



Future STEM Complex



COLLEGE OF SCIENCES AND ENGINEERING

IMPACT REPORT

2018-2023



WELCOME

This document reports on accomplishments and progress during AY 2018–2023. This publication provides context about who we are, where we have been, what we have accomplished, and current momentum to carry us into the future.

This report not only highlights our achievements during the last five years, but also our investments in and/or by faculty, students, facilities, outreach, teaching and research. This strategic communication will be distributed to Southern University System leadership, administrators, alumni, and donors, and key stakeholders nationwide.

We invite you to share in our pride and excitement for the momentum the College has built over the last five years and to discover how we are advancing STEM through innovation, collaboration, service, diversity, and scholarship.

MESSAGE FROM OUR DEAN

Dear Colleagues and Friends of the College of Sciences and Engineering,

I am thrilled to share with you the accomplishments we have achieved under our strategic plan (2018-2023). Over the past five years, we have made significant progress towards achieving our goals, thanks to the hard work and dedication of our entire community.

Our proudest achievements have been the reaccreditation of all ABET programs including civil, electrical, and mechanical engineering, and the computer science program and growth of our research programs. The College secured more than \$25million in grants from federal and state agencies to support cutting-edge research in areas such as advanced materials, renewable energy, cybersecurity, and artificial intelligence. Over \$6million in funds were raised from industry partners and alumni to provide scholarships, tutoring, mentoring, and faculty training. Our faculty have published numerous papers in top-tier journals and have been recognized with prestigious awards and honors.

We have also made significant strides in our efforts to promote diversity, equity, and inclusion in the college. We have proposed new undergraduate programs in computer engineering and construction management and initiatives to support underrepresented groups in science and engineering, and we have worked to create a more welcoming and inclusive environment for all students, faculty, and staff.

Our students continue to excel both in the classroom and beyond. We have seen a significant increase in the number of students participating in research, internships, and other experiential learning opportunities. Our graduates are highly sought after by employers, and many have gone on to pursue advanced degrees at top universities around the world. Finally, I am proud to report that we have made significant investments in our facilities and infrastructure over the past five years. We have renovated many teaching chemistry and biology labs at Fisher Hall and computing labs at the Engineering Pinchback building. In addition, we built a 3-D printing lab. In addition, we were instrumental in assisting the university with securing \$68 million to build the new STEM complex. These investments have enabled us to provide our students and faculty with the resources they need to succeed. As we look to the future, we are excited to build on these accomplishments and continue to push the boundaries of science and engineering. I want to thank all of our faculty, staff, students, and supporters for their hard work and dedication to the college.

Working together, we can achieve great things.

Sincerely,

Patrick Carriere, PhD., P.E.

Dean



MESSAGE FROM OUR ASSOCIATE DEAN FOR ACADEMIC AFFAIRS

Greetings College of Sciences and Engineering (CSE) students, alumni, advocates, and friends. My service in the CSE energizes me as I work in support of academic programs. My commitment includes just practices that bring about a flourishing community, reflective of vast human richness and difference, in science, technology, engineering and mathematics. The CSE hosts undergraduate programs of study in biology, chemistry, mathematics, physics, computer science, civil and environmental engineering, electrical engineering, and mechanical engineering. These programs have a rich history of preparing scholars for graduate studies and careers in government and industry.

I am particularly invested in student success on the campus of Southern University via curriculum development and enhancements. Our work in the CSE ranges from general education courses in support of the university's baccalaureate degree requirements in mathematics and natural sciences to technical courses that prepare scholars for graduate school and high demand jobs. Efforts are underway across the college for new programs of study that build on the synergy across existing CSE programs. Further, the CSE seeks to provide scholars with additional opportunities to earn credentials, through program minors (biology, chemistry, mathematics, physics and computer science) and training programs. These efforts support broader university initiatives to increase enrollment, retain scholars and generate productive alumni.

As the CSE leadership team works together to provide efficient and effective services for STEM scholars, I welcome your insights, in support of the advancement of the CSE mission and vision.

Rachel Vincent-Finley, Ph.D.

Associate Dean for Academic Affairs



“
My commitment includes just practices that bring about a flourishing community, reflective of vast human richness and difference, in science, technology, engineering and mathematics.”

MESSAGE FROM OUR ASSOCIATE DEAN FOR RESEARCH AND GRADUATE PROGRAMS

Welcome to the College of Science and Engineering office of research and graduate studies. In August of 2016, the former College of Sciences and the College of Engineering were merged to form the College of Sciences and Engineering (CSE). The office of Research and Graduate Studies strives to support and advance graduate education and innovative research in the College of Science and Engineering by providing leadership and operational support for faculty and graduate research and scholarship. We provide oversight of five masters degree programs - Biology, Computer Science, Engineering, Physics, and Mathematics; and two doctoral programs, Environmental Toxicology and Science and Mathematics Education.

Our faculty are among the finest in academia, and include excellent instructors, scholars, distinguished researchers, and mentors. Research by CSE faculty and students demonstrates our commitment to the advancement of scientific knowledge in academic and research communities, locally and globally. Ongoing research is supported by federal agencies such as the National Science Foundation, the National Institute of Health, the Department of Energy, NASA, and the Department of Defense.

Patrick F. Mensah, Ph.D.

Associate Dean for Research and Graduate Programs



Committed to supporting and advancing graduate education and innovative research in the CSE by providing leadership and operational support for faculty and graduate research and scholarship

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OUR MISSION

The mission of the College at Southern University and A&M College, a Historically Black, 1890 land-grant institution, is to provide STEM education for a diverse group of students, services to the community through teaching and research, and innovations necessary for CSE graduates to become productive, informed citizens prepared to meet the demands of the STEM driven, ever-changing global industry.

Pictured: Dean- Patrick Carriere, Ph.D., P.E. and 2023 Spring Chief Student Marshall, Mr. Keenan Lamb, Mechanical Engineering Graduate



OUR VISION

The vision of the Southern University College Sciences and Engineering is to be an effective, experienced-based instruction led by a CSE team committed to excellence in preparing students for success in STEM professions, through research, community services, and collaborations necessary to meet the demands of a global society.

OUR CORE VALUES

In performing the rigors of operating our programs and carrying out associated activities, we believe that several core values undergird this commitment and collectively form the guiding principles for our actions as a college. Moreover, we believe these values are reinforced within the college and are transferred as positive attributes to those who work with us in fulfilling our mission. These core values are:

- Innovation
- Diversity
- Student Centered
- Collaboration
- Service
- Scholarship
- Integrity
- Excellence



OUR STRATEGIC GOALS

1

Enhance the infrastructure necessary to maintain and develop high-quality programs

OBJECTIVE [1A]: Enhance and expand utilization of existing CSE's facilities

OBJECTIVE [1B]: Maintain and expand high-quality and competitive instructional delivery systems.

