Marshall Space Flight Center



Using in-situ resources and 3D-printing technology to construct habitats on the moon and Mars

2016 Faculty Fellowship in Huntsville, Alabama. Alkhateb is the first faculty member from Ole Miss to be selected for this fellowship.

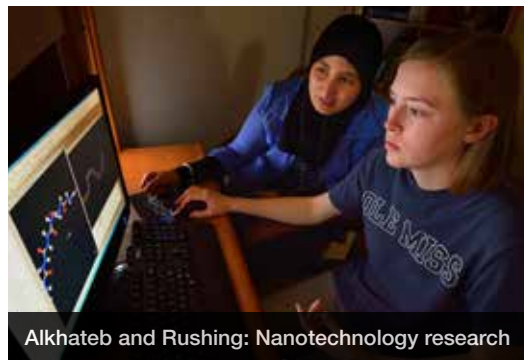
Her summer research fellowship was under the Additive Construction with Mobile Emplacement (ACME) project, which focuses on the construction of infrastructure necessary

for planetary surface missions. Alkhateb's research concentration was using in situ resources for the construction of habitat structures on the moon and Mars, which will increase the efficiency of long-duration space missions and reduce the number of payloads necessary, thus reducing cost. The additives and composite mixes that are being developed need to be optimized so they fit the ACME technology requirements, especially for the concrete additive manufacturing.

Niche in Nanotechnology

Graduate student involved in research, teaching, outreach

Grace Rushing joined the Nano Infrastructure Research Group to pursue a Ph.D. in the area of nanotechnology. Her research has been diverse and allowed her to explore graphene and graphene composites, oil shale and nanoadditives for cement. In addition, she works as a graduate instructor in the department, teaching courses such as Soil Mechanics, Structural Analysis, Introduction to Civil Engineering, and Civil Engineering Lab I and III.



Alkhateb and Rushing: Nanotechnology research

She was selected as a grant recipient by the Mississippi Space Grant Consortium in 2015 and received a renewal in 2016. This grant has allowed her to engage in STEM outreach activities with K-12 students. She works with the elementary school gifted students in Water Valley, Mississippi, and the high school's FIRST Tech Challenge robotics team, Twisted Circuits.

Priddy, Roberts Recognized

At the CE awards banquet on April 28, 2016, Lucy Priddy and Acey Roberts received the Outstanding CE Alumnus Award.



PRIDDY

Priddy (BSCE 02) graduated summa cum laude from Ole Miss. She obtained her master's degree in civil engineering in 2005 from Mississippi State University and completed her Ph.D. in civil engineering in 2014 at Virginia Tech. She serves as assistant technical director for military engineering at the U.S. Army Engineer Research and Development Center in Vicksburg, Mississippi.

Roberts (BSCE 99) is a senior engineer with Atkins Global based in Tampa, Florida. He is an industry expert on intelligent transportation systems, traffic signal systems and communication networks.



ROBERTS

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Outdoor Life

OLE MISS RUNNING BACK NOW A GEOLOGIST

By Devin Thomas

My experience as a student-athlete at the University of Mississippi was one of the most strenuous, gloomy, thrilling and rewarding periods of my life. My parents, especially my dad (who was a former collegiate athlete), told me how demanding college football would be and that I was signing a four-year contract. They were completely right.

Every day comprised meetings, practice, travel and competing, but I relished every moment. I had the opportunity to participate in three bowl games while playing for Ole Miss. I had nothing to complain about (even though I still did), because if not for football I would have never been able to travel across the country, see different towns and cities, participate in different community service events, and meet so many people from different backgrounds.

“I pursued geology as an undergraduate because it was something different, and it dared me to think outside the box.”

DEVIN THOMAS
(BSG12, MS16)

My greatest memories about football are not the back-to-back Cotton Bowls, beating Florida in “THE SWAMP,” 5 a.m. workouts, but the camaraderie with my teammates and feeling of being a part of something bigger than myself.



Devin Thomas was a running back for Ole Miss between 2008 and 2012.

