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OLE MISS



2017-18

ENGINEER



CONNECTIONS

UNIVERSITY OF MISSISSIPPI

BEHIND THE COVER



OLE MISS®

ENGINEERING

What's your story? Everybody has a connection story. Connections is the chosen theme for the 2017-18 issue of *Ole Miss Engineer*. If you're reading this magazine, you have a connection too!

We are pleased to present the new School of Engineering T-shirt design with a depiction of Carrier Hall, the Haley Barbour Center for Manufacturing Excellence, Brevard Hall, Anderson Hall and Weir Hall – buildings familiar and fondly remembered by alumni and friends.

Shown below are students, wearing the brand-new shirts, from the Madison Central High School Academy of Engineering. They were awarded credit for their first Ole Miss engineering course, Intro to Engineering (ENGR 100), in fall 2017. More information about this exciting new partnership between schools will be coming soon ...



T-shirts are available for purchase through JCG Inc. Proceeds will support School of Engineering undergraduate student organizations as the school continues to build connections through experiential learning opportunities beyond the classroom. A few of the school's many student organizations are highlighted throughout this magazine.

Share your engineering connection!

To order:

- Visit jcgstore.com and choose "The University of Mississippi"
- Then select "Engineering"
- Use the password **engineer** to access the design and place order

We expect to ship T-shirts within three weeks of your order and hope to continue printing shirts as long as there is interest. Although our Ole Miss Engineering connections are all over the world, we can only ship domestically. Available sizes include small, medium, large, XL and XXL in blue Comfort Colors brand shirts. The cost is \$25 each plus tax (shipping is free).

Hope you enjoy the magazine ... and the T-shirt!

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ALEXANDER CHENG
Dean of Engineering

Dear Alumni and Friends,

It is my great pleasure to present to you another issue of *Ole Miss Engineer*. The featured theme of this issue is Ole Miss connections.

Have you ever met and chatted with people from Ole Miss on an intercontinental flight or overseas? Have you overheard somebody talking loudly about Ole Miss football at a restaurant in another town besides Oxford? Bumped into a classmate in another city? Worked in a high-tech company and found that one of your colleagues is from the same small town in Mississippi? These were some of the stories told by our alumni. I am sure that many of you have had similar experiences. These encounters were surprising, yet not surprising: Ole Miss connections reach far!

This communication will be my last with you in my capacity as dean. I would like to use this opportunity to give an overview of the engineering faculty and staff's success in raising the bar of education at our school in the past eight years.

Our success is built upon history and tradition. For over a century, the Ole Miss engineering school has delivered a broad-based education to numerous graduates through small classes and close faculty-student mentoring relationships. Such an educational philosophy may not have caught national attention, but certainly it has ensured the success of our graduates. Now, in the 21st century, national leaders in engineering and technology have recognized the value of such an education and are calling for future engineers to be broadly educated.

What has changed? Well, the world is changing, and at an ever-increasing rate! For example, we all know that the smartphone and its apps have become an inseparable part of our daily lives. Is it possible to go back to the days without a smartphone? How long ago was that "Stone Age?" Fifty years? One generation? No, it was just 10 years ago.

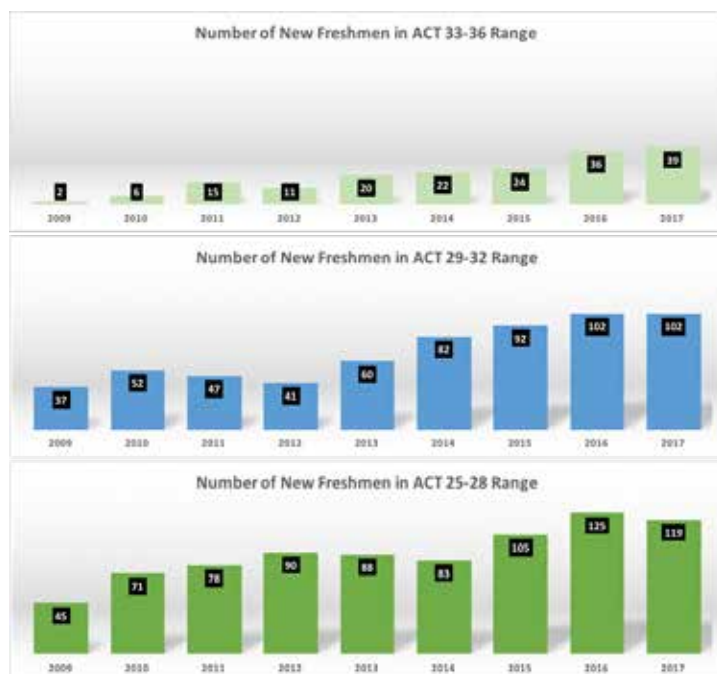
According to Wikipedia, on Jan. 9, 2007, Steve Jobs announced the iPhone at the Macworld convention, receiving substantial media attention. Jobs announced that the first iPhone would be released later that year. On June 29, 2007, the first iPhone was released. How much has the world changed in 10 years? What lies ahead 10 years from now? How do we educate students to become future engineers for innovations we don't yet know about?

We cannot teach our students every technical skill needed in the future, but we can teach them how to think and how to learn. In other words, we build the technical education on the foundation of a liberal arts education. We teach them to think analytically, to conduct lifelong learning, to see technology through its human dimension, to communicate effectively, to function in a multidisciplinary team, to lead, to have a social conscience, and to be innovative and entrepreneurial minded.

A broad education is one anchor. We also tie our education to a second anchor – experiential learning. Our students learn through experience, that is, they learn by "doing." They enhance their education beyond the classroom. They are engaged in co-op, internships, undergraduate research, study abroad, Study USA, community service, service learning, Engineers Without Borders, ROTC, varsity sports, student organizations, extracurricular activities, business plan competitions and entrepreneurship.

We also do not define and nurture our students along the traditional profession lines. They can use their engineering education to launch careers in law, medicine and business. They can use their talent and imagination to create their own profession.

The educational philosophy we promote seems to be catching on with the younger generation. In the past eight years, we have seen tremendous growth in enrollment. Particularly we have attracted the sharp and ambitious students. The chart on this page shows



Alex Cheng, Tableau Software

the number of freshmen in nine years sorted into three ACT score ranges. We observe that there is a nearly 20-fold growth in the ACT 33-36 range. These students qualify for any elite program in the nation, and they entrusted their education to us. It is our responsibility to provide them with a challenging education to be worthy of their trust.

Our students have excelled. In 2009, chemical engineering students won first place in the American Institute of Chemical Engineers' Student Design Team Competition. In 2011, they were second in the nation.

In 2017, two mechanical engineering robotics teams finished in first and second place in the American Society of Mechanical Engineers' East Regional Competition. In the subsequent international competition, these two teams finished second and third in the world (first and second U.S. finish).

Individually, two students won the Barry Goldwater Scholarship, one received a Fulbright Scholarship, one student won a Gates Cambridge Scholarship, one made it to the final round of the Rhodes Scholar selection, and another was a Tau Beta Pi (national engineering honor society) laureate. Our Engineers Without Borders chapter has completed two projects in the West Africa nation of Togo and is starting a new project in 25 de Diciembre in Ecuador. We are proud of them!

Best wishes,



ALEX CHENG



SCHOOL OF ENGINEERING

UNIVERSITY OF MISSISSIPPI | 1900

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Reflections and Connections

In the words of wise King Solomon, "For everything there is a season, and a time for every matter under heaven."

After receiving word that Alex Cheng will be leaving his leadership post as dean in the School of Engineering (but will continue his tenure as professor of civil engineering), I would like to say that working under him in the Engineering Dean's Office the past eight years has allowed me the privilege of being part of a tremendous season in the School of Engineering.

Under Dean Cheng's leadership, fruits of our labor have been bountiful in many fields including undergraduate enrollment, student achievement, career opportunities for our graduates, and alumni support. When I decided to move from practicing engineering to the academic side in 2004, I realized I had the opportunity to join a team of professionals that was truly passionate about not just teaching engineering but making engineers. I now know it was an excellent decision because I have had the experience of learning from a great mentor and friend, Alex.

I don't yet know who will take Dean Cheng's place, but I do know the school's future is bright and we have much to build upon. This school feels like family to me, so I hope you don't mind if I use a familiar metaphor.

In men's pole vault, records of achievement are celebrated; they do not get erased, and they never go lower. Pole vault records only go up (literally).

Applying that analogy gives me confidence that the next dean of the School of Engineering will begin with an excellent track record already in place. With appreciation for our past successes and continued support of faculty, staff, students, alumni and friends, we can use our collective momentum to clear that next bar together.

The thing I love about men's pole vault is that it is truly a gentleman's sport. Athletes are really competing against themselves (and gravity!), trying everything they can possibly

do to improve. Track fans and athletes alike cheer for the next athlete in the lineup, hoping he achieves success as well. When the next engineering dean steps up next fall, let's get the track-side clap going and support him or her.

Stay tuned for the next chapter in the School of Engineering. I know it will be great because it was founded with a strong mission and good people have invested in it for 118 years now. Ole Miss Engineering connections have been made around the world across generations, cultures, disciplines, genders and career paths. It is fascinating to see how far and wide connections have gone from this very special place on the Circle at the University of Mississippi.

The Ole Miss Engineering connection, through alumni, faculty, staff, students, prospective students, friends and family members, is more than a common thread of similar experiences in Oxford, Mississippi. It is a brilliant, beautiful network of energy and light that traverses around the globe.

As a fellow alum and stakeholder in this extraordinary school, thank you sincerely for keeping your Ole Miss Engineering connection strong! If I may assist you in your goals or plans to support the school, please contact me at marni@olemiss.edu or call the University of Mississippi Foundation at 662-915-7601. It would be my privilege to get to connect or reconnect with members of our Ole Miss Engineering family.

With appreciation for your connection and support, and for the last eight, great years in the School of Engineering,



MARNI KENDRICKS, Assistant Dean

Kendricks' son, Sam, won the bronze medal at the Olympics in 2016 and the gold medal at the World Championship in 2017 in men's pole vault.

The Ole Miss Connection

UNIVERSITY OF MISSISSIPPI AFFILIATION
MAKES FRIENDS OF STRANGERS

By Bill Dabney

No one can put a finger on it. What is it about the University of Mississippi that forms a connection between people? Regardless of class year, field of study or hometown, students, faculty, staff, alumni and friends of the university feel as if they're all part of the same family.

Maybe the bond forms from the freedom of being on one's own, but together with hundreds of others who've had a similar experience.

Maybe the interpersonal connection stems from having something in common, such as an appreciation for the beautiful campus or good memories of the big college with the small-town feel.

Maybe it's smaller class sizes or more individualized attention from professors. Maybe it's meeting someone in the Grove and then seeing that person in class and later at the gym. Maybe it's a shared sense of pride in the university's outstanding programs or sports teams.

Maybe it's the feeling that Ole Miss is home.

Mention the Ole Miss connection to anyone associated with the university and they'll admit that, though difficult to define, the phenomenon exists nonetheless.

Take, for example, Spero Peters, a 2010 mechanical engineering graduate from Germantown, Tennessee, who now works as a field engineer for the Bechtel Corp. based in Washington, D.C.

Peters regularly checks in with freshman chemical engineering major Blake Mexic and his mom, Jeanne Dees, both of McLean, Virginia, whom he met after being randomly booked between them on a flight – three strangers until they discovered an Ole Miss connection.

"Blake's mom and I were chatting about what I do, and I said, 'I'm an engineer working with nuclear power plants,' and she said, 'Oh, my son's actually really interested in that.' And Blake, who was in high school at the time, popped his head up and said, 'Yeah, I am. That is really cool,'" Peters said. "So we talked for most of the flight, and later, when we were all back in D.C., they had me over to the house, and we had dinner and watched some football."

Mexic, who had visited Ole Miss in ninth grade for a football game, thought he might like to go to college there one day; after meeting Peters, he knew it.

"I was already in love with the campus. Let's be real here: There's nothing like tailgating in the Grove at Ole Miss," Mexic said. "Then I met Spero, and he was telling me all about the engineering



School of Engineering alumnus Spero Peters and student Blake Mexic discovered an Ole Miss connection when they were randomly seated next to each other on a flight. Photo by Bill Dabney



program here, and I knew I wanted to do something with engineering and numbers. That's where I'm best. I was like, 'I can definitely see myself at Ole Miss.' I love it here. I'm so happy."

Working for Bechtel for the past six years, Peters has been involved with mechanical systems design, computer modeling of radiation transport through facilities and the installation of safety systems for nuclear reactors. His most recent project will turn nuclear waste into molten glass that will solidify for safe disposal.

"A lot of times, the facility that I work on is as big as building Vaught-Hemingway with mechanical systems inside of it," Peters said. "The complexity of that is always stimulating."

Mexic finds the prospect of such work fascinating.

"I want to go into nuclear engineering just like Spero," he said. "I want to go into development of nuclear energy for the U.S. Navy, researching alternative power sources with fuel rods as opposed to what we're using now. I know chemical engineering will be a good stepping-stone for that."

"I would love to have the chance to work with Spero, miniaturizing reactors and making everything more efficient energywise and sizewise," he continued. "I'm really excited for what the future holds right now."

Thanks to his Ole Miss connection, Mexic's dream may be at least one step closer to reality.

"I can definitely see us working together at some point," Peters said. "If he winds up in the nuclear industry, I'd say there's a high chance we'll cross paths in the future."

Global Connection

Speaking of crossing paths, Nathan Snyder of Superior, Colorado, tells an interesting story.

"Soon after my wife and I moved here, we had dinner at a local brew pub on the patio. As we reached the door, someone in a group at a table in the far corner was having a conversation and loudly said, 'Can I get an 'Are You Ready?'" I overheard it and yelled out the rest of 'Hotty Toddy' to

stares from everyone on the patio," said Snyder, who earned three degrees from Ole Miss including a master's degree in geological engineering in 2011.

Making his way across the room, Snyder discovered the instigator to be former Ole Miss quarterback Russ Shows of Oxford, Mississippi, his wife and a group of their friends.

"We joined them for a few more beers, shared our Colorado stories and relived our glory days at Ole Miss from the early '90s," Snyder said. "What a great treat when you are so far from home!"

Stephen Edge, School of Engineering alumnus and former Engineering Advisory Board member, shared a similar story — making a connection while making a connection, so to speak.