2

Establish and maintain high-quality academic, research, and support programs

OBJECTIVE [2A]: Enhance the quality of existing undergraduate programs.

OBJECTIVE [2B]: Increase research and scholarly activities.

OBJECTIVE [2C]: Establish and maintain graduate programs in high-demand areas page.

3

Increase student outreach, enrollment, and success rates to nationally competitive levels

OBJECTIVE [3A]: Increase college recruitment and retention.

OBJECTIVE [3B]: Enhance student outreach and mentoring effectiveness.

OBJECTIVE [3C]: Enhance effective teaching and learning processes.

OBJECTIVE [3D]: Increase student support from scholarships, internships, etc.

OBJECTIVE [3E]: Improve student performance on Departmental Comprehensive examinations.

4

Improve the recruitment, development, and retention of high-quality faculty and staff

OBJECTIVE [4A]: Recruit and retain faculty having experiences in teaching

OBJECTIVE [4B]: Motivate and sustain faculty toward developing balance in their skill set.

OBJECTIVE [4C]: Motivate and sustain the professional development of staff.

CSE ADVISORY BOARD

The College's Advisory Board provides advice and counsel, assists in establishing program priorities and objectives, provides review and critique, provides liaison to the outside industrial and government communities, promotes College interests inside and outside the University, and helps define needs and assists in the development of resources.

Membership on the Board is of the highest quality and by invitation only from the Dean. Members represent a cross-section of leaders throughout the community, STEM related industries, educational partners, and public service sector.

MEMBERS

Mr. Wilbert Ferdinand Jr. (Chair)

Exxon-Mobil Co. (Retired)

Mr. Christopher Baken III (Co-Chair)

Executive V.P. Nuclear Operations
Entergy Sources

Dr. Isiah Warner

Vice President for Strategic Initiatives
Louisiana State University (LSU)

Dr. Robert Ford, Ph.D.

CEO | DRF Industries, LLC

Mr. Jefferson Reese Jr.

STL Engineering Affordability Lead
The Boeing Co.

Ms. Lenette Jones

NA Fabric Care SNO Innovation Director
P&G

Ms. Darylene Harris

General Manager | Shell

Mr. Stephan Pierre

LAO Logistics | The Dow Chemical Co.

Ms. Laquitta Thomas

Project Execution/Demand Creation IT
Texas Instruments Inc.

Mr. Stephfon Walton

Client Care Project Executive and Technical
Support Lead | IBM

Mr. Freddie Douglas

Director NASA, John C. Stennis Space Center

Dr. Anthony Banks

Lockheed Martin Technical Fellow and
Corporate Ergonomist | Lockheed Martin

Mr. Morgan Watson

President, MEL, Inc.

Mr. Darrell Warner

Former Director, Integrated Quality, and S&MS
AS Integrated Defense System
The Boeing Co. (Retired)

We thank you for your continued support in our efforts to
advance the College of Sciences and Engineering



**PROGRAMS
& RESEARCH**

CAPABILITIES

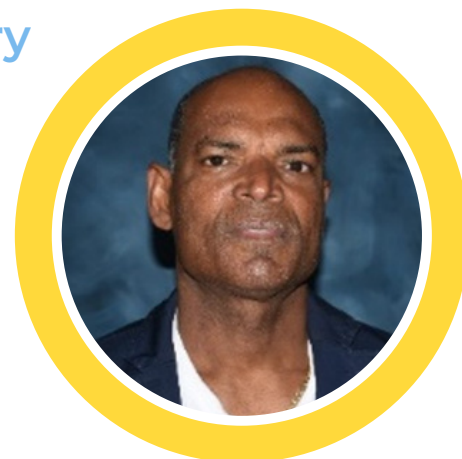
PROGRAMS & RESEARCH CAPABILITIES

Department of Biology and Chemistry

The Department of Biology and Chemistry houses two academic programs: the Biology program and the Chemistry program, where both programs recognize excellent student education as a top priority.

The Biology program, in addition to formal programs of study, offers opportunities for research, service, and laboratory activities. The program seeks to provide quality instruction to biology majors, majors in other sciences, and non-science students enrolled in biology service courses. Additionally, the program aspires to maintain quality instruction and a scholarly atmosphere in its M.S. degree program.

The Chemistry program is committed to preparing our students to be competent, informed and productive citizens. We aspire to provide exemplary classroom instruction and supervised research in a nurturing atmosphere. Our intent is to prepare our students to compete nationally and globally, thus we stress and demand high academic standards while taking personal interest in their success. Chemistry majors may choose one of three main tracks: (1) one that prepares students for industrial or graduate research; (2) one that prepares students for the health professions or life sciences; and (3) one that allows the students to earn a dual degree in chemistry and chemical engineering.



Dr. Oswald D'Auvergne
Chair
oswald_dauvergne@subr.edu



PROGRAMS & RESEARCH CAPABILITIES

Department of Mathematics and Physics

The Department of Mathematics and Physics houses two academic programs: the Mathematics program and the Physics program. The department provides a Bachelor of Science and a Master of Science in Mathematics and Physics with a concentration in either Mathematics or Physics.

The Mathematics programs seeks to meet the needs of the various segments of the university and community. More specifically, our program seeks to build the general level of competence in mathematics necessary for successful living of the well educated citizens. We provide the specific training in mathematics required to meet the objectives of other areas of the University and provide specialized training for the population of high school and middle school teachers. Current research areas include algebra, computational linear algebra, numerical analysis, mathematical biology machine learning and data analysis, data science, mathematical statistics and analysis, optimization and applied mathematics.

The Physics program houses two research groups; the High Energy and Particle Physics Group and the Material and Computational Research Group. Current research areas include optical materials physics and interferometric gravitational wave detection, computational and experimental materials physics, theoretical and experimental nanomaterials, solid physics and quantum mechanics, condensed matter physics, and astronomy.



Dr. Laurence Henry
Chair
laurence_henry@subr.edu



PROGRAMS & RESEARCH CAPABILITIES

Department of Computer Science

The Department of Computer Science houses the following research labs and programs:

- Louisiana Optical Network Initiative, or LONI, in Computational Materials Science and Computational Biomedical research funded by NASA, DOE, NSF, NIH, and Louisiana BoR,
- Center for Information Assurance Education and Research of Southern University and A&M College
- The Mlab for Machine learning, the robotics program partially funded by Raytheon.