Ms. Cathy Grace recruited me into the geology and geological engineering program. I attended Ms. Grace's physical geology course in the fall of my freshman year, but it was not until the following spring when I was in her historical geology course that I decided I wanted to major in geology. Ms. Grace was truly my saving grace at Ole Miss.

Going to her class every day was like going to my first day of kindergarten. She made geology exciting, and I enjoyed learning about the earth, the different geologists and how humanity affects the earth. Ms. Grace eventually became my undergraduate adviser/mother away from home, and she always led me in the right direction. If not for her, I would never have become a geologist.

The reason I enjoyed geology then and enjoy it now is because it challenges me intellectually and emotionally. Ask any geologist or geological engineer about their time as an undergraduate student and they will agree with me when I say there are a number of days when you stay up 24 hours, sometimes even two days, just to study for a test or finish a lab, but after you finish and make an A, or even a B, you feel a sense of pride and realize it was worth it.

There are also days when you're sitting in class and you have no idea what the professor is explaining, and all you can think about is, “I am going to drop this class as soon as I leave ... but I can't because I need it to graduate.” Even so, I pursued geology as an undergraduate because it was something different, and it dared me to think outside the box. It gave me the ability to be outdoors, and I was part of a great department, which made completing my undergraduate courses worth all the effort.

Continued

Lance Yarbrough joins faculty, completes circle

Life has gone full circle for Lance Yarbrough. He was a master's student in geological engineering at Ole Miss and continued on for a Ph.D. After completing his graduate work, Yarbrough moved on to become a tenured professor at the University of North Dakota, helping to build a petroleum engineering program from scratch and shepherding it through the arduous process of gaining ABET accreditation.

His research and teaching interests intersected with a boom in oil and natural gas recovery from the Bakken Formation, giving him valuable experience and contacts in the drilling and the energy industry of petroleum and mining.

He moved on to become a principal engineer of a geotechnical startup company and later as a director of geospatial products and services for Crosstek Solutions LLC, headquartered in Vicksburg, Mississippi. As a member of the leadership team, he helped the company deliver global solutions for agriculture, engineering and defense sectors, gaining additional expertise in the application of geology and geological engineering to commercial and governmental needs. Projects included unmanned aerial platforms, sensors system, and spatial data processing and visualization.

That chapter in Yarbrough's life closed when a faculty vacancy in our department opened – one that his expertise uniquely filled. He has returned to Ole Miss, bringing a wealth of experience.



YARBROUGH

Running back cont.

After graduation, I was accepted into the geology and geological engineering graduate program. My interest in my research project began because I enjoy solving problems. The problem was that oil and gas operators in Alabama were having trouble with two oil fields. They were continuing development drilling, but they kept drilling noneconomic wells, which cost them around \$2 million a well.

My thesis project was to explore the characteristics of the producing formation to determine what aspects correlated to producing versus nonproducing wells. I was able to produce maps showing the trends of porosity and permeability pinpoint locations most likely to be economically productive.

I completed my thesis, and now I work for an engineering consulting firm, Golder Associates, in the Atlanta area. I hope to gain experience leading to a project management position with-



Thomas' interest in geology grew after taking lecturer Cathy Grace's physical geology class.

in a few years. I am also continuing my education by working towards a master's degree in GIS, taken online from the University of Southern California. I haven't been away very long, but I greatly miss Ole Miss and hope to visit as often as my schedule will let me. ✨

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- Largest undergrad GE enrollment in the nation
- Senior design projects with industry-supplied problems to solve
- ABET accredited program since 1987





The computer science department is fortunate to have FNC Inc., a software technology company, in Oxford. FNC has supported the community and offers exciting opportunities to CS students for internships and full-time employment. Currently, FNC employs 22 CS graduates.

University, FNC stay connected

By Dawn Wilkins

Currently, 22 University of Mississippi computer science students and alumni work at FNC, a software technology company based in Oxford, and many more have worked there over the years and contributed to its success. One alumnus explains the company's appeal.

"Ole Miss and FNC have provided me the opportunity to pursue my passion for technology all while continuing to live in the state I love, surrounded by the people I love," said Randy Collier (BSCS 13).

