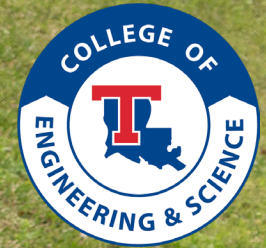
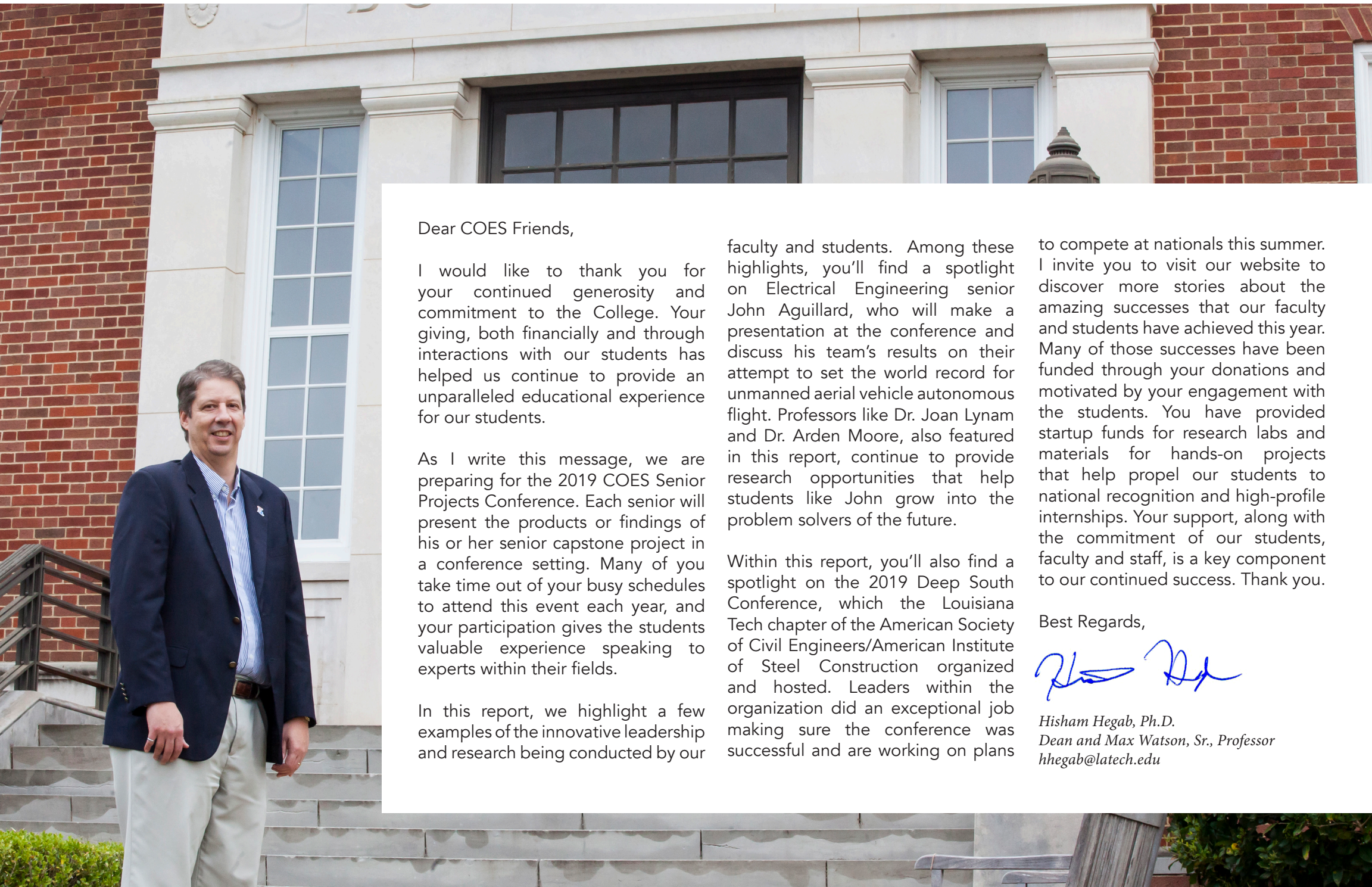


IGNITE PASSION

COLLEGE REPORT 2019



A Year of Preparing Young Leaders: Thank You



Dear COES Friends,

I would like to thank you for your continued generosity and commitment to the College. Your giving, both financially and through interactions with our students has helped us continue to provide an unparalleled educational experience for our students.