In 2012, when Engineers Without Borders (EWB) took its first trip to Togo, Africa, for a service mission, the team included a number of professors and students wearing Ole Miss apparel while waiting in the Atlanta airport to board a connecting flight to Paris. Of course, the familiar reds, blues and logos of Edge's beloved Ole Miss naturally



The Ole Miss connection between Mustafâ Altınakar and Cris Surbeck spans the globe. Photo by Bill Dabney

caught his eye. Making a beeline to the group, he quickly formed a bond.

"I first recognized Marni Kendricks (assistant dean for undergraduate academics) from my service on the Engineering Advisory Board. She introduced me to the students on the trip, and I was impressed by the enthusiasm of the team and their knowledge of the task at hand," Edge said.

"Also the opportunity to speak with Dr. Cris Surbeck (associate professor of civil engineering) was an enriching experience. I found that she exhibited the traits that alumni and students appreciate in a professor: passion for their work, interest in students and the ability to effectively engage and impact the people she interacts with. I know the team was in good hands with Marni and Dr. Surbeck at the helm."

On the same trip but on the next leg from Paris to Lomé, Togo, Kendricks and Surbeck made an additional Ole Miss connection that turned out to be even deeper than they first imagined.

"We were talking about the trip and what we were doing, and the person across the aisle from me overheard us and said, 'Are you from Ole Miss?'" Surbeck said. "She was a Togolese woman who had been a graduate student at Ole Miss."

Ami Kponvi Moore earned a master's degree in sociology at Ole Miss in 2004. After graduating, she became a professor at the University of North Texas. Her trip to visit family in Togo just happened to place her on the same flight as — and next to — these members of the Ole Miss EWB team. Several years later, Surbeck was able to reconnect Moore with one of her graduate school friends, Albert Nylander, now director of the McLean Institute for Public Service and Community Engagement at Ole Miss.

"Albert and I got to talking about Engineers Without Borders, and I told him the story, and he said, 'Ami? I know Ami!' They had lost track of each other," she said. "They had been friends, so they got reconnected after that."

The adage, "It's a small world," is perhaps nowhere more accurate than at the University of Mississippi; Ole Miss somehow takes a great, big world and shrinks it. Surbeck said she experienced the phenomenon one other time, in 1995, when she was a college student



For Adam Smith (right), an initially rocky Ole Miss connection with David Carroll has become one of his most valued. Photo by Bill Dabney

working as a summer intern for an engineering consulting firm in Switzerland.

"One day, in my second or third week, there I was on the train on the way to work, and this man came up to me and said, 'Hey, aren't you the new intern that we have in our office?' and so we got to talking, and he was very, very kind," Surbeck said. "This was in the French-speaking part of Switzerland, and my French was OK, but he saw that I was struggling a little bit, so he switched to English and it was so comforting."

The man on the train was Mustafa Altinakar, who is now a professor and director of the National Center for Computational Hydroscience and Engineering at Ole Miss.

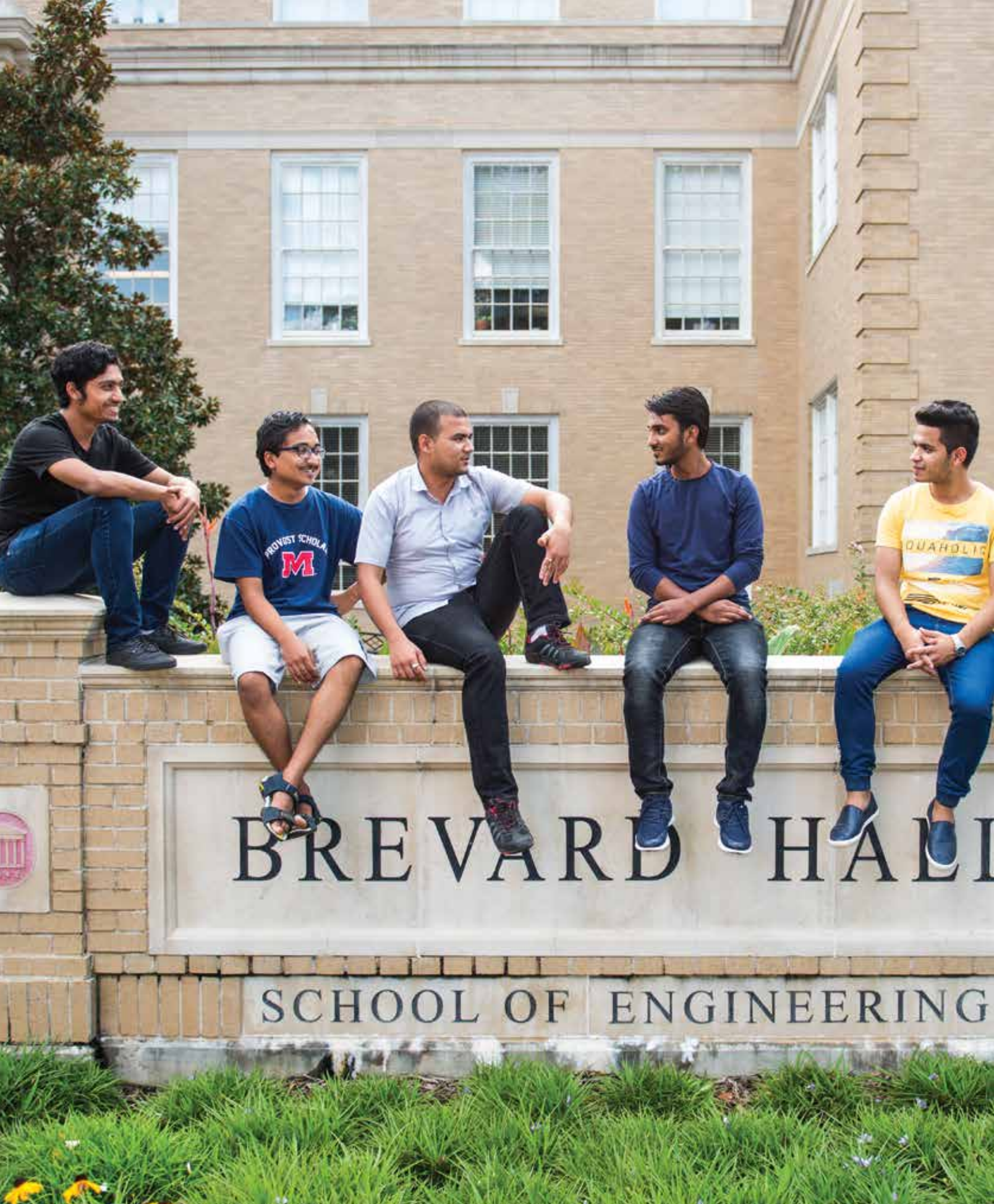
"He put me on one of his projects — a study on the Rhône River in Switzerland and how the river's water level would be affected by a new hydroelectric power plant — and it was great working with him," Surbeck said. "I was there for just the summer, so it was very brief. Then in 2001, I was back in the

U.S. at a conference in Orlando, listening to a speaker, and the man next to me asked a question, and I thought, 'I know that voice.' It was Mustafa.

"So afterwards, I went up to him and he remembered me," Surbeck said. "We talked for a few minutes that day and reminisced about Switzerland. He gave me his card, and that was that," she said. "In 2007, I was finishing my Ph.D. and applying for professor positions around the country, and I decided to apply to Ole Miss. Now, I've been at Ole Miss for 10 years, and we've worked together all that time."

Fateful Connection

David Carroll, an adjunct instructor in chemical engineering, and Adam Smith, assistant professor of chemical engineering, share a similar experience. The two work together every day; their offices are rooms 135 and 136,



An increasingly stronger connection between the University of Mississippi and the country of Nepal has resulted in more than 70 Nepalese students enrolled for the 2017-18 academic year. Enjoying some free time outside the School of Engineering are, from left, Ayush Dhital, Soujanya Pratap Niroula, Anurag Dhungel, Bibek Gupta, Nischal Timalsina and Aakash Upadhaya. Photo by Bill Dabney



respectively, in Anderson Hall, and they're the best of friends – a connection Smith said he never would have imagined when he first met Carroll years ago.

In 2003, Carroll was an employee with ExxonMobil and was involved with the company's recruiting process. The same year, Smith realized that his dream job would be working in the petrochemical industry. He thought ExxonMobil would be a perfect fit, and it just so happened that Carroll, then a member of the School of Engineering Advisory Board, was in town on one of his many visits to campus as ExxonMobil's campus recruiting lead for Ole Miss.

"I met with David very briefly," Smith said. "It was not really an interview, just sort of a consultation I suppose. He basically said if I wanted to do research for his company, there was no way of getting there with just a master's degree, so I needed to go get a Ph.D. But the way I like to remember the story is that David told me, 'No. You can't have a job.'"

In his defense, Carroll said his advice to Smith was nothing personal; ExxonMobil researchers simply have to have the right credentials, specifically a Ph.D. and an interest in an area of research that would benefit the company.

"At the annual AIChE conference, ExxonMobil hosted all the Ph.D.s from around the country at an informal refreshment suite each day of the conference. We would get to know them and find out which one's research and interests fit best with what we were trying to accomplish," Carroll said. "So what I told Adam is something that I said to students many times."

The next time Smith saw Carroll was 12 years later. By then, Smith had taken Carroll's advice, earned a Ph.D. at Virginia Tech before joining the University of Mississippi faculty.

"You're the guy who told me 'no,'" Smith said at their reintroduction. But now, "I will say that even though I kid David about turning me down ..."

"And ruining his life ..." Carroll joked.

"It was actually the best thing that ever happened to me," Smith continued. "His telling me 'no' set the trajectory for me getting back here to be a faculty member, which as it turns out is my dream job."

Nepal Connection

It seems all roads lead to Ole Miss – a statement that is especially true for an ever-growing contingent of students from Nepal.

The country of Nepal, located just northeast of India, is half a world away from Mississippi. Traveling to Oxford from Nepal takes 30 hours. Yet an increasing number of Nepalese students are making their way to Ole Miss each year – more than 50 in the 2017 freshman class alone.

Sophomore mechanical engineering major Ayush Dhital of Itahari, Nepal, said he believes the number continues to increase because of the connection, or network, between "brothers" (friends) who have attended Ole Miss and then returned home to encourage others to follow their lead.

"I had two older brothers who were studying the same major, mechanical engineering," Dhital said. "I didn't want to stay in Nepal because of the lack of practical knowledge there. If you want to go into the engineering field, you have to have a lot of practical knowledge because the theoretical part is not enough. So I contacted them and they taught me all the processes for applying to the university, and I got a good scholarship, so that's how I ended up here."

Likewise, "I knew the school because a lot of my friends and classmates were already freshmen over here," said Soujanya Pratap Niroula, a freshman computer science major from Kathmandu, the capital city of Nepal, who said he was attracted to Ole Miss because it offers more opportunities for internships and hands-on training than Nepalese universities.

In addition to scholarships and practical knowledge, Nepalese students said they come to Ole Miss for the broader education offered by a school of engineering based on a liberal arts campus.

"We get to not just learn engineering, but I've taken economics and philosophy classes," Dhital said. "So that's really nice for me because if I studied back in Nepal and I was an engineering major, I would never get to know about philosophy or religion."

Freshman electrical engineering major Anurag Dhungel of Dhulabari Jhapa agreed.

"Back in Nepal, if I was in mechanical engineering and another student was

in mechanical engineering, we would always be in the same class. But that's not the case here. Here, I study alongside English majors in my Writing 101 class and alongside computer science majors in my computer science classes, even though those aren't my majors. So that makes the education quite competitive and rigorous, I think. The curriculum is not only for the major but for all the students."

Dhungel said the opportunity to minor in mechanical engineering while receiving hands-on experience at the Haley Barbour Center for Manufacturing Excellence attracted him to Ole Miss.

"I can experience both the fields and decide which is the best fit for me," said Dhungel, who also was encouraged to consider the University of Mississippi by the "brothers" who came before him.

Geological Engineering Connection

Like the Nepalese students, Kyle Staude of Clearwater, Florida, also has a band of brothers — a group of friends who connected in their undergraduate years and then carried their combined strengths into graduate school, the workforce and beyond.

"I guess the point in time that we really bonded was after we went to field camp, which is the class you take for geological engineering the summer before your senior year," said Staude of his friends

“**Whether we’ve been in the oil and gas industry or working on something else in our free time, that connection has always been there.**”

”
KYLE STAUDE

Austen Cain of Ringgold, Georgia; David Hankins of Shreveport, Louisiana; Mohsin Hussain of Richmond, Texas; Tim Mannon of Lafayette, Louisiana; and Paul Robinson of Lookout Mountain, Tennessee — all geological engineering graduates from class years 2010 to 2012.

"Even during my senior year, we were just always in the lab together and around each other a lot; that's really when we became good friends beyond just classmates," Staude said.

He said five of the friends went to graduate school together at the University of Louisiana at Lafayette to earn a master's degree in petroleum engineering, and all six ended up working in the oil industry.

Now the friends are working together to develop a subscription-based ridesharing service for college students. With plans to launch EZ-Rydr in Oxford, the service will offer students



Tina and Nathan Snyder, who live in Superior, Colorado, are seen here at Camping World Stadium, Orlando, Florida, in 2016. Submitted photo

unlimited rides within a certain radius of campus.

"Whether we've been in the oil and gas industry or working on something else in our free time," Staude said, "that connection has always been there." ✨

Tau Beta Pi

"Tau Beta Pi has been very active this (fall) semester! We just welcomed a total of 34 new initiates this past November to add to our pool of 39 current members. Additionally, Tau Beta Pi has been involved in community service, supporting both the Ole Miss Food Bank and the Oxford-Lafayette Humane Society. We also hosted the School of Engineering tent for the Arkansas game, where we had a lot of fun serving and interacting with engineering alumni. Next semester, we are planning to host another initiation event and continue our commitment to community service." — Harleigh Huggins, senior, mechanical engineering, TBP president





Paul Tobin Maginnis

University Community Mourns Paul Tobin Maginnis

RETIRED PROFESSOR, CHAIR HELPED BUILD COMPUTER SCIENCE DEPARTMENT

By Edwin Smith

Paul Tobin Maginnis, a professor emeritus who served as interim chair and helped build the Department of Computer and Information Science at the University of Mississippi, died June 14 at Baptist Memorial Hospital-North Mississippi in Oxford. He was 70.

Former colleagues and students reflected upon their relationships with Maginnis.