Current areas of research includes:

- Programming Languages
- Quantum computing
- Software Engineering
- Operating Systems and Architecture, Algorithms and Theory of Computing and
- Cyber Security & Data Science



Dr. Sudhir Trivedi

Chair

sudhir_trivedi@subr.edu



PROGRAMS & RESEARCH CAPABILITIES

Department of Civil & Environmental Engineering

The Department of Civil & Environmental Engineering is the home of three special programs: the Samuel P. Massie Chair of Excellence Program funded by the Department of Energy (DOE), the Dwight D. Eisenhower Transportation Fellowship Program funded by the US Department of Transportation, and the Southern University Summer Transportation and Energy Institute (STEI). These programs have enhanced the infrastructure of the department by establishing state-of-the-art laboratories. In addition, they provide stipends and scholarships for graduate and undergraduate students. The Civil Engineering program enjoys small class sizes and a faculty committed to excellence in teaching. In addition to the Bachelor of Science in Civil Engineering, the department offers a Master of Engineering in Environmental Engineering with concentrations in: Water and Environmental Engineering Systems and Engineering Management.

Current areas of research include research in five key areas: Environmental Engineering, Geotechnical Engineering, Structural Engineering, Transportation Engineering and Water Resources Engineering. Funded projects include the rehabilitation of sewer infrastructure funded by the Dr. Samuel P. Massie Chair of Excellence program and soil remediation research with respect to petroleum and chlorinated solvent contamination in the area of environmental engineering funded by AREP, NASA and DOE, dam safety research funded by The United States Bureau of Reclamation in the area of water resources engineering, pavements and concrete applications funded by the Louisiana Transportation Research Center, the United States Department of Transportation, the Office of Naval Research, and the United States Department of Defense, via the Army Research Office, as well as the Louisiana Board of Regents in Transportation Engineering.



Dr. Alex Hak-Chul Shin, PE
Chair
hakchul_shin@subr.edu



PROGRAMS & RESEARCH CAPABILITIES

Department of Electrical Engineering

The department has seventeen instructional and research laboratories equipped with state-of-the-art equipment, instrumentation, and computing facilities. Electrical Engineering faculty are currently engaged in 7 educational and basic engineering research projects funded at over 350,000 dollars through grants from state government, federal agencies, and industry. Current areas of research include Communications & Engineering Systems; Internet of Things, Signal Processing & Image Processing, and Electrical Power Systems Electronic Materials & Processing; Semiconductor Device and Sensor Fabrication & Characterization. Additional research areas include: Electronic Materials, Sensors, Nanoparticles and Nanostructures, Polymer applications, Semiconductor Device Physics, Processing & Process Modeling, Device Measurement, Characterization, and Reliability, Bioelectronics, Microelectronics, Control Systems, Data Analysis and Modeling, Electric Power Systems, Computer Networks, Digital Signal Processing, Communications Signals and Systems, Broadband Telecommunications Network Design and Optimization, and Stochastic Modeling.



Dr. Fred Lacy, Ph.D.
Chair
fred_lacy@subr.edu



PROGRAMS & RESEARCH CAPABILITIES

Department of Mechanical Engineering

We are excited about our Mechanical Engineering (ME) Department at Southern University. Currently, we are housed in multi-million dollar state of the art engineering education and research facility (Pinchback Hall) on the Baton Rouge campus. We build upon the great heritage of our past and are ever mindful of the opportunities created by the sacrifice, perseverance, and faithfulness of those who were here before us. Founded in 1956, the ME Department has a rich history of accomplishments, and our tireless faculty, staff, and alumni have made tremendous contributions to society. Our current students are filled with excitement and eagerness to complete their education and start their professional careers and carry the torch of service to mankind.

The Department of Mechanical Engineering offers research in materials science & engineering and thermal science & engineering. Current areas of research in materials science & engineering includes technological and educational innovations in additive manufacturing using augmented virtual reality, multi-scale additive manufacturing polymeric and metal alloys, multifunctional polymer composite materials processing and characterization, mechanical characterization of high ceramic thermal barrier coating, carbon nanotube based functional materials, and micro & nano technologies.



Dr. H. Dwayne Jerro
Chair
dwayne_jerro@subr.edu



*Jaguar Motorsports club members
engineering their competitive automobile*

PROGRAMS & RESEARCH CAPABILITIES

Department of Science and Math Education (SMED)

Research in the Department of Science and Math Education focuses on research in advancing STEM education in both formal and informal environments at the K-12 and college levels, improving student education engagement in STEM and the use of existing state and national databases to develop statistical/mathematical models necessary for STEM curriculum and pedagogy improvement.

Other faculty area of research includes developing retention models, understanding how research-based interventions impact scientific identity development, effective integration of service learning into STEM curriculum, effective integration of technology in STEM, K-12 STEM project-based learning unit development and implementation, effective evidence-based in-service teacher professional development, persistence of students in higher education and the participation of underrepresented groups in STEM disciplines.



Dr. Albertha Lawson
Chair
albertha_lawson@subr.edu



COLLEGE NEWS

PROGRAM REACCREDITATION

The College successfully secures accreditation for Computer Science and Engineering Programs

The Computing Accreditation Commission (CAC) of the Accreditation Board for Engineering and Technology (ABET) evaluated the Computer Science Program during the 2018- 2019 cycle. We are pleased to report the Computer Science Program has successfully secured re-accreditation. The Engineering Accreditation Commission (CAC) of the Accreditation Board for Engineering and Technology (ABET) evaluated the Civil, Electrical, and Mechanical Engineering Programs during the 2021- 2022 cycle. We are pleased to report that all the engineering programs have successfully secured re-accreditation.

ABET accreditation assures the confidence that a collegiate program has met the standards essential to prepare graduates to enter critical STEM fields in the global workforce. Graduates from an ABET-accredited program have a solid educational foundation. They are capable of leading the way in innovation, and emerging technologies, and anticipating the welfare and safety needs of the public.