As I write this message, we are preparing for the 2019 COES Senior Projects Conference. Each senior will present the products or findings of his or her senior capstone project in a conference setting. Many of you take time out of your busy schedules to attend this event each year, and your participation gives the students valuable experience speaking to experts within their fields.

In this report, we highlight a few examples of the innovative leadership and research being conducted by our

faculty and students. Among these highlights, you'll find a spotlight on Electrical Engineering senior John Aguillard, who will make a presentation at the conference and discuss his team's results on their attempt to set the world record for unmanned aerial vehicle autonomous flight. Professors like Dr. Joan Lynam and Dr. Arden Moore, also featured in this report, continue to provide research opportunities that help students like John grow into the problem solvers of the future.

Within this report, you'll also find a spotlight on the 2019 Deep South Conference, which the Louisiana Tech chapter of the American Society of Civil Engineers/American Institute of Steel Construction organized and hosted. Leaders within the organization did an exceptional job making sure the conference was successful and are working on plans

to compete at nationals this summer. I invite you to visit our website to discover more stories about the amazing successes that our faculty and students have achieved this year. Many of those successes have been funded through your donations and motivated by your engagement with the students. You have provided startup funds for research labs and materials for hands-on projects that help propel our students to national recognition and high-profile internships. Your support, along with the commitment of our students, faculty and staff, is a key component to our continued success. Thank you.

Best Regards,

A handwritten signature in blue ink, appearing to read 'Hisham Hegab', is written over a white background.

*Hisham Hegab, Ph.D.
Dean and Max Watson, Sr., Professor
hhegab@latech.edu*

Leadership, Awards, and Service: Tech ASCE/AISC Teams Organize and Win Deep South Conference

The Louisiana Tech chapter of the American Society of Civil Engineers/American Institute of Steel Construction (ASCE/AISC) hosted the Deep South Conference this March. The organization's officers, team members and faculty advisors worked tirelessly to put the conference together and to prepare for the competitions. All-in-all, the Tech teams put in a combined 3000 working hours preparing for the competition, in addition to the hundreds of hours they put in raising money, scheduling events, recruiting judges, and managing venues.

Teams from thirteen universities from across the region visited Ruston to compete in four categories: the ASCE Concrete Canoe competition, the AISC Steel Bridge competition, ASCE Sustainable Dog House competition and the ASCE Meade Technical Paper presentation. Students from Tech's ASCE/AISC teams aided the visiting teams in finding housing and food while in Ruston and organized a social event and the awards banquet to build camaraderie among the participating universities.

To learn more about how the Tech teams fared, go to <https://coes.latech.edu/deep-south-conference>.



"The ASCE student organizing committee was outstanding in planning and implementing the conference. Students were well organized and careful to make sure that they missed no detail. Because they exceeded their budget fundraising goal early, the students had the money for extras to make the conference enjoyable for everyone."

- Dr. Norman Pumphrey, team faculty advisor, professor, civil engineering and construction engineering technology

Dr. Joan Lynam: Teaching through Projects and Play



In her three years at Louisiana Tech, Dr. Joan Lynam has built a reputation for innovative research and teaching methods. Dr. Lynam, assistant professor of chemical engineering and Louisiana Tech's expert in biomass research, has developed a team-based teaching style that expands into her research lab.

"I am very grateful for the startup funding I received when I began working at Louisiana Tech! These funds allowed me to build my Biomass Team of graduate and undergraduate students, who work hard to find ways to change waste into valuable products. These students' education is enhanced as they brainstorm to come up with new ideas and learn research techniques."

- Dr. Joan Lynam

Students who take Dr. Lynam's courses engage in active learning, memorizing engineering equations by singing them to the tune of *Star Wars* songs and answering questions when their numbers come up on *Dungeons & Dragons* dice. Students also see theory come to life through field trips to places like the City of Ruston Wastewater Division, where they observe the results of wastewater treatment, and the Utility Brewing Company, where they learn how to make ethanol.

That innovative teaching style blends into Dr. Lynam's research. In the Louisiana Tech Biomass Research Lab, which she established using startup funds from the College, Dr. Lynam and her interdisciplinary team of students work to convert waste into energy and bioproducts. In the lab, teams of two work to convert secondary agricultural products, like rice husks and coffee chaff, which are considered waste and aren't typically recycled, into biofuels and add-ins for cement and asphalt.

Learn more at coes.latech.edu/lynam.

John Aguillard: Balloons, Rockets & NASA



How does a student earn a NASA internship? For Electrical Engineering senior John Aguillard, the answer is to develop a new student organization, perform in-depth research into unmanned aerial vehicles (UAVs) and maintain good grades.