FNC was founded in the mid-1990s by four faculty members from Ole Miss' business school. The company specializes

in building software systems to provide mortgage lenders with current information about residential real estate. Recently, FNC was sold to CoreLogic for \$475 million.

The work atmosphere at FNC is comparable to companies in Silicon Valley, which is appealing for CS student interns and graduates.

"The atmosphere at FNC is great!" said alumnus Robert DeCurtins (BSCS 10, MS 12). "The work is hard but fulfilling. FNC has events like the Forge, knowledge shares and 80/20 projects to give employees an avenue for self-motivated growth/creativity. If there's something you want to learn, you have the opportunity." ✨



Computer Science Outreach

In December 2016, the department hosted 29 gifted second-through-sixth-graders and their teacher Nicole Daniels from Marshall County Schools. The students visited during Computer Science Education Week, so they were treated to an introduction to programming using codecombat.com. The group also enjoyed hands-on demonstrations of virtual reality and had the opportunity to learn about 3-D printing technologies.

Marshall County students are engrossed by a 3-D printer.

Faculty Spotlight: Adam Jones



JONES

Newest professor brings energy and creativity

By Edwin Smith

As technological advances continue, the imaginary line between fiction and reality is being erased. And that's one of the reasons Adam Jones is an assistant professor at the University of Mississippi.

"Why I came here is an interesting story," said Jones, who joined the Department of Computer and Information Science's faculty in August 2015. "When I interviewed, I found that the faculty in CIS are great, super-sharp folks, the students are eager and bright, and the city of Oxford is warm and inviting. This was the perfect opportunity to give back to my home state and work with a stellar group of people."

Jones, whose research area is virtual reality and augmented reality, has taught Computer Graphics, Special Topics in Virtual Reality and Computer Programming.

"I am also starting a virtual reality lab that I'm currently calling the High Fidelity Virtual Environments Lab, or Hi5 Lab for short," Jones said.

Jones is a welcome addition to the CS department, said Dawn Wilkins, the department's chair.

"Our students are very interested in his virtual reality research, and it meshes well with the new digital media studies minor that was recently approved," she said. "Adam has quickly established a reputation as a caring and enthusiastic teacher. He definitely boosts the 'cool' factor in our department."

Before Jones came to Ole Miss, he did postdocs at the University of Southern California and Clemson University.

"We were doing experiments in VR and designing low-cost VR displays, including precursors to the Google Cardboard and Oculus Rift," he said. "One of the guys in our lab (at USC) was Palmer Luckey, who went on to found Oculus VR and spurred the recent resurgence of VR in video gaming. We were all super excited when his company was bought by Facebook for \$2 billion."

New Minor in Digital Media Studies

By Michael Newsom

The University of Mississippi will offer a new interdisciplinary minor in digital studies designed to equip undergraduate students from many different degree majors with digital computing, design and communication skills to complement their main academic focus.

The DMS minor aims to teach students basic web authoring and programming skills, how to critically evaluate digital information and also how to apply digital skills and expertise in multiple fields.

Students will take 18 credit hours, which includes 6 hours of core classes. They choose the remaining 12 hours from an approved list of options.

The minor includes four emphases from which to choose: computing, digital communications, digital arts or a generalist track. The emphases have different but connected paths of digital technology and problem-solving, according to the developers of the course.

Latest News

- Enrollment in computer science continues to increase. In fall 2016, 257 students were enrolled as B.S.C.S. majors, and 49 other students were enrolled in the B.A. in computer science, for a total of 306 undergraduate majors.
- Naeemul Hassan was hired into a tenure-track assistant professor position beginning fall 2016. Hassan recently completed his Ph.D. at University of Texas-Arlington. His areas of research include computational journalism, big data, data science, database and data mining.
- Weir 234, formerly the Linux lab, has been converted to a CS Projects lab. The purpose of the space is to support collaborative projects (e.g., software engineering), allow special courses (e.g., Robotics) to have testing space, and to have a place for students to socialize.
- The department offered an Honors section of CSci 111: Computer Science I for the first time in fall 2016. Kristi Davidson was the instructor for the course.
- Hui "Melody" Xiong and Joseph Carlisle were hired as permanent, full-time instructors beginning fall 2016. Both Xiong and Carlisle earned M.S. degrees from this department — Xiong in 2004 and Carlisle in 2014.
- Jeffrey Lucas was hired as information technology coordinator and began in December 2015.

computer science

The Department of Computer & Information Science created several new courses to support the digital media studies minor. These courses are also available to computer science majors.