Engineering
Technology
Accreditation
Commission

COLLEGE OVERVIEW

DEGREES OFFERED BY DEPARTMENT

Department of Civil and Environmental Engineering

- Bachelor of Science in Civil Engineering

Department of Electrical Engineering

- Bachelor of Science in Electrical Engineering
- *Bachelor of Science in Electronic Engineering Technology

Department of Mechanical Engineering

- Bachelor of Science in Mechanical Engineering

Department of Computer Science

- Bachelor of Science in Computer Sciences
- Master of Science in Computer Science

Department of Biology and Chemistry

- Bachelor of Science in Biology
- Bachelor of Science in Chemistry
- Master of Science in Biology

Department of Mathematics and Physics

- Bachelor of Science in Mathematics and Physics
- Master of Science in Mathematics and Physics

Department of Science and Math Education

- Doctor of Philosophy in Science & Mathematics Education

Master of Engineering

- Master of Engineering

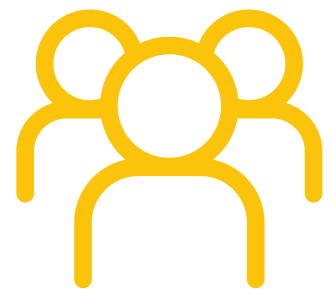
*No longer accepting new students, effective Fall 2020



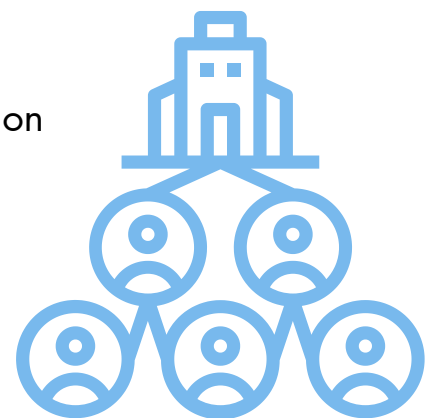
FALL 2022 ENROLLMENT: 1293



COLLEGE FACULTY: 100



COLLEGE STAFF: 30



STUDENT ORGS/CLUBS: 11

COLLEGE HIGHLIGHTS



4

ABET ACCREDITED PROGRAMS



12

DEGREES OFFERED



40+

INDUSTRY AND GOVT. PARTNERS



175

AVERAGE GRADUATES PER YEAR



700

SCHOLARSHIPS AWARDED '18-'23



828

STEM GRADUATES '17-'22



\$1.5M
ISSUED IN STUDENT SCHOLARSHIPS

\$25M+
GRANT FUNDING GENERATED TO ADVANCE THE CSE

GRANT AWARDS

Southern University Awarded \$20 million NSF Grant as part of the LAMDA Alliance

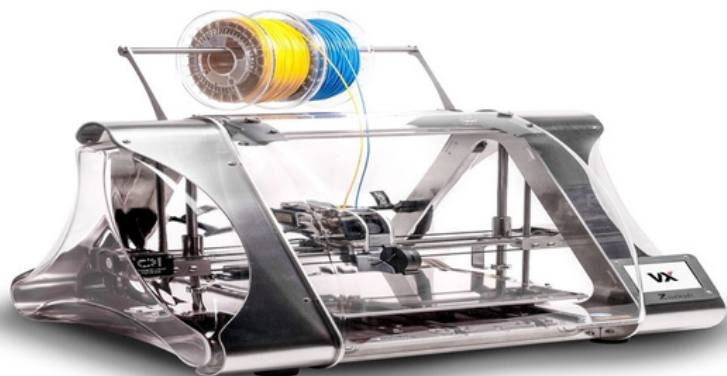
In 2020, Southern University along with other leading institutions in the State of Louisiana received National Science Foundation funding to improve understanding of the additive manufacturing process and the metals and plastics used for layering by using machine learning to improve the design of metals and polymers that give superior performance in additive manufacturing.

Dr. Guoqiang Li serves as the Co-PI.



The Louisiana Materials Design Alliance (LAMDA) award is a \$20 million, five-year grant approved by The National Science Foundation. The consortium will develop research to generate fundamental insights into the complex relationships among composition, processing, microstructure, performance, and structural integrity within the context of additive manufacturing. The LAMDA research is focused on designing complex concentrated alloys and thermoset shape memory polymers specifically for additive manufacturing applications in collaboration with industrial manufacturing and aerospace leaders across the country.

Furthermore, the project includes the development of course materials and the involvement of students and faculty in the state of Louisiana which will result in a well-trained and diverse STEM Workforce. The LAMDA project besides fostering new opportunities for collaborations among LAMDA institutions and aids partnerships with federal agencies and industries to advance research in additive engineering in the state of Louisiana. Which will in turn provide educational and industry learning opportunities for students and invariably expand the Louisiana STEM workforce.



GRANT AWARDS

Dr. Patrick Mensah receives a prestigious \$4M NSF grant and will serve as the PI of the Consortium.

Dr. Patrick Mensah, Associate Dean for Research and Graduate Programs with the College of Sciences and Engineering earns a prestigious NSF grant, totaling \$4M and will serve as the Principal Investigator for the Consortium for Additive Manufacturing Qualification (CAM-Q). As the PI, Dr. Mensah will provide scientific and technical leadership, as well as overall program coordination, and will (a) report to NSF as deemed appropriate; (b) visit the campuses where research is being conducted to oversee project progress and meet with collaborators and stakeholders; and (c) ensure that the various stakeholders of the collaboration operate as a cohesive research enterprise progressing towards the realization of project goals and objectives.



Additive Manufacturing (AM) such as metal powder based 3D printing part qualification has been identified by the America Makes & American National Standard Institute (ANSI) Additive Manufacturing Standardization Collaborative (AMSC) as a standardization gap with high priority in our nation. To make 3D printed metal parts more commercially viable, a rapid parts qualification process is a must. This Research Infrastructure Improvement Track-2 Focused EPSCoR Collaboration (RII Track-2 FEC) award will permit researchers from two EPSCoR jurisdictions (LA and AL) institutions, Southern University (SU), Louisiana State University (LSU), in Louisiana and the National Center for Additive Manufacturing Excellence (NCAME) at Auburn University (AU) in Alabama to establish CAM-Q.

CAM-Q will exploit research opportunities at the intersection of materials science and data analytics, with a technological focus on Laser Beam Powder Bed Fusion (LB-PBF) additive manufacturing (AM), to radically transform the AM parts qualification process. The major outcomes of this project will be an overall framework for AM process design and rapid fatigue performance qualification, together with significant contributions to the education, training, and development of a highly-skilled, multidisciplinary, and diverse workforce to support the industry in the United States. The planned research represents a significant change from the current AM qualification practices. Successful execution of this project will enable the fabrication of metal/alloy parts with a significantly accelerated qualification cycle, make the AM process commercially viable, and propel the US industry to a global leadership position.

GRANT AWARDS

SUBR LIGO Research Team to serve as Principal Investigators on the \$2.5 Million SUBR NSF Project

We are so honored to report **Dr. Luria Young** and members of the SUBR LIGO Research team were participants at the LIGO Hanford Grand Opening that took place on Thursday, June 2, 2022, in the State of Washington. The current 2.5-million-dollar SUBR NSF Project #2012087, Collaborative Research: LIGO SEC Partnership-Strengthening Communities of Learners are leaders in LIGO's professor development referenced throughout the presentation. Dr. Young is the PI on this project and Dr. Michael Stubblefield and Dr. Albertha Lawson are Co-PIs.