In addition to founding the Aerospace Engineering Club, a club that provides College of Engineering and Science students with experience in aerospace engineering through rocketry, high-altitude balloons and UAVs, John is a member of the Louisiana Tech chapters of the engineering honor society, Tau Beta Pi, and the amateur radio club, W5HGT, and has an amateur radio license from the Federal Communications Commission.

John completed two internships with NASA and currently has an internship at Radiance Technologies in Tech Pointe. On top of his internships, John is researching UAVs with Dr. Arden Moore's Multiscale Energy Transport and Materials Lab, research that is sponsored by NASA through the Louisiana Space Consortium.

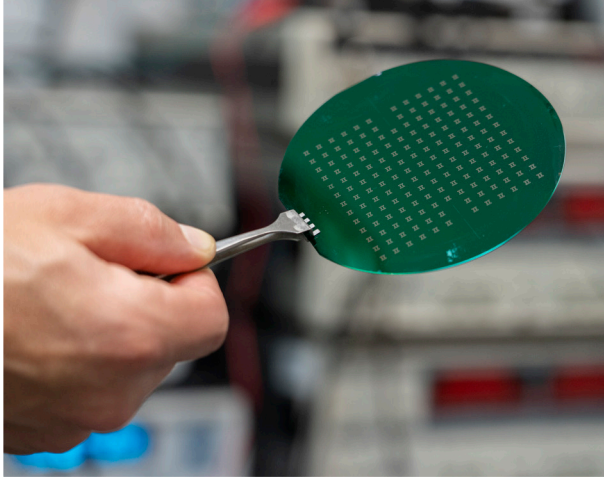
John's team is developing an autonomous solar-powered UAV that is capable of flying overnight. The team hopes the UAV will break the world record for autonomous flight, which is currently 81 hours.

For more information about John, go to coes.latech.edu/john.

"As a student, working at a company as high-powered and well-respected as Radiance Technologies has been a golden opportunity. The Ruston office is full of knowledgeable and experienced engineers who are eager to act as mentors. Additionally, Radiance interns work on the same defense and research projects as the full-time staff. This has given me invaluable experience in an industry I hope to one day be a leader in."

- John Aguillard

Dr. Arden Moore: Research Is Education



Dr. Arden Moore, assistant professor of mechanical and nanosystems engineering, has earned a National Science Foundation Faculty Early Career Development Program (CAREER) award.

For the project, Dr. Moore will develop an innovative approach to pool boiling experimentation that he hopes will provide a better understanding of the underlying physical processes.

This research could have a global impact, helping to lower emissions at power plants and increase efficiency at data centers.

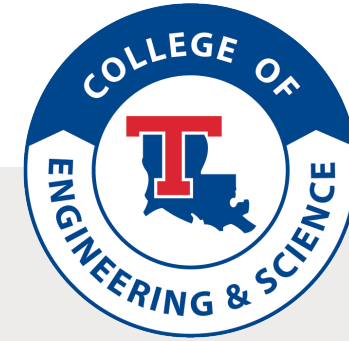
Following Dr. Moore's motto that "research is education," this CAREER project will also support learning and outreach initiatives for K-12 and undergraduate students in coordination with his Multiscale Energy Transport and Materials Laboratory. These initiatives will provide educators with insight into how students best learn about the thermal sciences, improving student success and increasing participation in science, technology, engineering and math disciplines.

Learn more at coes.latech.edu/moore.

"I am a strong believer in experiential education, either through tying classroom concepts to students' everyday observations or by giving them entirely new experiences that reinforce concepts. This philosophy is exemplified within the CAREER grant as well, which treats research activities as student development opportunities hence the theme of 'Research Is Education'."

- Dr. Arden Moore

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The Louisiana Tech University College of Engineering and Science is committed to providing the best possible education to the next generation of professionals by encouraging students to pursue their passions. Hands-on education is just one component of the unparalleled experience that students receive within the College. Leadership that begins in the classroom develops through organizations, research and community-based projects, as students work to solve the 14 Grand Challenges facing the world, to show children and teenagers the wonders of science and engineering and to compete on the national stage.

If you are interested in learning more about the new Integrated Engineering and Science Education Building or in helping the College fund scholarships, faculty initiatives and College programs, or you can learn about opportunities to give at <https://coes.latech.edu/alumni-development/>.

Learn more at
COES.LATECH.EDU/ALUMNI-DEVELOPMENT.



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