"Tobin will be missed by all of us, including the thousands of students he taught during his 36 years as an Ole Miss faculty member," said Conrad Cunningham, former chair and professor of computer and information science and longtime friend of Maginnis. "Tobin's dedication to the students and to computer science education and research – and his pro-student attitude – helped attract me to the faculty."

Harley Garrett Jr. of Oxford, a retired Air Force officer with a second career in industry and a third with Global Technical Systems, recalled meeting Maginnis through work between 2003 and 2004. Though Garrett was 65 at the time, he credited Maginnis with having taught him "a lot – about a lot."

"I have been blessed with three careers and have known many people in my life," he said. "Out of that population, there are a few whose personality, professionalism and enjoyment of helping others can match Tobin's."

"We shared moments of discussion on a myriad of topics, even though our professional focus was on the application of computer science in the hands of skilled students."

Garrett said Maginnis' love of life, passion for understanding things he was interested in, and kindness and generosity toward others are what he remembers most.

"He was also a gifted teacher whose gift transcended all of his endeavors, not just computer science," he said.

Yi Liu, another former student of Maginnis' and associate professor of computer science at South Dakota State University, remembered him as "a nice person."

"I took two classes from him, and he was my mentor in teaching the computer organization class," she said. "I learned from him, and I respected him."

"The last time I saw him was at the ACMSE conference at Ole Miss back in 2010. He gave me a hug. I wish I had spent more time talking to him."

Bill Taylor, vice president of information technology at FNB Oxford, credited Maginnis with jump-starting his professional career.

"During my first meeting with him, he encouraged me to ask Dr. Cook for a job in the CS department," Taylor said. "He said, 'We have never hired a freshman before, but I think you are going to be the first.' He was right."

"Then, right before Christmas break, he told me that when I came back in January, he wanted to talk to me about an opportunity to help get the first Linux certification program going. My professional career started when Dr. Maginnis recommended me for a local IT position."

Born in Baltimore to the late Paul Tobin "PT" Maginnis and Emily Maginnis Robishaw, Maginnis began working at the university in 1979. He created and taught an extensive array of undergraduate and graduate courses on operating systems, networks and computer architecture. His hard work, long hours and innovative ideas helped shape the identity of computer science education at Ole Miss.

"He taught, advised and supervised many graduate and undergraduate students," Cunningham said. "The students recognized and appreciated the passion that he brought to his position."

Maginnis believed in academic integrity and would go to great lengths to preserve it, said Pam Lawhead, professor emeritus of computer and information science.

"He was fair to a flaw but would not stand for or support any breach of academic integrity," Lawhead said.

Maginnis' roles evolved over the years, said Jimmy Palmer, information technology coordinator at UM's Haley Barbour Center for Manufacturing Excellence.

"Early on, I thought of him as a mentor and teacher," Palmer said. "A little later, I thought of him as an employer and leader. In more recent years, I thought of him as a colleague and friend."

Palmer said Maginnis saw something in him that he did not see in himself.

"He trusted me and gave me responsibilities that made me grow as a person and an engineer," Palmer said. "He asked me to work for him and gave me my first real job in my IT career. I will always be grateful for my relationship with Tobin." ✨



Ahmed Al-Ostaz and some of his undergraduate researchers discussing graphene related topics

The Next Big Thing

UM ESTABLISHES CENTER FOR GRAPHENE RESEARCH AND INNOVATION

By Lisa Stone (Photos by Hunain Alkhateb, Center for Graphene Research and Innovation)



Oxidized graphene nanoplatelets as seen under an atomic force microscope

The University of Mississippi has established a new center to advance translational science and engineering of graphene-based technologies. The Center for Graphene Research and Innovation was officially established Oct. 19, with approval from the Board of Trustees of State Institutions of Higher Learning.

The new center will focus on bridging the gap between university-based science and discovery and industry-led innovations and applications for graphene, a form of carbon made of a single layer of atoms. First isolated and described by scientists in 2004, the material is incredibly strong and flexible, and its conductivity lends it to a broad range of applications ranging from manufacturing to electronics to medicine.

Establishing the center aligns with UM's status as a Carnegie R1 highest research activity institution and the growth of research in graphene and related nanostructure materials at the university over the last decade, Chancellor Jeffrey Vitter said.

"The Center for Graphene Research and Innovation will serve as a hub

connecting research activities across multiple disciplines and departments and will propel the university forward in this field," Vitter said.

Graphene is heralded for having significant growth potential across a number of market segments. It is 200 times stronger than steel and more conductive than silicon. Another notable property is flexibility, which allows it to be pulled and curved to a certain extent without breaking.

Graphene makes solar cells 50 to 100 times more efficient, semiconductors 50 to 100 times faster, aircraft 70 percent lighter and composites more multifunctional.

"Graphene is one of the strongest materials known," said Alex Cheng, dean of the UM School of Engineering. "It also has superior thermal, electric, electromagnetic and even antibacterial properties.

"The wide range of applications will greatly impact technology and spur innovators to develop new products and processes."

During the past few years, graphene-related research conducted at UM has included computational physical chemistry; photovoltaic solar cells; drug,

protein and gene delivery; electromagnetic applications, including perfect absorbers, high-impedance surfaces, subwavelength imaging, hyperlenses, plasmonic waveguides, cloaking/invisibility and reduction of interference in antennas; and nanocomposites for defense, homeland security, aerospace and structural application.

While graphene has a number of applications, initial sectors to be targeted by the center include energy, electronics, biomedical and structural, said Ahmed Al-Ostaz, director of the Center for Graphene Research and Innovation and professor of civil engineering.

"Graphene offers many potential applications, such as reinforcement in composites, energy conversion and storage, thermal conductors, electronics, anticorrosion coatings and paints, and drug and gene delivery to human diseases and medical devices," Al-Ostaz said.

The center will partner with a number of public and private entities, including the Oxford-based National Graphene Association. The association provides a networking and information platform to expedite the integration of graphene into the commercial arena. ✨

UM chapter of Engineers Without Borders builds infrastructure

The University of Mississippi's Engineers Without Borders chapter has been busy with ambitious projects. Over the past year, it has taken a major leap forward in expanding its operational capability, organizational structure, membership count and overall activity level.

A new 12-officer structure has been implemented, the number of active members has increased from roughly 10 to 50, and committees for fundraising, outreach, marketing and design have been created.

On the marketing front, chapter social media accounts have been created or updated, and a



brand new chapter website has been rolled out at ewb.olemiss.edu.

General chapter meetings occur every other week, with supplemental officer and committee meetings taking place one to four times per month. At one general meeting, the chapter invited David Carroll, a former Exxon recruiter and Ole Miss chemical engineering professor, to present members with valuable career and resume-building advice.

EWB has also aimed to evolve from purely work based to fun and inclusive. Members play games at the end of general meetings, and the chapter hosts a members' bowling night and several officer retreats.

EWB has successfully carried out bake sales and T-shirt sales, which, combined with new member dues, have raised more than \$2,000 over the course of the fall semester. Those proceeds have been reinvested into the chapter to support operational expenses and future projects.

While the chapter is aiming to break ground on some domestic projects in the spring semester, the main focus of EWB Ole Miss has long been a village in Togo, Africa. In 2007, EWB Ole Miss made a five- to 10-year commitment to aid the Hedome Village of Togo. Since that commitment was made, the chapter has built

a sturdy two-room schoolhouse (completed in 2014) and drilled a desperately needed 250-meter deep-water well (completed in 2017).

The schoolhouse contains three classrooms that hold about 40 students each, and the well provides clean drinking water for 20,000 Togolese citizens. The well also creates a vital freshwater source for a recently constructed children's hospital in the area.

The plan had been to start a third project of building a community tap stand in Togo; however, due to an unstable political climate, that plan has been tabled indefinitely. Looking forward, EWB Ole Miss has begun the process of adopting an Ecuadorian community in need of a clean water source.

During the fall 2017 semester, chapter officers and members made various trips to locations in the Midwest and the South to visit donors and partners, and to attend the 2017 national EWB conference.

Chapter officers and advisers recently visited Hospital Sisters Mission Outreach in Springfield, Illinois, which compiled and shipped two 40-foot containers full of donated medical equipment to the new children's hospital in Togo. As the Rotary Club provided a \$100,000 grant for the drilling of the Togo well, EWB personnel recently presented the

status of Togo to the Oxford, Mississippi, and Cleveland, Tennessee, Rotary chapters.

"The chapter is thankful for the supportive School of Engineering at Ole Miss, selfless chapter faculty advisers, committed student officers, generous donors and everyone who has been instrumental in helping EWB reach its goals and carry out its mission of humanitarian development." – David Thomas, senior, mechanical engineering, EWB president



Institute of Transportation Engineers

The student chapter of the Institute of Transportation Engineers, or ITE, hosted guest lectures in fall 2017. By invitation of chapter adviser Waheed Uddin, in October, professor Eric Bescher, from the materials science department, and Mike McNemey, a research professor of civil engineering from the University of Texas at Arlington, presented "Airport Concrete Pavement Design and Construction Improvement Using High Strength Cement." In addition, professor João Virgilio Merighi from the Instituto Federal de Educação, Ciência e Tecnologia

de São Paulo, presented "Multimodal Freight Transportation Operations for Sustainable Mining in Amazon and Airfield Safety Hazards."

ITE plans to attend the Traffic Bowl Competition in spring 2018 in Minnesota during which ITE members from across the nation come together and put their knowledge of transportation planning and engineering topics to the test. The Ole Miss ITE chapter will once again be well represented. Wish us luck! – Lexi Thompson, senior, civil engineering, ITE president

The Mysterious Sand Dollar

UM PROFESSORS COLLABORATE INTERNATIONALLY ON STUDYING THIS SEA CREATURE

Story and photos by Louis Zachos



James Nebelsick examines Eocene sand dollars at Techeva Creek, Yazoo County, Mississippi.

Who would associate a lowly sea urchin with state-of-the-art analysis in biology and

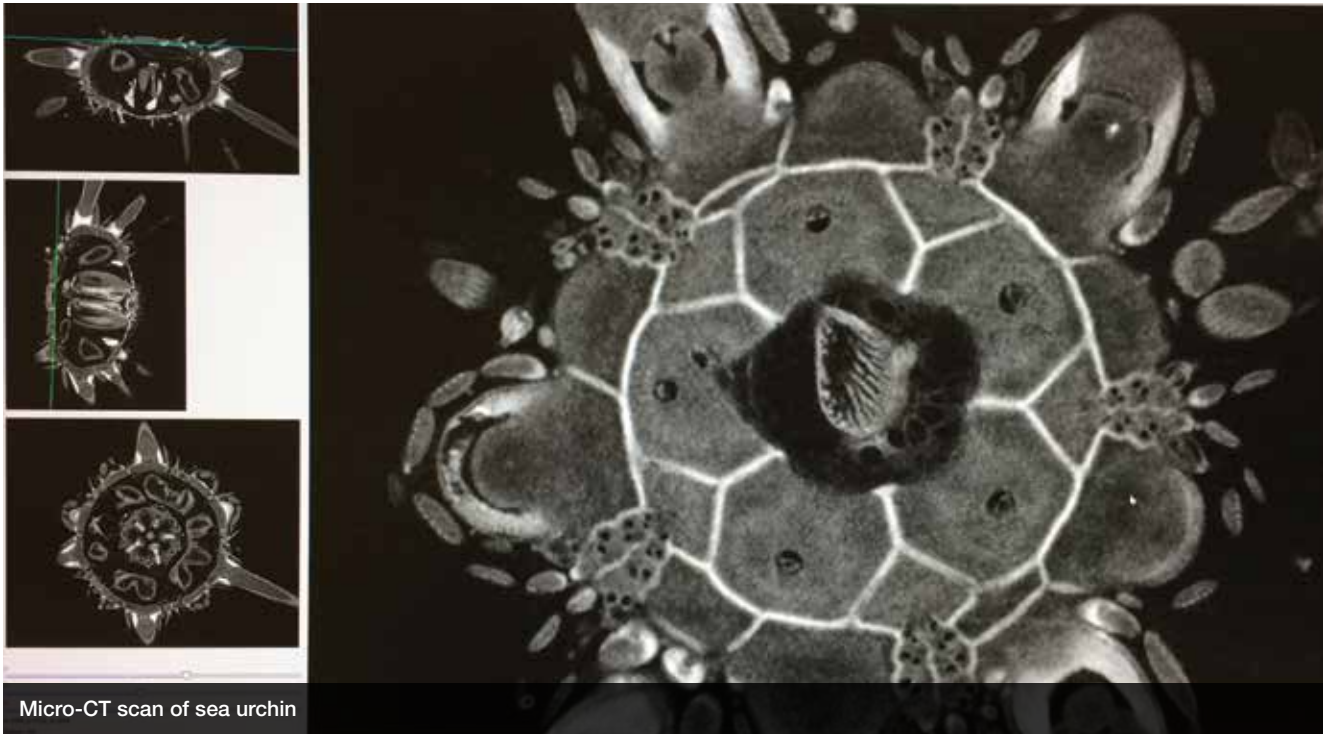
engineering? Yet this is exactly what I have been busying myself with over the past year. I met with Dr. James Nebelsick of the University of Tübingen, Germany, at last year's Geological Society of America meeting in Denver and arranged for some fieldwork over this past spring break. We collected fossil sand dollars from outcrops in Yazoo and Clarke counties, Mississippi, as part of an ongoing global study of mass accumulations of these organisms, their taphonomy and paleoecological significance.

Dr. Nebelsick is also working with a consortium of German universities studying biomimetics, which is the study of biological materials and processes and their application to engineering and architectural design. I received an invitation from Dr. Nebelsick to be a guest speaker at a biomimetics colloquium in Tübingen in early September on the processes of growth in sea urchins, sand dollars and their related kin.

Over the summer, I met with another German colleague, Dr. Alexander Ziegler, at the North American Echinoderm Conference in Worcester, Massachusetts. Following the meeting, we spent several days in Maine collecting living sand dollars from coastal areas along the Bay of Fundy.

Dr. Ziegler was interested in a particular size range of these sand dollars, which necessitated collecting in heavy fog at 2 a.m. to catch the tide at its lowest point (tide range is as much as 24 feet from low to high tide).