- SUBR LIGO research has been pioneering research in LIGO since its inception in Louisiana. Also invited and in attendance was Louisiana Legend and SUBR James and Ruth Smith Endowed Emeritus Professor of Physics, Southern University Principal Investigator to the LIGO Scientific Collaboration awarded the Nobel Prize in Physics, 2017 Dr. Stephen McGuire.

- Dr. Young serves as a leader on several additional externally funded and successful programs, including the Shell Louisiana STEM Collaborative, which provides professional development opportunities for teachers and undergraduate students. Dr. Young earned a baccalaureate degree in biology from SUBR, a master's degree and educational specialist certificate in science education from Louisiana State University (LSU) and a doctorate degree in educational leadership, research, and counseling from LSU. Her research focuses on the persistence of students in higher education and the participation of underrepresented groups in STEM disciplines. Dr. Young is committed to providing opportunities for underrepresented groups of students to excel in college and careers.



UNIVERSITY AWARDS

FALL 2020 OUTSTANDING RESEARCHER AWARD RECIPIENT

Dr. Yaser Banadaki is an Assistant Professor in the Department of Computer Science. He joined Southern University in January 2016. Dr. Banadaki has a distinguished record of excellence in academic teaching and research activities and industry experience. He has published over 50 research articles and a book on Computational Modeling of Materials and Devices to address the emerging design of next-generation computer hardware. He secured several federal and state supports for his research in Machine Learning Applications for Knowledge Discovery in Science and Engineering. His current awards totaling \$715,000 secured from the National Science Foundation, National Security Agency, and Louisiana Board of Regents.



Dr. Banadaki has supervised graduate and undergraduate students for data-driven interdisciplinary projects that led to many awards including four Best Paper Awards in the 93rd and 94th Annual Meetings of the Louisiana Academy of Sciences.

Dr. Banadaki's current research interests include Machine Learning and Data Mining for Knowledge Discovery, Cyber Security and Intrusion Detection using Machine Learning Techniques, Computational Material Science for Emerging Sensing and Information Technology, Quantum Computers and Nanotechnology and Computer Science Education for STEM.

Dr. Banadaki is also leading GenCyber Cybersecurity Program, funded by the National Security Agency, which aims to improve cybersecurity awareness among K-12 students.

Dr. Banadaki have a broad range of research experience in applying computational analysis and machine learning in a variety of research projects. Harnessing the big data revolution is among the NSF's 10 big ideas, and "Integrating Machine Learning across its functions" is among the DoD missions.

Congratulations Dr. Banadaki. Your continuous research efforts are appreciated.



UNIVERSITY AWARDS

FALL 2021 OUTSTANDING RESEARCHER AWARD RECIPIENT

For over 20 years, **Dr. Lidiya Dubytska** has focused her work on understanding host-pathogen interactions, including host defense against extracellular and intracellular pathogens and detail molecular mechanisms associated with the ability of pathogens to survive inside of host cells. Her overarching research interest is in the deep mechanisms associated with the virulence of bacterial pathogens and in the development of strategies for protection and treatments against these pathogens. A deeper understanding of the molecular mechanisms of virulence can be effectively converted to practical use for disease control. A better understanding of the role of bacterial virulence genes and toxins that are delivered to host cells, and knowledge of host immune/inflammatory response is critical for the development of better intervention strategies.

More specifically Dr. Dubytska is interested in examining bacterial virulence factors that include secretion systems and effector proteins, toxins and virulence genes and the host response to those factors. A better understanding of the role of bacterial virulence genes and toxins that are delivered to host cells and knowledge of host immune/inflammatory response is critical for the development of better intervention strategies. Dr. Dubytska's interest has never been limited to the specific pathogens. As a Molecular Biologist, she is most interested in the molecular mechanisms that allowed tiny pathogens to create various illnesses. Since August 2017, Dr. Dubytska has been working as an Associate Professor at Southern University of Baton Rouge (department of biology). Her work primarily focused on *Legionella pneumophila* virulence, *Borrelia burgdorferi* and *Edwardsiella ictaluri*. She has published four peer-reviewed papers, five abstracts, one genome and one plasmid sequence. Dr. Dubytska has received an Institutional Development Award (IDeA) from the National Institute of General Medical Sciences of the National Institutes of Health under grant number 5 P20 GM103424-15 and 3 P20 GM103424-15S1 (\$70,000). Importantly, as a Principal Investigator Dr. Dubytska has received research grants from NIH \$415,000, to work on *Legionella pneumophila* pathogenesis, and an Excellence in Research (EiR) grant from NSF in the amount of \$727,015 to work on understanding molecular mechanisms of *E. ictaluri* virulence.

Dr. Dubytska's goals are as follows:

- Develop a diverse and productive research program in molecular biology of bacterial pathogens.
- Provide a strong scientific basis for understanding the virulence theory.
- Mentor graduate and undergraduate students in their research career development and prepare them for successful post-graduate lives.
- Help students to develop lifelong learning skills that will allow them to become productive members of society.
- Continue to grow and improve herself in the research area.

Congratulations Dr. Dubytska. Your continuous research efforts are appreciated.



UNIVERSITY AWARDS

SPRING 2022 OUTSTANDING RESEARCHER AWARD RECIPIENT

Dr. Patrick Mensah, Formosa Endowed Professor of Mechanical Engineering, Associate Dean for Research, Graduate Programs and Faculty Development in the College of Sciences and Engineering. Member of the 2021 inaugural Standing Council of the Engineering Research Visioning Alliance (ERVA). ERVA is a five-year initiative funded at a level of \$8M, through the National Science Foundation (NSF) Directorate for Engineering to enable the United States (US) to maintain its leadership in research and innovation with respect to the evolving engineering landscape. Dr. Mensah served as a Program Director in the Division of Human Resources Development at the National Science Foundation from 2007-2009. Dr. Mensah is the Principal Investigator and Director or co-PI of several funded research awards including the following:



Louisiana Board of Regents

- SUBR/Board of Regents/SREB Doctoral Fellowship 8/2022 to 7/2025 \$47.5 K, PI
8/2021 to 7/2024 \$90 K, PI; 8/2020 to 7/2023 \$45 K, PI
- Southern University System – Cybersecurity Talent Initiative Program (SUS-CyberTip) Phase 2, 06/2022 to 05/2023, \$205,885, co-PI; 06/2021 to 05/2022, \$245,244, co-PI

National Science Foundation (NSF)