ABET accredited program since 1990

The computing emphasis of the DMS minor requires students to take 18 hours

INTRODUCTION TO DIGITAL MEDIA

DMS 101

INTRODUCTION TO COMPUTATIONAL MEDIA

CSci 203

FUNDAMENTALS OF DATA SCIENCE

CSci 343

and 3 electives from:

DIGITAL DESIGN AND 3-D PRINTING

CSci 333

WEB PROGRAMMING

CSci 354

ADVANCED DATA SCIENCE

CSci 443

INFORMATION VISUALIZATION

CSci 444

IMMERSIVE MEDIA (VIRTUAL REALITY)

CSci 447

MOBILE APPLICATION DEVELOPMENT

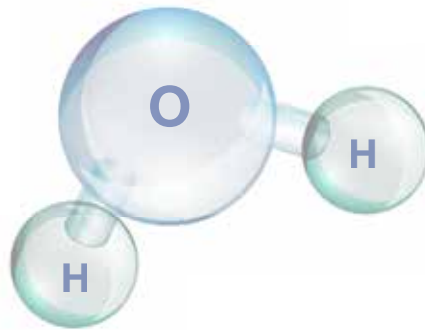
CSci 458

INTRODUCTION TO DATABASE SYSTEMS

CSci 475

DIGITAL MEDIA STUDIES PROGRAM

DMS 401



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Outstanding students, faculty and staff celebrated at banquet

**YOU ARE
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With Ole Miss Athletics Director Ross Bjork as master of ceremonies and a special focus on the successful engineering student-athlete, the 2016 Engineering Awards Banquet celebrated outstanding students, faculty and alumni with the following awards. A special video tribute was presented to honor our very dedicated student-athletes. Take a look in YouTube for "Ole Miss Engineers and Athletes."

ALUMNI AWARDS

Henry Brevard (BSCE 43)

Engineer of Service Award

John Ward (BE 80)

Engineer of Distinction

FACULTY/STAFF AWARDS

A.M. Rajendran

Outstanding Faculty Member of the Year

Adam Smith

Outstanding Faculty Service Award

Erik Hurlen

Outstanding Faculty Teaching Award

Adam Smith

Outstanding Junior Faculty Research Award

Lei Cao

Outstanding Senior Faculty Research Award

Dwight O'Dell

Outstanding Staff Award

STUDENT AWARDS

Outstanding Senior Leadership Awards

Ethan Baker (CE)

Roya Gordji (BE)

Demba Komma (EE)

Shawn Wesley Skinner (ME)

Mississippi Engineering Society Award

Shawn Wesley Skinner (ME)

David Arnold Award

Anne Marie Delee (ChE)

Taylor Medals

Anne Marie Delee (ChE)

Haley Elizabeth McFall (ChE)

Demba Bakary Komma (EE)

Travis Alexander Fortin (BE)

David Earl Rozier (ChE)

Shevanuja Theivendran (ChE)

Roya Gordji (BE)

Shawn Wesley Skinner (ME)

Graduate Achievement Awards

Kyoshin "Joel" Choo (CS)

Alharith Manasrah (CE)

Class Marshals

Tuan Quang Ta (CS)

Travis Alexander Fortin (BE)

Ethan Ryan Benton Baker (CE)



Dean Cheng congratulates Henry Brevard, recipient of the 2016 Engineer of Service Award and the longest-serving licensed professional engineer in the state of Mississippi.



Ross Bjork, master of ceremonies



Dean Cheng presents a plaque to John Ward, CEO of Everglades Boats and Engineer of Distinction award winner.



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