These specimens were then prepared in the field for later tissue study with a transmission electron microscope, or TEM. Dr. Ziegler and I are collaborating on a study of the diverticulum found in some groups of sand dollars. The diverticulum is an organ attached to the



Micro-CT scan of sea urchin

digestive tract and used by the animals to store grains of sediment. The purpose of this is not understood, but the animals selectively ingest heavy minerals from the sediment, including so much magnetite that they can be picked up with a magnet.

While in Germany for the seminar in Tübingen, I stopped in Bonn for a few days to meet with Dr. Ziegler at the Institut für Evolutionsbiologie und Ökologie at the University of Bonn. The laboratory there includes transmission and scanning electron microscopes (TEM,

SEM), confocal and high-resolution digital microscopes, and a micro-computed tomography (micro-CT) scanner.

I brought a set of fossil sand dollars (a type related to the modern forms we had collected) for micro-CT scanning to determine if the diverticulum, or at least its mineral grains, could be detected in them. If so, the origin of this organ could be traced to the earliest examples of these sand dollars, which could help decipher the history and function of the diverticulum.

Dr. Jenifer Gifford (UM assistant professor of geology and geological engineering) is also collaborating with us to help identify the minerals selected by the sand dollars, comparing them with the proportions of minerals in the sediment to try and quantify the degree of selectivity shown by the animals.

And while international collaboration is expected to be a learning experience, perhaps the most surprising thing I learned there was that Germans don't applaud an academic speaker by clapping; rather, they tap their knuckles on the table. But as they say in Tübingen, "Andere Länder, andere Sitten!" (When in Rome ...). 🌸



The Neckar River and Old Town, Tübingen

Louis Zachos is an associate professor of geology and geological engineering at the University of Mississippi.

Two outstanding engineering freshmen named Stamps Foundation Scholars

By Ryan Upshaw

Harrison McKinnis of Madison and Robert Wasson of Jackson will major in chemical engineering and be members of the Sally McDonnell Barksdale Honors College. McKinnis will also participate in the Haley Barbour Center for Manufacturing Excellence. Both are also members of the Chancellor's Leadership Class.

With its partner universities, the Stamps Foundation seeks students who demonstrate academic merit, strong leadership potential and exceptional character. Through the foundation, students have access to funding to engage in internships, undergraduate research or other professional development activities. Potential Stamps scholars are invited to campus for a special weekend visit to get an in-depth look at the university's academic programs as well as opportunities to interact with campus administrators and current students.

McKinnis and Wasson are shining examples of the outstanding students that the Stamps scholarship has helped Ole Miss attract over the past few years.

McKinnis said he is grateful to be considered for the scholarship.

"I felt that every candidate was worthy of the scholarship, and I was shocked to find out I was chosen," he said. "At that point, my college decision process ended, and I knew that I had found my new home, one that wants to support me just as I want to support it."

McKinnis also noted that his visits to campus were a major factor in his decision to enroll at the university and in the School of Engineering.

"I found that the University of Mississippi had a chemical engineering program that would challenge me academically but also support me in finding opportunities to advance in my professional and personal lives," said McKinnis, who was named salutatorian and STAR student at Madison Central High School.



Robert Wasson (left) and Harrison McKinnis Photo by Bill Dabney

A National Merit Finalist and AP Scholar with Honor, he scored a perfect 36 on the ACT. Named Mr. Madison Central High School, McKinnis was inducted into the school's Hall of Fame and received highest average honors in 18 subjects. He was also a member of the MCHS Engineering Academy for three years.

Beyond academic excellence, McKinnis was also a top leader at Madison Central. He served as co-president of the MCHS Student Government Association after serving as class treasurer for two years. He also served as a junior ambassador for the Chamber of Commerce, Madison County Youth Leadership ambassador and represented his school at the Hugh O'Brian Youth Leadership Conference.

McKinnis was also a student-athlete as a member of the MCHS soccer team. In the community, he has given time to a variety of organizations including the Mississippi Food Network, American Cancer Society and Soccer Kids Camp.

He hopes to participate in a co-op or internship with an engineering firm

at some point in his undergraduate education to gain the experience and knowledge to become a professional engineer. McKinnis is considering entering the practice of chemical engineering or pursuing further education upon graduation.

Like McKinnis, Wasson's academic and leadership record afforded him various college options. However, it was the personal attention he received during his visits to campus that helped him decide to attend Ole Miss.

"After touring many other engineering departments nationwide, I decided to attend Ole Miss because it felt the most like home," he said. "The Ole Miss chemical engineering department was a welcoming environment that I knew would provide me with the opportunities to have one-on-one contact with professors and other opportunities not available at other institutions. Additionally, Ole Miss encourages its engineers to be involved outside of the classroom and to pursue other interests."

Wasson was also excited to learn that he had been named a recipient of the

Stamps scholarship and ready to take advantage of the unique opportunities the award offers.

“When I learned of my selection as a Stamps Scholar, I was deeply humbled and honored to be chosen out of such a competitive field full of great applicants,” he said. “I then realized the tremendous charge I had been given to do great things with such an amazing opportunity.”

Wasson was salutatorian at Jackson Preparatory School. A National Merit Finalist and STAR student, he scored a 36 on the ACT as well. Wasson was featured in *Portico* magazine’s “25 Students Who Will Change the World” edition

and the *Jackson Free Press* “Amazing Teen” issue in 2016.

During summer 2015, Wasson spent time on the Ole Miss campus participating in the Heads in the Game summer research program through the School of Engineering, where he conducted research on concussions in student-athletes. In 2016, he was selected to participate in the Trent Lott Leadership Institute at UM, where he took courses in political science and speech as well as traveled to Washington, D.C.

Active in the community, Wasson earned Eagle Scout status and volunteered with the Youth Ambassador Council for the Mississippi Children’s

Museum as well as Batson Children’s Hospital. He was also a part of Youth Leadership Jackson and attended Mississippi Boys State. He served on the senior advisory board for Jackson Prep’s Global Leadership Institute and as a member of the Prep Patriot League, the school’s student ambassador program. He was also a student-athlete on the cross-country team.

Wasson hopes to take full advantage of the opportunities available to him via the Stamps scholarship and plans to attend medical school after graduation. ✨

Ryan Upshaw is the engineering school’s assistant dean for student services.

13 engineering students named Brevard, Adler Scholars

By Ryan Upshaw

Representing Mississippi, Alabama, Illinois and Tennessee, 13 engineering students are this year’s Brevard and John G. Adler scholars. This exceptional group of students posted an average ACT score of 33.4 and an average 3.92 high school grade-point average.

“We are pleased to welcome these outstanding students into the School of Engineering,” Dean Alex Cheng said. “We are also thankful for the generous support of our donors who make it possible for us to award these scholarships and attract the best and brightest students to the university.”

A graduate of West Lauderdale High School, Kelly **Bates** is one of this year’s recipients of the Brevard Engineering Scholarship. After being recruited by universities such as Yale, Vanderbilt and Harvard, she chose to pursue a degree in biomedical engineering at Ole Miss and accepted membership in the Sally McDonnell Barksdale Honors College.

“I was completely humbled,” she said. “I never expected to receive something like this, and it just solidified my decision that Ole Miss would help me thrive, grow and experience the most as a college student.”

Bates, a native of Collinsville, earned the title of STAR student and valedictorian. Named one of Mississippi’s U.S. Presidential Scholars, she participated in the UM Summer College for High School Students engineering program. She served as president of the National Honor Society and on the Youth Ambassador Council for the Mississippi Children’s Museum.

She hopes to get involved in undergraduate research experiences early on in her college career as she prepares to attend medical school.

“The research opportunities here along with the close-knit community makes it the best of both worlds,” Bates said. “Where

else can you work in an R1 rated lab where the professor knows you by name and wants to help you learn and grow?”

Other Brevard scholars include Nayan Chawla of Cleveland, William Guy of Saltillo, Baylee Howard of Corinth, Bryce Little of Clinton, Laine Keel of Lucedale and Jennifer Myers of Raymond.

Chawla was named a STAR student and National Merit Finalist at the Mississippi School for Mathematics and Science. He served as a student government senator and member of the physics club, mock trial team and Technology Student Association. He plans to study computer science as a member of the Honors College.

Salutatorian at Saltillo High School, **Guy** served as vice president and president of the student council, junior class president, senior class secretary and attended Mississippi Boys State. He was also a member of the Scholars Bowl and math and science teams. He plans to study electrical engineering as part of the Honors College. He will also be a member of the Chancellor’s Leadership Class.

Corinth High School’s STAR student, **Howard** earned the title of salutatorian and was named to the Hall of Fame. She served as student council vice president



BATES



CHAWLA



GUY

and was a member of the Mayor's Youth Council and Junior Leadership Alcorn. She received various honors at state-level math and science competitions. She will pursue a degree in biomedical engineering as part of the Honors College.



HOWARD

A National Merit Finalist, **Little** earned the rank of Eagle Scout at Clinton High School. Ranked eighth in his class, he participated in the Tech Jackson Computer Coding Competition and was named Model United Nations Outstanding Diplomat. He attended Mississippi Boys State and participated in the Clinton Chamber of Commerce Youth Leadership Committee. He will study biomedical engineering as part of the Honors College.



LITTLE

Keel was ranked third in his class at George County High School. He attended the APEX Leadership Summit at Ole Miss and received numerous academic awards. He was captain of the quiz bowl team and president of the mathematics club. He will study biomedical engineering as part of the Honors College.



KEEL

Myers was named STAR student and valedictorian at Hillcrest Christian School. She served as vice president of the National Honor Society and editor of the yearbook. She played varsity soccer for four years and has volunteered as a youth soccer coach. She plans to study biomedical engineering as part of the Honors College.



MYERS

Receiving the Adler scholarship sealed the deal for Jake **Noll** of Columbia, Illinois, to enroll at the university.

"This scholarship was the final push in my decision to choose Ole Miss as my future home," he said. "Thanks to this generous scholarship, I will be coming out of college debt free. This lifts a huge weight off of my shoulders and allows me to focus entirely on my studies."

Noll graduated as valedictorian of Columbia High School. An Eagle Scout, he served as vice president of the National Honor Society and captain of the cross-country team. He was also a member of student council and the scholastic bowl. He will study chemical engineering as part of the Honors College.



NOLL

"I toured many schools across the country. I found what was missing once I toured Ole Miss and visited its engineering department," Noll said. "What Ole Miss had that other schools lacked was this: personal connection and belonging. At Ole Miss, I felt that I would be a name and not a number."

He hopes to work in the area of alternative energy or the aerospace industry, and he would like to further his education in materials engineering after graduation.

This year's other Adler scholars are Charles Gilliland of Memphis, Tennessee, Elizabeth McCutcheon of Hartselle, Alabama, Ashton Murrah of Corinth, Samuel Plash of Mobile, Alabama, and Haley Watts of Hattiesburg.

Gilliland was a National Merit Commended Scholar at Memphis University School. Listed on the faculty honor roll, he was captain of the cross-country team. He has worked with the Memphis Research Group as an intern in security research analysis and database management. He will study computer science as part of the Provost Scholars program.

McCutcheon earned the status of valedictorian and AP Scholar with Distinction at Hartselle High School. She also participated in the UM "Heads in the Game" summer research program. She served as senior class president, HHS ambassador and attended Alabama Girls State. She will study biomedical engineering as part of the Honors College.

A National Merit Commended student, **Murrah** was ranked third in her class at Corinth High School and chosen for the Hall of Fame. She was a member of Junior Leadership Alcorn and the Mayor's Youth Council. She was also a student council representative and captain of the cheerleading squad. She will pursue a degree in biomedical engineering as part of the Honors College.

A National Merit Finalist, **Plash** served as student body president and was named valedictorian at UMS-Wright Preparatory School. He served as class president for two years and was captain of the football team. He received various academic awards including the Edward C. Greene scholarship for the top student in the junior class. He will pursue a degree in civil engineering as part of the Honors College. Plash will also be a member of the Ole Miss football team.

Watts represented the Mississippi School for Math and Science at the Lott Leadership Institute in summer 2016. She served as an MSMS emissary and was a member of the student government association and mock trial team. She participated in university research in an epidemiology lab. She will pursue a degree in biomedical engineering as part of the Honors College. ✨



GILLILAND



McCUTCHEON



MURRAH



PLASH



WATTS

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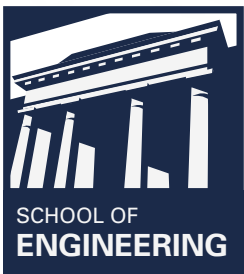
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From Navy to Nuclear

ALUMNUS NAVIGATES REMARKABLE CAREER WITH BACHELOR OF ENGINEERING DEGREE

By Emily Hector

The University of Mississippi School of Engineering offers tools and resources for students to take their passions to the next level.

That was the case for S. Hardy Farris III (BE 82), a Clarksdale native, who spent many of his adolescent years outdoors, fishing, skiing and sailing with his family. “Trip,” as he is known by his family, also had various summer jobs in the Delta including working in a cotton gin. Farris grew up listening to tales from his father, who served as an Army officer in Ethiopia before he was born, which sparked his interest in serving in the military. His late uncle, Robert Farris, is who Farris attributes his early fascination with the Navy.

“One of my favorite memories at our clubhouse on Desoto Lake was of my Uncle Robert who always started the day with ‘Reveille’ and ended the day with ‘Taps,’ mimicking the Navy announcing system on his ship,” Farris said. “It was clear that he loved his time in the Navy and was my inspiration to join the military as a naval officer.”

Prior to graduating high school, Farris applied for and received the Navy ROTC four-year scholarship. One of his top three schools was Ole Miss, which he had strong ties to growing up.

“I can remember Saturdays on the Square, sitting on the tailgate of my grandfather’s pickup, selling watermelons, cantaloupe, corn, peas, beans and sweet potatoes. Both of my parents attended Ole Miss, so it was a natural fit for me.”

Farris started out his college career pursuing a banking and finance major because his father, Hardy Farris Jr., was a banker. He then changed his mind and switched to pre-med. Determined to graduate in four years, Farris knew he had to decide what it was he was passionate about.



Trip Farris invites UM engineering representatives to tour the power generation station in Batesville. Pictured from left: Farris, assistant dean Marni Kendricks, co-op student Caleb Hern, career planning specialist Megan Miller and student James Wilkerson. Submitted photo

After much thought, Farris received advice from his Navy ROTC adviser who asked him to consider a Bachelor of Engineering degree. Choosing this major meant that he would have to conquer a fairly difficult plan to graduate on time.