- NSF EPSCoR Track 2 FEC- Rapid Qualification for Additively Manufactured Safety-Critical Components (2022-2026), \$4 Million, PI
- CREST Center for Next Generation Multifunctional Composites, 2017-2023, \$5.2 Million PI
- Louis Stokes Science, Technology, Engineering, and Mathematics (STEM) Pathways and Research Alliances: Louis Stokes Louisiana Alliance for Minority Participation (LS-LAMP) (\$3.2 M 2020-25). LS-LAMP is a statewide alliance of 14 institutions. PI
- Louisiana Materials Design Alliance (2020-2025) \$20 Million. He serves as a senior Co-Investigator and member of the Leadership Team
- Enhancing Additive Manufacturing with Cybersecurity and Virtual Reality, 2019-2024, Amount \$1,650,090, Co-PI

National Aeronautics and Space Administration (NASA)

- Tailorable Universal Feedstock for Forming (TuFF) NASA University Leadership Initiative (ULI) funded by NASA Headquarters/University of Delaware, 10/2020 to 9/2025, \$400,000
- Additive Manufacturing of Fire Retardant and Repairable Composite Structures Based on Lunar Regolith and Vitrimer Epoxy under Lunar Conditions, NASA Marshall Space Flight Center, 9/2021 to 8/2022, \$51,783

Industry

- Formation of Complex 3D Metal Architecture Using 3D Printed Polymers as Electroplating Scaffolds, funded by Clarkson Aerospace Corp, 10/2021 - 9/2023, \$249,974 Co-PI
- Modeling and Analysis of Cryogenic Thermal Transitions using Computational Fluid Dynamics (CFD) and Thermomechanical Analysis, United Launch Alliance, \$50 K 8/2020 to present, \$50,000 PI

All these projects include research Experience for undergraduates (REU) and research experiences for teachers (RET) programs that are integral components for ensuring increasing diversity and minority STEM workforce development in the USA.



UNIVERSITY AWARDS

SPRING 2023 OUTSTANDING RESEARCHER AWARD RECIPIENTS

SPRING 2023

Guang-Lin Zhao, Ph. D., Professor of Physics
Physics Department and Nano Materials
Laboratory

Patent: A patent application filed with the U.S. Patent Office, Serial No. 17/965,722, on October 22, 2022. Title: "Multifunctional Carbon Nanotubes-Glass Fiber-Epoxy Composites with High Density Interfaces for Microwave Absorption and Structural Materials". Inventor: Guang-Lin Zhao, Co-Inventor: Rong Zhao. Southern University and A & M College, Baton Rouge, Louisiana.



Recent Grant Funding Awards for Research Projects

A research project entitled "Electric Field Polarization on Heteroatoms Doped Carbon Nanomaterials and Their Electrocatalytic Properties" is funded by the Army Research Office (ARO), Grant Number W911NF-22-1-0099, funding amount \$583,400, for a period of three years from 7/1/2022 to 6/30/2025. PI: Guang-Lin Zhao.

A research project entitled "Partnership for Research and Education on Molecules at High Pressures" is funded by the National Science Foundation (NSF), award number: 2216805, for the period from 8/1/2022 to 7/31/2025, funding amount \$900,000.00. PI: Guang-Lin Zhao. Co-PIs: Gilbert Collins (University of Rochester (UR)), Shizhong Yang (SU), Kinesha Harris (SU).

A research project entitled "Exploration of New Multifunctional Polymer Nano- Composites for Electromagnetic Wave Absorption and Light Weight Structural Materials" is funded by the Office of Naval Research (ONR), award # N00014-22-1-2744, for the period from 9/1/2022 to 8/31/2025, funding amount \$450,000.00. PI: Guang-Lin Zhao.

National Science Foundation Award # 1736136 entitled "CREST Center for Next Generation Multifunctional Composites (NextGen Composites Phase II)", for an award amount of total \$5,000,000.00 (5 millions) for five years, project period 9/1/2017 – 8/31/2023. PI: Patrick Mensah; Guang-Lin Zhao is a co-PI of this center project and the lead PI of one of the three subprojects.



GRANT AWARDS

NSF Awards the Louis Stokes Science, Technology, Engineering and Mathematics (STEM) Pathways and Research Alliances: Louis Stokes Louisiana Alliance for Minority Participation (LS-LAMP) \$2.5M for Louisiana Statewide Program

Dr. Patrick Mensah, Associate Dean of Research and Graduate Programs in the College of Sciences and Engineering at Southern University, has received funding at \$2.5M for five (5) years (2020-2025) for the **“Louis Stokes STEM Pathways and Research Alliances: Louis Stokes Louisiana Alliance for Minority Participation (LS-LAMP)”**. This funding is for a Statewide program consisting of fourteen (14) other partner campuses across Louisiana and a research facility, the Louisiana Universities Marine Consortium (LUMCON). These partner institutions are Dillard University, Grambling State University, Louisiana State University, Louisiana State University at Alexandria, Louisiana Tech University, McNeese State University, Nunez Community College, Southern University–Baton Rouge (Lead), Southern University at New Orleans, Southern University Shreveport, Tulane University, the University of Louisiana at Lafayette, University of New Orleans, and Xavier University of Louisiana. Southern University at Baton Rouge (SUBR) is the lead institution for LS-LAMP.



The program is funded by the National Science Foundation (NSF) through the Louisiana Board of Regents. The objectives of LS-LAMP are to increase the number and quality of minority students earning the Bachelor’s degree in a science, technology, engineering, or mathematics (STEM) discipline and to promote the successful pursuit of advanced STEM degrees by many of these alumni. These objectives are achieved by implementing the U.S. Presidential Award-Winning Ten-Strand Systemic Mentoring Model of the Timbuktu Academy. This model has been adopted and adapted by all partner campuses. SUBR LS-LAMP provides scholarships to qualified, minority undergraduate students majoring in a STEM field at SUBR. There presently are over 40 LS-LAMP undergraduate STEM scholars at SUBR. Dr. Patrick Mensah serves as the Statewide Project Director and Campus Coordinator for SUBR. 2020-2025 Co-investigators for LS-LAMP Statewide are Dr. Carrie Robison, Deputy Commissioner for Sponsored Programs at the Louisiana Board of Regents, Dr. Gloria Thomas, Director of Student Success at Louisiana State University, Dr. Diola Bagayoko, SUS Distinguished Professor Emeritus of Physics and Director Emeritus of the Timbuktu Academy, and Dr. Christopher Guillory, Associate Professor for SMED Program at SUBR.

THE C.A.V.E. @ SU

Our State-of-the-Art Virtual Laboratory



The College of Sciences and Engineering has a new Windows 10 CAVE (Cave Automated Virtual Environment) with 6 projectors 4 walls and 2 floors) that was installed in spring 2021 replacing the three wall Windows XP CAVE. This is only one of two 6-channel/projector Mechdyne-built CAVEs in the country. The CAVE is a widely used walk-in visualization environment in the world. What makes this CAVE even more unique is its fully projected front area that is 22.5 feet wide and 7.5 feet high. CAD models from any of our engineering programs (Solid Edge, AUTOCAD, Fluent, etc.) can be viewed in the CAVE.