“Little did I know at the time, but my eventual choice of the Bachelor of Engineering degree would be the best choice I could have made in terms of what I would eventually do with my career.”

Farris dedicated a part of his summers to serving as a Navy midshipman in a program designed to help prospective naval officers decide what to specialize in post-college. Ultimately, Farris had to decide between the Navy and the Marine Corps.

There was also a small specialty within the Navy in nuclear power, but it was notorious for being difficult to qualify for and very selective.

However, Farris took a keen interest in nuclear power after working on a nuclear submarine one summer as a midshipman. He figured he would try his luck when it was suggested to him during his senior year at Ole Miss that he travel to Washington, D.C., for an interview.

“I was honored to have been chosen to interview; I never actually thought that I would be selected.”

The interview process consisted of three interviews with senior naval officers who requested Farris solve math

and engineering problems on a chalkboard. The final interview was with Adm. Hyman G. Rickover, known as the Father of the U.S. Nuclear Navy.

Rickover was most interested in Farris' leadership roles and officer positions within his fraternity, Alpha Tau Omega, and the Naval ROTC unit as well as other extracurricular activities that Farris was involved in at Ole Miss.

"Rickover had a reputation for being a challenging and intimidating interviewer," Farris said.

His final interview question was one that Farris was warned about by his late mother, Martha Faye Farris, he said.

"What was the last book that you read?" Rickover asked. I answered, 'Free to Choose' by Milton Friedman. He misunderstood me and thought I had said 'Pretty Shoes,'" said Farris, recalling this memory vividly years later. "He got really upset and asked me, not so politely, to leave his office."

Not long after the interview concluded, Farris found out he was selected for the program.

"What I learned from that experience is that while good grades are important, being involved in a variety of activities, serving in leadership roles and having a broad education background was what Rickover was looking for."

The program, which Farris would begin after graduating Ole Miss, was six months of formal classroom training in

“ He served honorably in one of the most difficult and challenging fields in the U.S. Navy. ”

Capt. William H. Ketchum

Orlando, then six months of hands-on training on a prototype reactor.

Upon joining the program, Farris found himself among students from prestigious schools from around the country.

"It was without question the most challenging academic experience of my life and, at times, was a real struggle."

Farris credits his wife, Kimberly Pruette Farris (BAccy 82), whom he met at Ole Miss, for getting him through the challenges of the training program. The two got married a couple of months into Farris' training in Orlando.

"I also began to understand how well my field of study at Ole Miss had prepared me for this program and the Navy."

Capt. William H. Ketchum (USN Ret.), former commanding officer of the Navy ROTC unit and professor of naval science at Ole Miss from 1983 to 1985, has known the Farris family since 1983. He said Farris' accomplishments

are impressive, though not surprising considering his abilities.

"[Trip is] the best of the best of the best," Ketchum said. "They're an outstanding family, and Trip is one of them. Just getting accepted in nuclear power school is something that very few people can do. He not only got accepted, he completed it. He served honorably in one of the most difficult and challenging fields in the U.S. Navy."

Farris completed the classroom portion of his training in Orlando and reported next to the hands-on prototype training in Ballston Spa, New York.

"It was there that my experience at working on cars and machines in high school really paid off. I was the first to qualify in my class."

Between his junior and senior year at Ole Miss, Farris' midshipman cruise was on USS Groton (SSN-694), a fast attack submarine.

"What a great experience it was, but also I discovered that being at sea on a submarine was not exactly what I was looking for." He, therefore, elected to serve on nuclear-powered surface ships.

After finishing Navy Nuclear Power School and prototype training, Farris would go on to complete his last stint of training at the Surface Warfare Officer School in Coronado, California.

The nuclear-powered cruiser USS Bainbridge (CGN-25) was the first ship

continued on pg. 38

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Students Place in Major Robotics Competition

MECHANICAL ENGINEERING TEAMS WIN SECOND AND THIRD PRIZES

By Edwin Smith (Photos courtesy of Arunachalam Rajendran)

Two University of Mississippi mechanical engineering student teams have brought home top prizes from an international robotics competition in Tampa, Florida.

The 2017 American Society of Mechanical Engineers Student Design Competition (The Robot Pentathlon: Citius, Altius, Ingenious) challenged each team to create a fast, strong and agile robot. Each team was also expected to build a device to remotely control its robot and compete against others in five different events – a robot pentathlon.

This competition is based on design requirements and a set of rules that change annually. This year, the requirement was to design a robot that could accomplish five objectives: a 10-meter sprint, a stair climb, a tennis ball throw, a golf ball hit and a weight lift.

“Ole Miss had two teams that not only won first and second place in the regional competition in Tennessee, but also those teams went on to win second and third place in the finals, which included teams from around the world,” said Arunachalam Rajendran, chair and professor of mechanical engineering, who accompanied the teams.

The original regional competition, held at Tennessee Tech in Cookeville, Tennessee, last April, included such universities as Virginia Tech, Clemson University, the University of Illinois at Urbana-Champaign and several SEC universities. After their victory, the UM students graduated and began their careers. However, the robots they left were eligible to compete in the international competition, held in mid-November.

“After the competition was completed, the first-place award went to the Indian Institute of Technology Bombay, second went to the Ole Miss Red team with Ryan Steele of Southaven and Turner Wharton of Fairfax, Virginia, and third went to the Ole Miss Blue team with Jonathan Brown of Ecru and Eli Schuette of Ocean Springs,” Rajendran said. “Overall, the Ole Miss students won \$1,500 in prizes, plus an additional \$750 to the ASME student group on campus.”

Matt Lowe, machine shop supervisor in UM’s mechanical engineering department, said the teams can be very proud of their placements in the competition.

“They took a cost-effective approach to complete a very engineering-effective design,” Lowe said. “For example, the manufacturing cost for the Ole Miss robot was less than \$500, and it outperformed a robot from a rival institution that costs more than 10 times as much to create.”

“We couldn’t have won the top two places without the hard work and dedication of the machine shop supervisor, Mr. Matt Lowe,” Rajendran said. “The team members worked very hard under the supervision of Mr. Lowe and utilized all resources in our machine shop for exceptional cost savings. I am so proud of them all.”

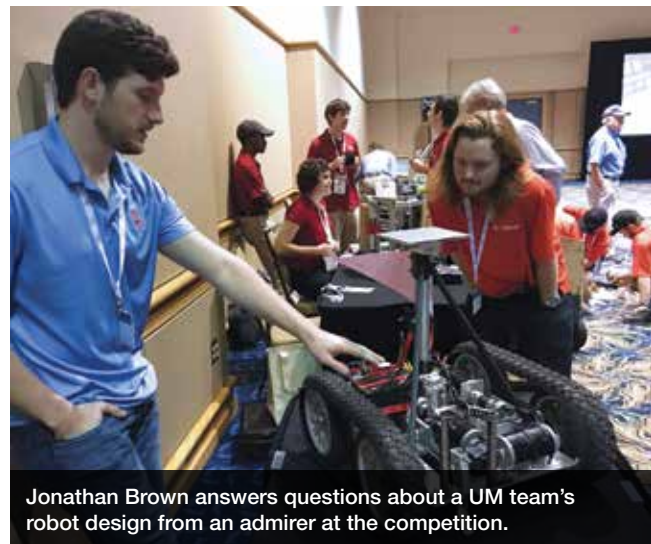
The ASME competition provides a platform for engineering students to present solutions to design problems ranging from everyday household tasks to groundbreaking space exploration. Each team is required to design, construct and operate a prototype that meets the requirements of an annually determined problem statement.

“This experience not only allowed students to learn more about robotics, design and engineering, but it also showed engineers from around the world the fantastic capabilities that Ole Miss has in engineering,” Rajendran said. “Several hundred schools enter the regional competitions each year, yet Ole Miss teams held two victorious positions.

“This not only shows the amazing growth and engagement that Ole Miss engineering has had in recent years, but it is also a testament to the opportunities that are possible with incredible faculty support.” ✨



Members of the award-winning UM teams are Jonathan Brown (left), Eli Schuette, Turner Wharton and Ryan Steele.



Jonathan Brown answers questions about a UM team's robot design from an admirer at the competition.

Taiho Yeom joins mechanical engineering faculty

Assistant professor specializes in thermal-fluid sciences

By Edwin Smith



Taiho Yeom, the newest faculty member in the Department of Mechanical Engineering, said the University of Mississippi is the right fit for him.

“Like most of others applying for jobs, I found the position from job searching online websites and immediately realized that I would nicely fit into the position based on my career and research backgrounds,” said Yeom, who began his employment this past fall. “The position at Ole Miss came out looking for exactly what I had been looking for. Then I applied, and, thankfully, Dr. (Arunachalam) Rajendran (chair and professor of mechanical engineering) contacted and offered me the position.”

UM’s academic reputation, long history and tradition as the flagship university of Mississippi all played a part in Yeom’s decision to accept the offer.

“I thought that this is the great place where I can start my academic career,” he said.

Rajendran said Yeom is a welcome addition to the department.

“Our students will benefit through Dr. Yeom’s teaching of a very important subject such as thermal management as applied to electronic devices and other applications,” he said. “A mechanical engineer with some thermal management background and training will be able to work in a wide variety of industries; I am indeed excited about this opportunity.”

Originally from Gwangju, South Korea, Yeom said Oxford’s climate is similar to that of his homeland. Having earned his Bachelor of Science in Mechanical Engineering from Ajou University in South Korea, he migrated to the United States to seek master’s and Ph.D. degrees. Yeom received the former from Oklahoma State University and the latter from the University of Minnesota. Both degrees are also in mechanical engineering.

“After my Ph.D., I joined Seagate Technology, one of the largest data storage companies, in Minnesota as a senior mechanical engineer,” Yeom said. “I worked on developing (a) next-generation recording head assembly that consists of elaborate micro-scale actuators and sensors focusing on improving structural and dynamic characteristics of the system.”

While Yeom enjoyed his experience at Seagate, he said he missed the research in thermal and fluid sciences he’d conducted in graduate school.

“I always wanted to go back to my original specialty area because I did not want to waste my skills and knowledge that I achieved during almost the entirety of my graduate school years,” Yeom said. “Since I had been struggling a lot in the very cold Minnesota weather for many years, the weather was another reason I wanted a change.”

When his wife, Sohye Lee, became an assistant professor in the College of Nursing at the University of Memphis right after he received the offer from “Dr. Raj,” Yeom knew he had to accept the position.

“That was the final stamp on our decision process,” he said. “Now, I am commuting from Collierville (Tennessee) for about an hour, twice per day, enjoying the beautiful weather and scenery.”

As a tenure-track assistant professor, Yeom is teaching Fluid Mechanics and Heat Transfer this spring semester. He expects to teach other courses in thermal-fluid areas such as Compressible Flow and Thermodynamics.

“My research interest lies in the area of thermal-fluid sciences with a special emphasis on developing novel methods of thermal management and energy conversion systems,” Yeom said.

“The research in thermal management will try to answer the question of how to effectively remove heat from various scales engineering systems employing a variety of cooling techniques, such as piezoelectric active air cooling, microstructured surfaces and multiphase interchip cooling. The research in energy conversion will focus on improving conversion efficiency of pyroelectric devices by employing nano-engineered novel structures.”

Yeom’s short-term career goals at Ole Miss are to initiate teaching activities, look for external funding opportunities and set up his research lab.

“I will try to publish (in) high-impact journals and expose my research to the relevant academic communities,” he said. “Seeking good collaborations will be essential in developing early stages of my research programs. I will put efforts in developing teaching materials and formats to provide improved quality of education to students.”

His long-term goal is to become a recognized researcher and educator in his field so he can contribute to elevating the reputation of the mechanical engineering department, School of Engineering and Ole Miss.

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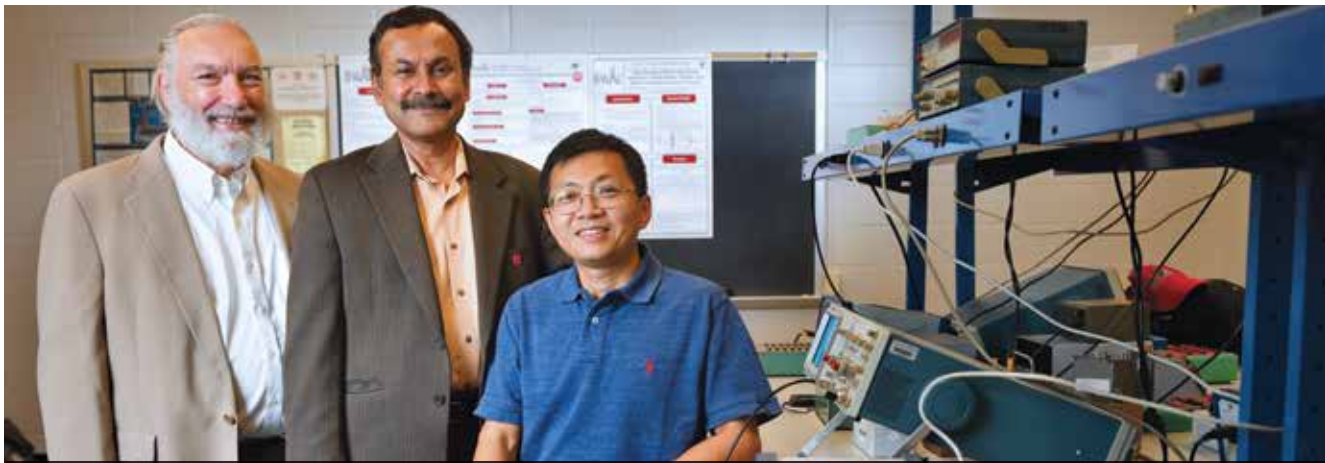
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SENIOR CAPSTONE PROJECTS IN INDUSTRY, ASME AND SAE COMPETITIONS



UM electrical engineering professors John Daigle (left), Ramanarayanan Viswanathan and Lei Cao are lead investigators for the deep-space communications study. Photo by Robert Jordan/Ole Miss Communications

Deep-space communications explored at UM

By UM Communications Staff

Three University of Mississippi engineering professors are collaborating with colleagues at Jackson State University and NASA's Jet Propulsion Laboratory to improve communications with deep-space probes and, perhaps even, manned missions.

Lei Cao, Ramanarayanan Viswanathan and John Daigle, all professors of electrical engineering, are working with researchers on a project funded by NASA's Experimental Program to Stimulate Competitive Research, or EPSCoR.