Faculty and students can visually interact with their data in real time 3D by wearing stereo glasses and using a gamepad to steer thru the data. Various applications can be built in the UNITY game-development environment for used in the CAVE to view data. For backwards compatibility, the CAVE library is also enabled.

CSE I-STAR LEARNING CENTER

The Integrated Student, Teaching, Advisement, and Research Learning Center (I-STAR-LC) is a 3-prong approach to increasing retention, course success and graduation rates. Efforts include: 1) A dual team approach to student advisement of freshmen, sophomore and beyond. The dual approach pairs seasoned mentors, advisors and tutors with junior mentors, advisors and tutors thereby creating a culture of Pay-it-Forward (PIF) for education within colleges and across the institution; 2) Tutoring includes digital and electronic capturing of tutorial sessions that are available to students that participate in tutorial sessions and those that do not have the opportunity to participate in a tutorial face-to-face session via web access. Copies of the tutorial session are digitized and stored in the cloud; 3) The focus of the LRCs is student access to a collaborative, assisted and/or individual learning environment. It is worth noting that not only has Dr. Fareed Dawan installed this Learning Center in our own college but has also installed them in 4 other colleges across campus with more to come.



SMED HIGHLIGHT

SOUTHERN UNIVERSITY CO-HOST 2020 GULF STATES MATH ALLIANCE CONFERENCE

The Science and Mathematics Education Doctoral Program (SMED) under the leadership of Dr. Albertha Lawson hosted and co-sponsored with the University of Texas at Arlington the 2020 Gulf States Math Alliance Conference on the campus of Southern University and A&M College, in Baton Rouge Louisiana.

The GSMath seeks to encourage and provide opportunities for members of under-represented groups - ethnic minorities, women, or first-generation college students, who wish to pursue undergraduate or graduate studies in mathematics or a mathematically related field. The conference which occurred from the 14th through 16th of February 2020, brought to campus over 240 registered participants. The Gulf States Math Alliance (GSMath) is a community of mentors and scholars in the states of Texas, Louisiana, and Mississippi working with the National Math Alliance and affiliates to make education in mathematics and mathematically related subjects available to everyone.



FACULTY NEWS

SMED's BEE-Tech program receives Public Choice Award

The BEE-Tech program led by SMED faculty member **Dr. Nastassia N. Jones** received the Public Choice award for the Exploring Virtual Reality with Secondary STEM Teachers video in the NSF funded 2022 STEM for ALL video showcase held May 10-17. This exploratory project supports the professional growth and development of current middle and high school STEM teachers by providing multiyear summer training and school year support around three specific areas:

- (1) environmental sciences - wetlands conservation and management content;
- (2) using and creating virtual field trips;
- (3) supporting VR implementation through classroom-based action research.

This project will bring locally relevant VR experiences to teachers and students who are underrepresented in STEM. We are especially interested in discussions regarding building and assessing teacher collaborative communities and connecting with others who are using virtual reality in STEM teaching and learning.

The video can be viewed here: <https://multiplex.videohall.com/presentations/2267>



Nastassia N. Jones, Ph.D.



STAFF SPOTLIGHT

MR JASON CHANG WINS SPECIAL RECOGNITION AWARD

Each year, during Engineering Week, the students recognize a staff employee who go above and beyond. For two years in a row, Mr. Jason Chang, Director of Information Technology, earned the "Outstanding Staff" award. His service, passion, and commitment to students has afforded him this well deserved recognition in 2021 and 2022.



COLLEGE HIRES NEW DIRECTORS

In 2022, the College made two strategic hires: Dr. Toni Jackson was appointed as our Director of Advancement and Mr. Thalamus Marshall was hired as our Director of Recruitment. Our newest directors will drive the Colleges' advancement and recruitment initiatives, in effort to increase enrollment and resources to support the CSE.



Dr. Toni Jackson



Mr. Thalamus Marshall

COLLEGE HOLDS INAUGURAL GRADUATION SEND-OFF

Fall 2022 marks the semester of the Inaugural Graduation Send-off, a celebratory event in honor of our graduates and all of their academic accomplishments. Mr. Wilbert Ferdinand, Chair of the CSE Advisory Council and CSE alum, served as the Keynote Speaker and provided our graduates with a special send-off message.



CAPTURED MEMORIES FROM THE SPRING '23 SEND-OFF



INAUGURAL CSE HALL OF FAME INDUCTEES



BETINA BRANDON



LAQUITTA THOMAS



WILBERT FERDINAND

STUDENT NEWS

11-YEAR OLD PRODIGY DECLARES THE CSE AS HOME



ELIJAH PRECCIELY
Physics & Mechanical
Engineering Student

**“It’s great to be a
third generation
Jaguar. I am really
happy for this
opportunity”
-Elijah Precciely**

Dailyynn Thomas and Dondy Dorlus represent Southern University at Lockheed Martin's 2022 Virtual Ethics in Engineering Case Competition

While many students were off enjoying the Mardi Gras holiday, students Dailyynn Thomas and Dondy Dorlus worked diligently, alongside their faculty advisor, Brian Warren, Mechanical Engineer Professor and Team Coordinator, Janifer Peters, getting prepared to present their solutions to a fictional case involving ethical, business and engineering dilemmas. As the only HBCU Electrical Engineering team competing in this three-day marathon, Thomas and Dorlus represented HBCUs and Louisiana to the fullest. Team Coordinator, Janifer Peters stated “Dailyynn and Dondy put SU College of Engineering on the map! The Lockheed Martin Executives in Maryland and student participants not only know about SU's Human Jukebox, but also know and will remember our brilliant Electrical Engineering Senior Majors Dailyynn Thomas and Dondy Dorlus”.

When asked about her experience, Dailyynn enthusiastically said, “This experience was one like no other. It gave me a chance to be a creative engineer and explore how to solve possible real-world problems, and observe the intensity of what engineers and companies are responsible for in our society. When it comes to business and technology, ethics awareness is a good investment, and I hope that our University continues to participate in the competition for years to come”. As always, we are extremely proud of our students for striving for excellence and going beyond the possible!



Dondy Dorlus | Electrical Engineering



Dailyynn Thomas | Electrical Engineering





SU student wins \$20,000 at the 2022 ServiceNow HBCU CONNECT Hackathon!

The founders of HBCU Connect have partnered with ServiceNow, a multi-billion-dollar software company known for its cloud computing platform, to launch a 6-week, part-time Virtual Learning Experience + Hackathon. The purpose of this event was to provide a platform for students to combine their diverse perspectives to help solve some of the world's most challenging problems around healthcare, housing, generational wealth, digital literacy, and education. **Temitope Olokunde**, a SUBR SMED student, collaborated with students from Tuskegee University, Fisk University, and Western Governors University and formed- Swift Workflow.