The project, "A New Paradigm for Efficient Space Communications: Rateless Coding with Unequal Error Control and Data Fusion," has achieved good results in theory and simulations. The team has proposed a new protocol for deep-space communications that may both improve the reliability and increase the reception rate of images or data received from spacecraft.

The results may provide a basis for improving data transfer rates over wireless systems, such as cellular phones, on Earth. The project also may help enable the co-existence of different wireless communication systems for sharing the same frequency spectrum.

The primary challenge in deep-space communications is that as spacecraft travel farther from Earth, the vast distances cause substantial round-trip delays in the signal and high bit error rates in wireless communications.

"For instance, the round-trip time for (a) radio signal is from 8 to 40 minutes between the Earth and Mars," Cao said. "This feature makes the protocols based on the receiver acknowledgment and transmitter retransmission of lost data packets that are currently deployed in our daily-used, land-based wireless communications networks no longer appropriate for deep-space communications."

Also, the long distances cause large attenuation (loss in the signal's strength along the path), various noise and distortion due to the Earth's atmosphere and the sun's corona.

Solving these difficult problems is critical because the need for higher data-rate communications for various exploration missions continues to grow, said Viswanathan, who also is chair of the UM Department of Electrical Engineering.

Data in communications are in the form of binary bit sequences. One bit sequence is often segmented into a number of packets, or basic data units. For example, a few thousand bits could be grouped into one packet. Bits in the packet can be coded together to increase their resilience to signal distortion.

To deal with the effects of long round-trip time, instead of transmitting the original data packets, the researchers encode the packets into a large number of new packets for transmission. At the receiver, the original packets are recovered by using sophisticated algorithms to decode a number of new packets.

"The success of recovery will not depend on which new packets are received but on the number of packets received, which is slightly more than the number of original packets," Daigle said. "As a result, the new protocol eliminates the need of requesting the transmitter to resend any unsuccessfully delivered packets."

Together with this new protocol, a number of advancements, including effective coding and decoding algorithms, dynamic selection of the code rate of error control codes and channel prediction algorithms, have been made so that substantial improvements in data transmission over space-to-earth channels can be achieved.

"The theoretic advancements and practical implementation methods made through this project have been documented in more than 20 peer-referred publications and invited talks and conference presentations," Viswanathan said.

This project is funded by NASA cooperative agreement No. NNX14AN38A. Any opinions, findings and conclusions or recommendations expressed in this material are those of the researchers and do not necessarily reflect the views of the National Aeronautics and Space Administration. ✨

Morrison wins advising award

Over the past three years, Matthew Morrison has advised, encouraged and lent a compassionate ear to hundreds of students at the University of Mississippi. Now they're putting him up for awards – and he's winning.

Morrison, assistant professor of electrical engineering, has been honored with one of UM's 2017 Academic Advising Network's Excellence in Advising awards. The awards are presented each year to one staff academic adviser and one faculty academic adviser. Sovent Taylor, instructor and assistant director of the Health Professions Advising Office, is the staff recipient.

Advisers are nominated by students, peers and administrators. The award is coordinated through the Academic Advising Network steering committee. The network comprises faculty and staff who have an active role in academic advising on campus.

"I was surprised," said Morrison, an award-winning teacher and researcher who oversees the department's emphasis in computer engineering. "I wasn't even aware I was nominated. I'm grateful that my efforts were acknowledged by the students and my fellow faculty members."

Morrison said that building on students' capability and potential goes beyond improving their proficiency in the classroom. "I work with my students on professionalism, communication skills and developing life plans," he said.



MORRISON

Research underway at broadband wireless center

The University of Mississippi's site of the Broadband Wireless Access and Applications Center, or BWAC, is in its third year of successful operation. BWAC is a National Science Foundation Industry/University Cooperative Research Center, led by the University of Arizona in partnership with UM, Virginia Tech, University of Notre Dame and Catholic University of America.

With NSF support (grant No. 1539990), the center works to advance wireless technologies and provide cost-effective and practical solutions for next-generation – 5G and beyond – wireless systems, millimeter-wave communications, wireless cybersecurity, shared-spectrum access systems, full-duplex transmissions, massive multiple input, multiple output techniques and more.

Industry membership includes Raytheon Co., Intel Corp., C Spire and FedEx. C Spire provides up to two undergraduate fellowships, each at \$5,000 per year, to rising juniors/sophomores/seniors as a part of this program, which enables the selected students to work with mentors from Nokia Bell Labs, C Spire and UM faculty. Engineering advisory board members also have been strong supporters of the program.

Current research projects carried out by the UM center include metasurface cloaks of antennas for broadband wireless applications; design, fabrication and testing of antennas using 3-D printed substrate; and analysis of coexistence of 5G LTE systems and Wi-Fi in the 5 GHz band.

Faculty recognition

John Daigle presented a keynote talk on "A Performance Perspective on Function Virtualization for Small Cells in 5G Cellular Networks" at the 29th International Teletraffic Congress (ITC 29) held in Genoa, Italy, Sept. 4-7, 2017.



DAIGLE



YAKOVLEV

Alexander Yakovlev was the vice chair of the Technical Program Committee of the AP-S/URSI International Symposium in San Diego in July 2017.

Student recognition

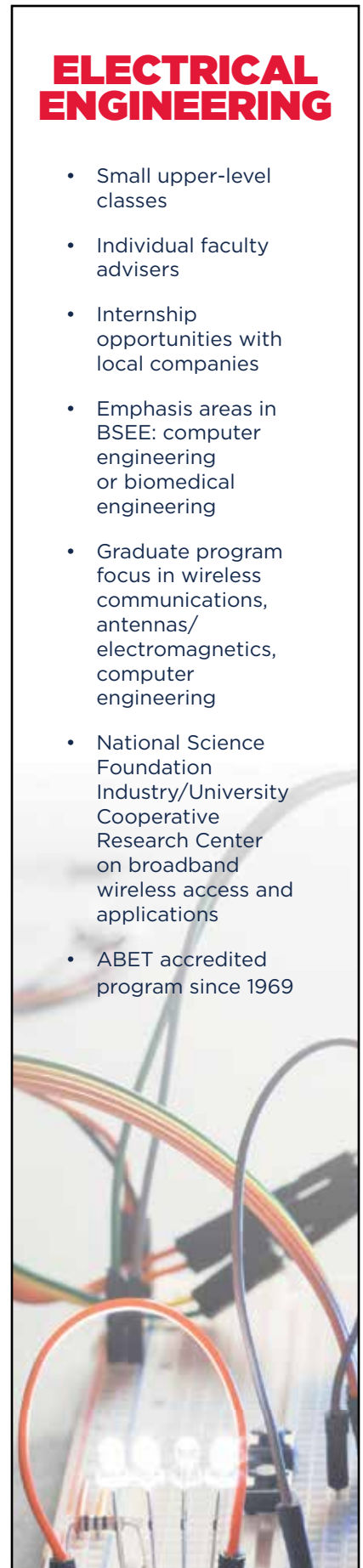
Thomas Garner received the Best Poster paper award at the "Advanced Technology Workshop on Additive Manufacturing" in Huntsville, Alabama, Sept. 13-14, 2017.



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Study USA: Bridges of New York

Story and photos by Chris Mullen

During the 2017 May intersession, seven engineering students ventured to New York City as part of a new course titled “Bridges of NY.” The first offering proved to be an adventure in many respects for all involved.

The idea for the course grew out of a bridge engineering course that I had offered the year before. I had worked in Manhattan a number of years before beginning my academic career and thought that my excitement about the topic would be best shared and explored firsthand.

One of the students who participated, Tennant Duckworth, agreed, finding it “a wonderful experience both in terms of academic knowledge and life experience.

“Walking around the city helped to reinforce the topics covered in class,” he said. “Meeting with the various professionals and professors living and working in New York City was a great experience to gather a greater idea of the scope of the projects.”



On the pedestrian walkway looking toward the Manhattan pier of the Brooklyn Bridge

The course was structured through a proposal submitted to UM’s Study USA program. After the idea was approved, a detailed agenda was mapped out with program director Laura Antonow, who had received her M.F.A. degree at Parsons School of Design in New York.

It was decided that participants would spend three days on campus preparing for the trip and a full week in New York City. While the focus would be on-site visits to major bridges, time would be spent meeting with engineering professionals, with a number of museum visits and tours to provide cultural exposure.

Before traveling, the class met for four hours each of the three days to review structural engineering concepts related

to bridge analysis, design, technology and maintenance. Textbook and assigned reading selections provided historical context and details of individual bridges, some of which the students visited.

Various technical assignments were given including research on travel times to traverse multimodal transportation routes, design calculations for main cables of suspension bridges, live loads for train locomotives, and influence lines for shear and moment in beam girders.

After traveling on their own the night before, the class literally hit the ground running the first day. The class departed the hotel at 9 a.m., caught a subway from Grand Central Terminal to Brooklyn Bridge station, walked the milelong



At the Oculus of the World Trade Center Transportation Hub designed by Calatrava



Overview of Columbia University Carleton Laboratory by professor Andrew Smyth

trek on the bike/pedestrian promenade across the bridge and down to Brooklyn Bridge Park and caught another subway that passed through a tunnel under the East River back to Manhattan.

The group then listened to an hourlong presentation by young bridge project engineers in the offices of WAI, a major consulting firm located on Wall Street, caught yet another subway to Times Square, walked a half mile to Pier 83, took a one-and-a-half-hour Hudson and East River cruise on the Circle Line multilevel vessel around Lower Manhattan, passed under three historic East River suspension bridges, reversed their walk back to Times Square, passed the Port Authority bus terminal and returned to Grand Central Terminal



MULLEN

and the hotel via a final subway shuttle across midtown ... a total of over 20,000 steps in one day, according to one of the students' fitness trackers!

After the first day, the rest of the week flew by. The students became experts in subway travel by the third day and were able to enjoy many sites on their own at the end of each day including a number of museums.

The second day was a bit more relaxed and included a morning tour of the One World Observatory at the top of the Freedom Tower, which afforded views of all of Manhattan, the Hudson and East rivers, and the New York Bay, as well as the 9/11 Memorial and

Museum, the newly completed Oculus and World Trade Center Transportation Hub, and the Tribeca Bridge.

Visits to the George Washington and Tappan Zee bridges were spread over subsequent days. On route to the GWB, the class visited the main campus of Columbia University and received a guided tour of the Carleton Laboratory inside the multistory engineering building.

The tour was led by a civil engineering professor who explained details of a unique test apparatus for a full-scale bridge cable, a moderate scale shake table he used for his research, and a loading machine capable of applying nearly a million pounds of force to bridge components.

After lunch at Chelsea Market, the class traveled by chartered van to the New York Thruway Authority project office for the New New York (now Mario Cuomo) Bridge that carries Thruway traffic along a 3.2-mile crossing of the Hudson River. Weather prohibited access to the actual construction site, but the class saw a detailed presentation of the complete design and construction of the bridge including novel cost-saving techniques for prefabrication of deck and piers, delivery by river, and installation by dedicated derrick barge moored at the site.

The final day was capped by a relaxed breakfast at the Princeton Club. Those who did (not) have morning flights were treated to an informal discussion with a world-class structural engineering expert who asked them some very challenging questions relating to the future of the profession. ⚙️

Chris Mullen is an associate professor of civil engineering.

Surbeck starts term as president of ASCE-EWRI

Cristiane Surbeck, associate dean of academic and student affairs in the School of Engineering and associate professor of civil engineering, started her term on Oct. 1 as president of the American Society of Civil Engineers' Environmental and Water Resources Institute. EWRI is ASCE's technical source for environmental and water-related issues. It is one of nine ASCE technical institutes and has 23,000 members.

Surbeck was elected vice president in 2015 as a first step to becoming president two years later. Her duties include representing EWRI to other engineering societies and the community, presiding over board meetings, steering leadership conferences, drafting policy statements, promoting high-quality continuing education and linking ASCE's technical institutes to regional branches.



SURBECK

20:1

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Andrew O'Reilly (left) and Dennis Powers (with the hat) in New Mexico with the Senior Design class (GE 421)

Firsthand Observation

FIELD CAMP COURSE YIELDS FRIENDSHIPS, CONNECTIONS

Story by Isabella Watt, Photos by Robert Holt

A University of Mississippi professor and two engineering consultants team up each summer to offer a worthwhile geological engineering field camp in New Mexico.

Professor Robert M. Holt joined the faculty of the UM Department of Geology and Geological Engineering in 2000. An environmental engineer and geologist, he specializes in contaminant transport, groundwater hydrology, subsurface geological characterization and nuclear waste disposal.

Since his time at the University of Texas, El Paso, Holt has collaborated professionally with his mentor and colleague Dennis Powers (Ph.D. in geology from Princeton, 1975), a well-known scientist who has published innumer-

able papers and reports in the fields of geology, hydrogeology, geomicrobiology and geological mapping. His publications have appeared in prestigious journals such as *Nature*, the *Bulletin of the Geological Society of America* and *Astrobiology*.

Powers is now an independent consultant in El Paso, working especially with the disposal of transuranic radioactive waste generated by the Department of Defense.

Through his friendship with Holt, Powers has been participating for many years as a volunteer in the annual field trips to New Mexico that are part of the courses Geological Engineering Senior Design (GE 421), offered every spring, and Geological Engineering Field Camp 2 (GE 401), offered every summer. Since February 2005, he has been an adjunct professor of geology and geological engineering at UM.

Powers said he enjoys participating in each field trip, because it “offers the opportunity to take geology and geological engineering students into the field where they will be able to observe firsthand geological features they have likely mainly seen in textbooks. They will also apply techniques they have been taught, mainly in the classroom, to describe, map and interpret these features.” Such field studies provide important “hooks” on which the students will hang future experiences in the classroom, laboratory or field.

Powers describes the days spent in the field as “intense.” The first couple of days are usually spent touring the landscape to introduce students to local and regional geology. The students are asked at times to record what they see with sketches.

Such field studies provide important “hooks” on which the students will hang future experiences in the classroom, laboratory or field.

"It is not about looking," Powers said, "but about seeing."

Then the real work starts. Every day, after an early breakfast at the camp, each student is assigned a project. At the end of the day, they all have to turn in their field notes for a grade. Projects take several days and end with submitting maps, cross-sections, and reports. Their work is graded on a professional basis so they can develop professional skills. The professors also share their notes with the students so they can compare the notes of a "professional" with their own.

Doug Granger also has volunteered for many years to teach and help students at the summer field trip. He is one of the founding members of Cook-Joyce Consultants, a consulting engineering company based in Austin, Texas.

His company provides a broad range of environmental services in three general areas: waste, water and wastewater, and air quality. The company's services include permitting, engineering, geological and hydrogeological evaluations, remedial planning and implementation. He has worked extensively with Holt and Powers at a low-level disposal facility in Andrews County, Texas, where he was instrumental in developing the framework geology at the site.

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Doug Granger (left) leads the way during a Senior Design class (GE 421) in New Mexico in 2017.

'Top Hat' keeps students engaged in classroom

By Inoka Widanagamage



The Top Hat app empowers professors by turning students' distracting mobile devices into learning tools and building comprehension with customizable, affordable textbooks and interactive homework.

Many professors in the UM Department of Geology and Geological Engineering are now using this app to increase class participation and get real-time feedback and answers to questions.

I see this as one of the best ways to engage students in the classroom. Students can use their iPads, phones or laptops in the class and access the lecture slides while the professor is conducting the lecture. I provide lecture hand-outs with blanks, which follow my lecture slides. The students can take additional notes while I am lecturing on the same hand-out.

I find this application very interesting. Students are really active in the classroom rather than just listening to the lecture. I use Top Hat to do interactive quizzes and in-class activities that require students to answer through their own devices and keep them engaged.

Students receive a grade for their Top Hat participation as well as for the correctness of the quizzes/activities, and these grades are considered in the final class grade calculations.

I believe that this new technology is a great way for instructors to connect with their students.

Inoka Widanagamage, Ph.D., is a UM instructor in geology and geological engineering.



WIDANAGAMAGE

Undergraduates get chance to do computer science research

By Dawn Wilkins

The Department of Computer & Information Science committed to increasing undergraduate research by creating a program called C-REX (Computer science Research EXperience). Faculty members identified new research projects or tasks associated with ongoing research projects that could be conducted by undergraduates. The projects, many of which are associated with the Big Data Flagship Constellation, are all timely and involve real-world problems. Here is a sampling of the C-REX projects:

Yixin Chen hired Abigail Garrett to work with him and Yunyun Zhou (of the Department of Data Science at the University of Mississippi Medical Center) on the creation of a breast cancer database.

Naeemul Hassan hired Thomas McFann to work with his Data Exploration and Research Laboratory (dear.lab) to develop ways to combat health-related disinformation spread in online social media platforms.

Dawn Wilkins hired Abigail Thornton to work on a digital genealogy project in conjunction with Jeffrey Jackson (UM sociology department and UM Slavery Research Group). The goal is to create databases of publicly accessible ancestry information and combine them with local (Lafayette County) information to create a web portal for African-American families with 19th-century relatives

from Lafayette County where they can retrieve consolidated information about their families. A grave-site mapping project will also be included.

Feng Wang hired Lee Easson to work on a project to create high-accuracy indoor localization by smartphones. For example, during emergency situations such as a building on fire, first responders can use this technology to quickly locate people who need help.

Philip Rhodes hired Mitch Edwards to investigate and characterize censorship of social media. They will use Spark and MLlib running on a computing cluster housed in the CS department.

Eight C-REX projects were advertised on the department website. Students applied by submitting a resume, and picking three projects they were interested in working on and explaining why. Each faculty member interviewed several students for his or her open position, and 10 students were hired.

The goals of the program are to provide research and scholarly experiences for the students and to help the students improve their problem-solving, critical-thinking, collaboration and communication skills. C-REX students will be encouraged to attend department research presentations, present their own work at appropriate conferences, and to participate in department and university poster competitions in the spring. 🌟



C-REX students Abigail Garrett (left), Abigail Thornton, Jonathan Hopper, Mitch Edwards, Thomas McFann, Jamie Crow, Lee Easson, Hao Zhou and Alex Roy. William Nowell is not pictured. Photo by Jeff Lucas

New assistant professor brings expertise in computational journalism to UM

By Edwin Smith



HASSAN

Naeemul Hassan found many reasons to join the University of Mississippi's faculty.

"When I came (to) Ole Miss for the job interview, two things which impressed me the most were the people in the department and the university campus," said Hassan, the newest assistant professor in the computer and information science department.

UM's classification as an R1 university by the Carnegie Classification of Institutions of Higher Education, its prestigious journalism school, and possible research opportunities with the University of Mississippi Medical Center sealed the deal for him.

Now that he's at the university, he has set short- and long-term goals.

"I am actively working on the area of computational journalism, and recently, I have developed an interest in the application of data mining and deep-learning techniques in (the) medical and health domain," he said.

"My current objective is establishing the Data Exploration and Research Laboratory, or dear.lab," Hassan said.

The goal of this lab is to advance database and data-mining research and thereby address issues with big societal impact. The lab's current focus includes computational journalism, multidimensional optimization and natural-language processing.

In its first year, the lab employs researchers who have published four research papers in reputed venues, such as the Conference on Information and Knowledge Management, Advances in Social Network Analysis and Mining, and Computation + Journalism.

Currently, dear.lab is collaborating with UM's Meek School of Journalism and New Media, University of Oklahoma, University of Texas at Arlington and Penn State University. To advance research on computational fact checking, Hassan is organizing a special issue of the Association for Computing Machinery (ACM) *Journal of Data and Information Quality* and arranging a tutorial for the Association for the Advancement of Artificial Intelligence in 2018.

Hassan is a welcome addition to the department, said Dawn Wilkins, chair and professor of computer and information science.

"Dr. Hassan's knowledge of computational journalism will greatly enhance our curriculum," she said. "His teaching style is engaging and informative."

Hassan said his long-term goals include engaging with external funding resources, extending cross-domain inter- and intra-university research and creating a footprint for Ole Miss in the computational journalism research area.

"Much of journalism today is about big data," said Will Norton, UM journalism dean. "Dr. Naeemul Hassan is focused on research to use computers for checking facts and on how to find leads for stories by monitoring data. If the Meek School is to become a new media entity at the highest level, it is crucial to have persons of Dr. Hassan's expertise teaching our students how to use big data efficiently. We are grateful he is at Ole Miss and willing to work with our students."

A native of Bangladesh, Hassan received his bachelor's degree in computer science and engineering from Bangladesh University of Engineering and Technology, or BUET, in 2009. He then came to the U.S. and joined the Ph.D. program at the University of Texas at Arlington. Under the supervision of Chengkai Li, Ph.D., in the research area of database systems, data mining and computational journalism, Hassan completed the program in August 2016.

Latest news

- Yixin Chen was promoted to full professor beginning July 2017.
- Our upper-level, required courses have hit all-time-high enrollment in the last year.
- Among the junior and senior CS majors, 25 are members of the Sally McDonnell Barksdale Honors College.
- Jeff Lucas, our information technology coordinator, has created a new, innovative course on cybersecurity. The students in the class have access to software that was developed to train security specialists in industry and government.

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.

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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

Professional Practice Program Launched

CHEMICAL ENGINEERING STUDENTS MAKE MOST OF CO-OP EXPERIENCES

Introduction by Megan Miller

The School of Engineering has launched a new Professional Practice Program aimed at providing students with hands-on work experience in their chosen field before graduation. The Professional Practice Program includes undergraduate research opportunities, summer internships and cooperative education.

Cooperative education provides students with the unique opportunity of working in a professional capacity for several months during their tenure as an undergraduate student. During this time, students are well compensated for their work, and they gain relevant engineering experience to add to their resumes. Although the School of Engineering has a long history of sending co-op students into the workplace, new policies are aimed at improving student experiences and increasing the number of students participating in co-op.

The new cooperative education policy makes participating in a co-op more affordable for students by eliminating tuition fees. It also provides full-time student benefits and gives students access to additional support from the Engineering Dean's Office. School of Engineering representatives will visit co-op students on-site each semester to evaluate the students' progress and speak directly with student supervisors. Cultivating these relationships between the School of Engineering and on-site supervisors will play an integral role in developing the "co-op culture" within the school and improving job placement rates following graduation.

The Department of Chemical Engineering has done an outstanding job of preparing its students for co-op positions and encouraging students to participate in co-ops before graduation. These students learn valuable professional skills and work side by side with experienced engineers to solve real-world problems. Many of



Chemical engineering students David Rozier (left), Ward Toler, Kaitlyn Myers, Brenna Sit and Jordan Houry have experienced working in the 'real world' before earning their degree, giving them an edge as they begin the search for full-time jobs. Photo: Department of Chemical Engineering

them have implemented projects that will save their companies hundreds of thousands of dollars. Read on to learn more about the exciting co-op experiences of our chemical engineering students.

Brenna Sit

Junior, Brandon, Mississippi

"During my time at the University of Mississippi, I have completed three manufacturing co-ops with Exxon-Mobil in Baytown, Texas, working in both the Chemicals and the Refining & Supply divisions of the company. This was a very rewarding experience, as it helped me truly understand chemical engineering. I applied the teamwork and problem-solving skills I have developed in the Ole Miss chemical engineering department and the CME, was able to see how business and engineering combine to form a successful corporation, and became familiar with pieces of equipment to which I only had exposure to through assignments, all while contributing to the company by completing meaningful projects.

"Additionally, the experience allowed me to develop my interpersonal skills

and learn about the petroleum and petrochemical industry, which was an industry I had not considered when I entered college."

Jordan Houry

Senior, Corinth, Mississippi

"My co-op was with DuPont in Memphis at their Nutrition and Health - Protein Solutions plant. My work was split pretty evenly between more traditional process engineering work and day-to-day production tasks. I was put in a position to contribute valuable work almost from day one, and that trust really inspires you to get out of your comfort zone to learn and do more.

"My site was willing to dole out as much work as I wanted, so I would often find myself working on two to three projects in addition to my weekly standard work. My projects weren't just getting coffee, either: My two most financially momentous projects were getting to make equipment upgrade recommendations for a project with a budget of \$500,000 and assisting on a yield project worth \$2.5 million."

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Ma Kai, vice premier of the People's Republic of China, meets with participants, including Wei-Yin Chen, UM professor of chemical engineering, at the 11th Sino-American Technology and Engineering Conference in the Great Hall of the People, Beijing, May 21, 2016. Submitted photo

SEEG flourishes, plans expansion

The Sustainable Energy and Environment Group, or SEEG, has been conducting a wide range of scholarly activities and now has over 250 participants around the world.

The group was initiated as an international research/education group and has been led by faculty in the University of Mississippi's chemical engineering department. Along with Jackson State University, University of Wyoming and University of Delaware, SEEG has established a \$6 million consortium, supported by the National Science Foundation, on sustainability in the water, energy and food, or WEF, nexus.

SEEG has led the publication of two editions of the four-volume, 3,331-page Handbook of Climate Change Mitigation and Adaptation, which has emerged as a major reference book with a remarkably high and increasing download frequency.

Student participants in the group have received national recognition and entered the workforce. SEEG leadership has been invited to give keynote lectures and organize international conferences. In the next phase, it plans to expand its innovation in WEF to a global consortium involving at least 10 universities.

Ureña-Benavides studies bio-based nanoparticles

Esteban Ureña-Benavides, assistant professor of chemical engineering, joined the University of Mississippi from the University of Texas at Austin, where he worked as a postdoctoral researcher. He also completed postdoctoral appointments at Georgia Institute of Technology and Auburn University. Before that, he received his Ph.D. in chemical engineering from Clemson University and his B.S. in chemical engineering from the University of Costa Rica.

His current research focuses on the effect of bio-based nanoparticles on the interfacial properties of foams and emulsions. Ureña-Benavides' research group uses cellulose nanocrystals (CNC) and other nanoparticles to control the stability of multiphase systems with multiple industrial applications.

One project, funded by the American Chemical Society Petroleum Research Fund, involves the stabilization of supercritical CO₂ foams in extreme underground conditions of high salinity, pressure and temperature. The novel biphasic fluids have the potential to be used for simultaneous greenhouse gas sequestration and fossil fuel extraction.

The project is expected to improve the sustainability of traditional fossil fuels by potentially reducing the water consumed during the traditional fracking process by up to 95 percent. It also seeks to capture CO₂ underground to partially offset the global warming effect of traditional energy sources. This project is being carried out by graduate student Sanjiv Parajuli and undergraduate students Maren O'Haver and William Moyer.

Another project, funded by the National Science Foundation (grant No.1704897), studies the effect of interfacial properties and nano-additives on the effectivity of liquid/liquid extraction systems. In collaboration with Erick Vasquez from the University of Dayton, Ureña-Benavides expects to lower the cost and energy consumption of purifying bioethanol from fermentation broths.

Separating ethanol from an aqueous mixture is often done through an energy-intensive distillation process, followed by water adsorption with molecular sieves. The research in Ureña-Benavides' research group seeks to explore CNC decorated with magnetite nanoparticles to enhance the extraction of ethanol with castor oil. This project is being executed by graduate student Jahid Hasan and undergraduate student Ashley Johnson.

chemical engineering

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

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20%

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220

STUDENTS

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GENERAL: FARRIS

continued from pg. 25

Farris was assigned to, located in Bremerton, Washington. The ship was in the middle of a complex overhaul followed by a period of rigorous sea trials.

"We tested the ship and all its systems to the limits to determine top speed, how fast it could stop and how quickly it could turn. It was a challenging first year but a great way to learn every part of the ship in detail," Farris said.

Farris served nearly three years on *Bainbridge*, serving as the reactor training assistant and the ship's navigator. His qualifications would allow him the opportunity to operate both reactors on board, and he earned the title of Surface Warfare Officer.



FARRIS

Farris' time in the Navy took him to many places throughout the world such as Haifa, Israel; Toulon, France; Maracaibo, Venezuela; Majorca, Spain; Naples, Italy; Morocco, Cuba and many ports in the Caribbean.

"Despite my enjoyment of travel and adventure with the Navy, after almost eight years of service I decided it was most important to me to raise my two children in Mississippi near all of their grandparents and other family members."

Farris' daughter, Katie Farris Myers (MAccy 09), was born in Norfolk, Virginia, while stationed on *Bainbridge*, and

his son, Hardy Farris IV (MAccy 12), was born in Saratoga Springs, New York, while he was the operations officer at the D1G prototype facility where he had trained.

In 1989, he resigned his naval commission and accepted a senior engineer position at the Grand Gulf Nuclear Station in Port Gibson, Mississippi, and Farris, his wife and two children moved to Vicksburg.

"My first few years at Grand Gulf were spent performing design engineering

engineering, the highest standard of competence for an engineer.

"The majority of my 25 years there, however, were spent in operations where I earned my senior reactor operator license and was actively involved in the day-to-day operation of the plant."

Despite traveling all over the world, Farris still loved Oxford. When an opportunity arose to work at a natural gas power plant in Batesville, he was immediately interested.

Farris was named the Batesville Generating Station plant superintendent in February 2015 and moved back to Oxford.

When Farris began working at the station, it was owned and operated by South Mississippi Electric Power Association, a cooperative headquartered in Hattiesburg. Since then, the cooperative has changed its name to Cooperative Energy.

"The plant is very different than any of the previous plants where I have worked, but over the last two-and-a-half years, I have learned a lot about this newer technology and really enjoy the work and the great people there."

As for what's next, Farris hopes to continue his work in the power-generation industry and to keep a close eye on up-and-coming technologies and innovations to improve efficiency and reduce emissions. He is also interested in seeing renewable energy resources continue to be introduced and expanded in Mississippi.

"I believe I am in the right place at the right time to be working in the power-generation industry, particularly at a natural gas combined cycle plant. I also feel that God led me to this job so that I could be near and care for my elderly parents and enjoy living near so many of my extended family in the Oxford area."

Farris attributes to Ole Miss his fostering lifelong friendships and meeting his wife, as well as guiding him spiritually while an undergrad student.

"My decision to attend Ole Miss led ultimately to the bigger decisions both professionally and personally with my naval service, my current profession, and my wife and children." ✨

“
The plant is very different than any of the previous plants where I have worked, but over the last two-and-a-half years, I have learned a lot about this newer technology and really enjoy the work and the great people there.
”

Trip Farris

work to support plant modifications. I was also involved in project management and financial planning."

Grand Gulf is one of the largest single-unit nuclear stations in the United States and is owned and operated by Entergy Operations Inc. During his first few years at Grand Gulf, Farris earned his PE license in mechanical



Those participating in GE 421 pose in front of El Capitan, Guadalupe Mountains (West Texas).

GEOLOGICAL: CAMP

continued from pg. 33

Granger said he enjoys the interaction with the students and is always available to share his knowledge and experience with them. He and his wife have become such good friends with Holt that every year they visit for a football weekend in Oxford, stay with the Holts and tailgate at the departmental tent.

The advantages of having such contacts are immense for the students. They can work under the direction of eminent scholars and professionals and profit from their expertise. They are stimulated by the intellectual exchanges with them and learn professionalism and a strong work ethic from them.

Elsie Okoye, who worked as an instructor with both Powers and Granger during the GE 401 field trip in summer 2017, is enthusiastic about her experience. She said the presence of professional powerhouses introduces

to the course a high degree of professionalism. The students are exposed to real-life projects and learn how to work well with different partners during the two-week camp, just as they would in a real working experience. They are exposed to unfamiliar territories and have to learn to do a good job under tight deadlines.

Liz Vitale, a UM student and teaching assistant, has also worked with both. She was amazed at how Granger and Powers, along with Holt, were always very helpful and available to share their knowledge with the students.

The Senior Design course (GE 421) is taught mainly on campus in Oxford, except for the five days spent in New Mexico, but she said that Powers, when needed, has always been available to help the students and answer questions even via video conference. Granger and

Powers have helped her tremendously to grow as a student and as a geologist.

Her remarks are echoed by Kaitlyn Voll, who also participated in the field trips, initially as a student and then as a teaching assistant. She said a sense of camaraderie exists among the people who participate in these research trips, which allows them to ask more questions. She said she keeps learning, even when working as a TA under the direction of Holt, Powers and Granger. Their friendly critiques at the end of each day stimulate the students to produce their best work.

The team spirit does not stop on the field. Some of the students in the department have also found employment, thanks to the connections established with these scientists during the field trips. These are clearly relations that are mutually beneficial. ✨

CHEMICAL: CO-OP

continued from pg. 36

Kaitlyn Myers

Senior, Jackson, Mississippi

"During my time at Ole Miss, I've been able to complete two very different internships. I first got to work in the chemical division of the Mississippi Department of Transportation materials lab in Jackson. While there, I ran samples of asphalt emulsions from different projects around the state.

"This past summer, I interned with Carlisle Construction Materials in Senatobia as an R&D process engineer. I enjoyed getting to see all the facets of being a hands-on engineer, and I loved putting to use everything I had learned in school. I also got to travel to different plants for the company, and I even was able to give a presentation to senior management at the headquarters in Pennsylvania.

"Having the opportunity to work directly in the field with senior engineers reaffirmed my choice to become an engineer. Thanks to our School of Engineering, I'm now able to go to work for this great company after I graduate and further put my skills to use."

David Rozier

Senior, Oxford, Mississippi

"I had my first internship in summer 2014 with International Paper at the paper mill in Vicksburg. It was extreme-

ly beneficial for me to be exposed to this so early in my college career, especially learning the importance of safety in industry as well as skills such as project management, working in cross-functional teams, and being able to focus on and communicate results.

"I returned to IP as an intern in summer 2015. This time around, I was able to incorporate some of my learning about lean manufacturing from the CME. I had the opportunity to participate in several continuous improvement projects. By this time, I had begun to realize how much of engineering is 'learning on the job.' That is something I've come to enjoy and affirmed my choice of major and career in my mind. In summer 2016, I chose to work for 3M at a film manufacturing plant in Decatur, Alabama. I had the role of 'lean engineering intern.' In fall 2016, I had the chance to co-op for ExxonMobil at the Baton Rouge Refinery.

"I am very grateful for the opportunity to have four different internships in three fairly different industries. I found a great fit with International Paper and will be joining them as a full-time process engineer at the Vicksburg Mill upon graduation next summer. I am looking forward to my future career as an Ole Miss engineering alum!"



David Rozier in Baton Rouge at Exxon Refinery during co-op term
Photo by Brenden Bowerman

Ward Toler

Senior, Oxford, Mississippi

"I worked as an engineering co-op student for two semesters at Cooperative Energy's Batesville Generating Station. This was my first time working in industry and a great learning experience. I was able to work on a variety of projects, from replacing stainless steel tubes in a steam condenser to CO2 blasting rust inside a heat recovery steam generator. It was also very beneficial to observe a professional engineering environment and participate in project planning and plant improvement.

"My biggest takeaway from my work in Batesville was the constant communication that took place between everyone that worked on site, from Cooperative Energy employees to hired contractors. The engineering school at the University of Mississippi also focuses on group work and communication, and I can now see the goal behind the group projects assigned throughout my college career." ⚙️



Seth Gray, ChE junior (left); Deborah Dice, DuPont plant manager; Jordan Houry, ChE senior Photo by Alan Hale

Biomedical, aerospace engineering student organizations launched

Professional organizations are the backbone of any academic program. Student involvement in these organizations is critical as faculty, professionals and students network on various projects, competitions and research experiences. These organizations also provide support to students as they earn their degrees. Interaction between students at all levels of classification aids in retention and satisfaction among students as they learn more about their chosen fields.

In the School of Engineering, student groups such as the Institute of Electrical and Electronics Engineers have developed outreach programs to promote STEM education to area high schools. The student chapters of the American Society of Civil Engineers, American Society of Mechanical Engineers and American Institute of Chemical Engineers have participated in various competitions and honed the skills of student members.

Additionally, organizations such as the Society of Women Engineers, National Society of Black Engineers and the Engineering Student Body have recently represented the university at conferences across the country.

As enrollment continues to grow and new programs are established, a need for additional organizations to meet student interests becomes important. During fall 2017, two new student organizations have formed within the School of Engineering. The Biomedical Engineering Society and the American Institute of Aeronautics and Astronautics are seeking new members and are ready to make an impact on the engineering student body.

The Biomedical Engineering Society is the professional organization on campus for all students who are interested in working in biomedical engineering or similar fields, said Justin Reynolds, a biomedical engineering major from Ocean Springs and founder and president of the organization.

Reynolds said he hopes to see the organization grow over the coming year and provide professional development opportunities and networking experiences for biomedical engineering students. The biomedical engineering major expanded from an emphasis to a full degree-granting program in 2017.

"My main goal for starting this organization is to help attract more companies to recruit biomedical engineering graduates from Ole Miss," Reynolds said. "We also want to help recruit future biomedical engineering students and give back to both the School of Engineering and to the community."

Juliana Davis, a biomedical engineering major from Olive Branch, serves as secretary of the organization. She also wanted to see student representation for biomedical engineering majors when the degree program

was announced earlier in the year. She is excited for the program to grow, as well, and for future alumni to be able to come back and share their experiences with biomedical engineering students and help in the professional recruiting process.

Reynolds credited Dwight Waddell, associate professor of electrical engineering and the organization's faculty adviser, and Ryan Upshaw, assistant dean for student services, for their help in launching the organization.

Although the School of Engineering does not offer an aerospace engineering major, many Ole Miss students are interested in careers in the aerospace industry. Enter the American Institute of Aeronautics and Astronautics. While many Ole Miss engineering graduates have gone on to careers in the aerospace industry, this organization, the largest technical organization dedicated to the aerospace profession, will help bring more attention to the area on campus.

Annie Catherine Richardson serves as chair of the organization and is pursuing a major in mechanical engineering. She said the organization's mission is to inspire and advance the future of aerospace for the benefit of humanity. The UM branch allows undergraduate and graduate students to explore their interest in aerospace engineering and learn more about the profession.

Richardson worked closely with Nathan Murray, faculty adviser and research assistant professor of chemical engineering, to reactivate the chapter, which had become inactive in recent years. The group now has nearly 50 interested members on its email list. Richardson is a co-op volunteer with the NASA Marshall Space Flight Center in Huntsville, Alabama, working in experimental aerodynamics. That experience was also a catalyst for her to help get the organization back on campus.

"One of my main goals for the future is to be able to participate in AIAA's Design-Build-Fly competition, which involves designing an unmanned, electric, radio-controlled aircraft designed to perform tasks for a competition-specific mission," she said. "We also hope to hold more activities like guest speakers and possibly facility tours that will be informative and beneficial to our members."

She said she wants anyone who is even remotely curious about the world of aerospace to join the organization, which is open to all STEM majors regardless of year.

– Ryan Upshaw, assistant dean for student services in the School of Engineering

IEEE has active year

The Institute of Electrical and Electronics Engineers, or IEEE, student branch at the University of Mississippi organized various events during the fall semester. Here is an overview of some of those events:

MSU Hackathon (pictured): Around 12 members of IEEE participated in the MSU Hackathon, which was held Oct. 22-24. It was really fun and inspiring, and a lot of new technologies were used in that event.

Python Tutorial Program: With the support of Paul Goggans, Wesley Henderson and IEEE members, we successfully organized a Python tutorial program. Every interested IEEE member was invited to the program. Python programming for Raspberry Pi was taught at that event.



Guest Speaker: In our meeting in September, we invited Gregory Sechrist as a guest speaker. He is a graduate student in law school who shared his experience working in the U.S. patent office.

Get Involved Fair: We participated in the Get Involved Fair organized by ASB during the beginning of the semester. On that day, we

showed our robots, Raspberry Pi projects and a summary of our past events.

Robotics: We collaborated with the Ole Miss Robotics Club and made some robots for a high school project.

– Sabin Timsina, sophomore, electrical engineering, IEEE president



Alex Cheng, dean; David Brevard, donor; Ahmed Al-Ostaz, Brevard Endowed Chair and professor of civil engineering; and Bill Dykeman, president of the Ole Miss Engineering Advisory Board, stand in front of the Brevard commemorative plaque in Brevard Hall. Photo by Bill Dabney

D E D I C A T I O N

“It is with deep appreciation
for the many years
of generous financial support
in the form of undergraduate scholarships
made available by the Brevard Family
to many students of engineering
that the building was officially named
‘Brevard Hall’ and commemorative signage
placed in the lobby area in October 2017.”

ALEX CHENG

Outstanding students, faculty and staff celebrated at banquet



ALUMNI AWARDS

Chuck Smith (BSEE 83), **Steve Smith** (BSEE 93)
Engineer of Service Award

Karen C. Matthews
(BSCS 85, MBA 87)
{Ph.D., University of Tennessee}
Engineer of Distinction

SPECIAL RECOGNITION AWARD

Robert Holt, Paul Scovazzo
Gregory Gomez Humanitarian Service Award

FACULTY/STAFF AWARDS

“Vish” Viswanathan
Outstanding Faculty Member of the Year

Dwight Waddell
Outstanding Faculty Service Award

Alexander Yakovlev
Outstanding Faculty Teaching Award

Matt Morrison
Outstanding Junior Faculty Research Award

Wei-Yin Chen
Outstanding Senior Faculty Research Award

Matt Lowe, Dwight O'Dell
Outstanding Staff Award

STUDENT AWARDS

Outstanding Senior Leadership Awards

Dustin Dykes (ME)
Holly Pitts (CE)
Adam Schildhammer (GE)

Mississippi Engineering Society Award

Holly Pitts (CE)

David Arnold Award

Frances Miramon (CE)

Taylor Medals

Dustin Alan Dykes (ME)
Jordan David Houry (ChE)
Ethan Edward Luckett (CSCI)
Alex Kyle McGee (ME)
Holly Ruth Pitts (CE)
Brayley Morgan Sellier (ChE)
Robert Forrest Short (CSCI)
Rachel Ann Stanhope (ChE)
Melissa Ann Wright (ME)

Graduate Achievement Awards

Bradley Goodwillier
Matthew Nelms

Class Marshal

Dustin Dykes (ME)



1. Douglass Sullivan-González, dean of the Sally McDonnell Barksdale Honors College and master of ceremonies
2. Smith brothers and families: Sarah (left), Kyle, Tami and Chuck; Steve, Karen, Brad and Wyatt. A video tribute was presented to honor the Smith legacy (YouTube: 'Book of Smith Ole Miss').
3. Inaugural award presentation by Greg Gomez III to honor the memory of son Greg Gomez IV (BSME 08)
4. Electrical engineering chair and professor 'Vish' Viswanathan, recognized as Outstanding Faculty Member of the Year
5. Engineer of Distinction Karen Matthews (second from left) and family members
6. Bradley Goodwillier, Civil Engineering Graduate Achievement Award winner, with Dean Cheng
7. Matt Nelms, Mechanical Engineering Graduate Achievement Award winner, with Dean Cheng

Photos by Bill Dabney



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