Swift Workflow's application digitizes the workflow for creating and accessing preference cards in surgical procedures. Preference cards are catalogs of specific tools, supplies, and surgical needs that surgeons require to perform a surgery. The application works by letting the nurse manager create a preference card. The nursing supervisor then notifies the surgical team, which prepares the required equipment for the procedure.

Over 250 students competed for the handsome cash prizes and we are proud to report Temitope and team placed 2nd and secured \$20,000! In addition to securing the handsome cash prize of \$20,000, the students learned more about ServiceNow, new technologies, and secured opportunities to land internships and full-time employment.

Swift Workflow
App Category: Digital Literacy

			
Eryn Hillard Tuskegee University Business Management	Temitope Olokunde Southern University Computer Science	Folusho Adeyemi Fisk University Computer Science	Stephanie Davidson-Malcolm Western Governors University Nursing

now

Bring your you.

STUDENT AWARDS



SU Alumna Earns Prestigious GEM Fellowship

Congratulations to Daria Bentley, a Spring 2020 graduate in Mechanical Engineering, has been awarded the highly competitive Graduate Education for Minorities (GEM) Fellowship. She has been distinguished as a GEM Fellow for the 2021 cycle.

Daria is currently pursuing a Ph.D. in Mechanical Engineering at The Ohio State University. She earned the Bachelor of Science (BS) degree in Mechanical Engineering from Southern University and A&M College in Baton Rouge (SUBR), Louisiana, in the spring of 2020



Ashley Alfred Wins First Place

Ashley Alfred was a Scholar at the Southern University's CREST, LS-LAMP, and the Timbuktu Academy. She was accepted for the Research Experience for Undergraduates (REU) program in Harvard University and Her poster presentation won first place at the 2020 Emerging Researchers National (ERN) Conference. She is currently pursuing a Ph.D. in Applied Mathematics at the University of Texas Arlington (UTA). Her Mentor is Dr. Patrick Mensah.



SU P.hD Candidate Receives NCWIT Aspirations in Computing (AiC) Educator Award

Ajayi Anwasedo, a 2021 NCWIT Aspirations in Computing (AiC) Educator Award recipient! She was selected from more than 300 applicants from all 50 states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, Guam, and all U.S. overseas military bases. The AiC Educator Award identifies exemplary formal and informal educators who play a pivotal role in encouraging 9th-12th grade students who self-identify as women, genderqueer, or non-binary to explore their interest in computing and technology. The award recognizes these educators for their efforts to promote gender equity in computing.



Brittany Hinyard

Brittany Hinyard is a P.hD student in the Department of Science and Math Education. She was accepted to the 2020-2021 Community for the Development of Research in Education (CADRE) Fellows program. Her application was supported by the Department of Science and Math Education because of the recently awarded grant through the NSF Discovery Research K-12 program.

RESEARCH EXPERIENCE FOR UNDERGRADUATES

The CSE hosts undergraduate research during the academic year and during the summer. Research Experiences for Undergraduates (REU) have been hosted under state, federal, and corporate sponsorship. Sponsored research programs include the Next Generation Multifunctional Composites (NextGen Composites Phase II) CREST Center (NSF grant number HRD-1736136), the Louisiana Materials Design Alliance (LAMDA, NSF grant number OIA-1946231 and the Louisiana Board of Regents), the Dow Scholars Undergraduate Research Experience (SURE) Program and additional joint initiatives with partner institutions. Through these initiatives the CSE has hosted over 200 undergraduate research projects.



SU students earn coveted IBM Masters Fellowship for three consecutive years



Lauren Johnson
Mathematics

The IBM Masters Fellowship Program seeks to support exceptional Masters students who want to make their mark in promising and disruptive technologies, regardless of their field of study. The award recipients include those who are studying computer science, medical research, law, social sciences, physics, engineering, and math at Historically Black Colleges and Universities in the United States. Congratulations to our 2020-2022 IBM Masters Fellows.



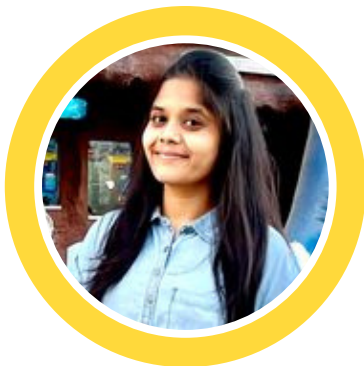
Vaishnavi Kasala
Computer Science



Amrin Syed
Computer Science



Sunita Sagi
Computer Science



Saisudha Naragoni
Computer Science



Ebenezer Essel
Electrical Engineering



Chinwe Aghadinuno
Electrical Engineering

MEDTRONIC INTERNS



"My favorite thing about Medtronic is their commitment to diversity in their services and in their workplace. They offer a large plethora of services to aid all types of illnesses".

-Kennedy C.

Southern University Computer Science Students Win Big for the Second Year in a Row at the LAS Annual Meeting

The Louisiana Academy of Sciences (LAS) is one of the oldest organizations whose focus is to unite the scientists of Louisiana for the purpose of encouraging research and education in all branches of science. Southern University Department of Computer Science (CMPS) students, Nathaniel Price and Rayven Joubert won the "best graduate and undergraduate papers" respectively at the 94th Louisiana Academy of Sciences Annual Meeting, in 2020.

Price, a M.Sc. student in the Department of Computer Science, Southern University, LA. His research interests included machine learning applications for detecting cyber-attacks and intrusion detection. Dr. Banadecki served as his Advisor.

Joubert, a B.Sc. student in the Department of Computer Science, Southern University, LA. Her research interests included machine learning applications for image classification. Dr. Banadecki served as her Advisor.

Students from the Division of Computer Science, Information Security, Mathematics, and Statistics won several awards at the 95th Louisiana Academy of Sciences Annual Meeting.



Nathaniel Price



Rayven Joubert



STUDENT NEWS

SUBR Allstar, Raelyn Henderson featured in the coveted 2022 EBONY X OLAY HBCU STEM Queens Edition

Raelyn Henderson, a senior mechanical engineering major was selected to be one of the faces highlighting beauty and brains in STEM fields. When asked about her interest in STEM, Raelyn said, "I come from a family of engineers, and growing up, I worked inside my dad's auto repair shop answering phones since like the age of 6. Creation and learning how things operate have always been in my blood."

Internships Brag: Harvard, NASA (Huntsville), Bayer, and Booz Allen Hamilton

Daily Affirmation: "Never let anyone tell you that the sky's the limit when there are footprints on the moon."



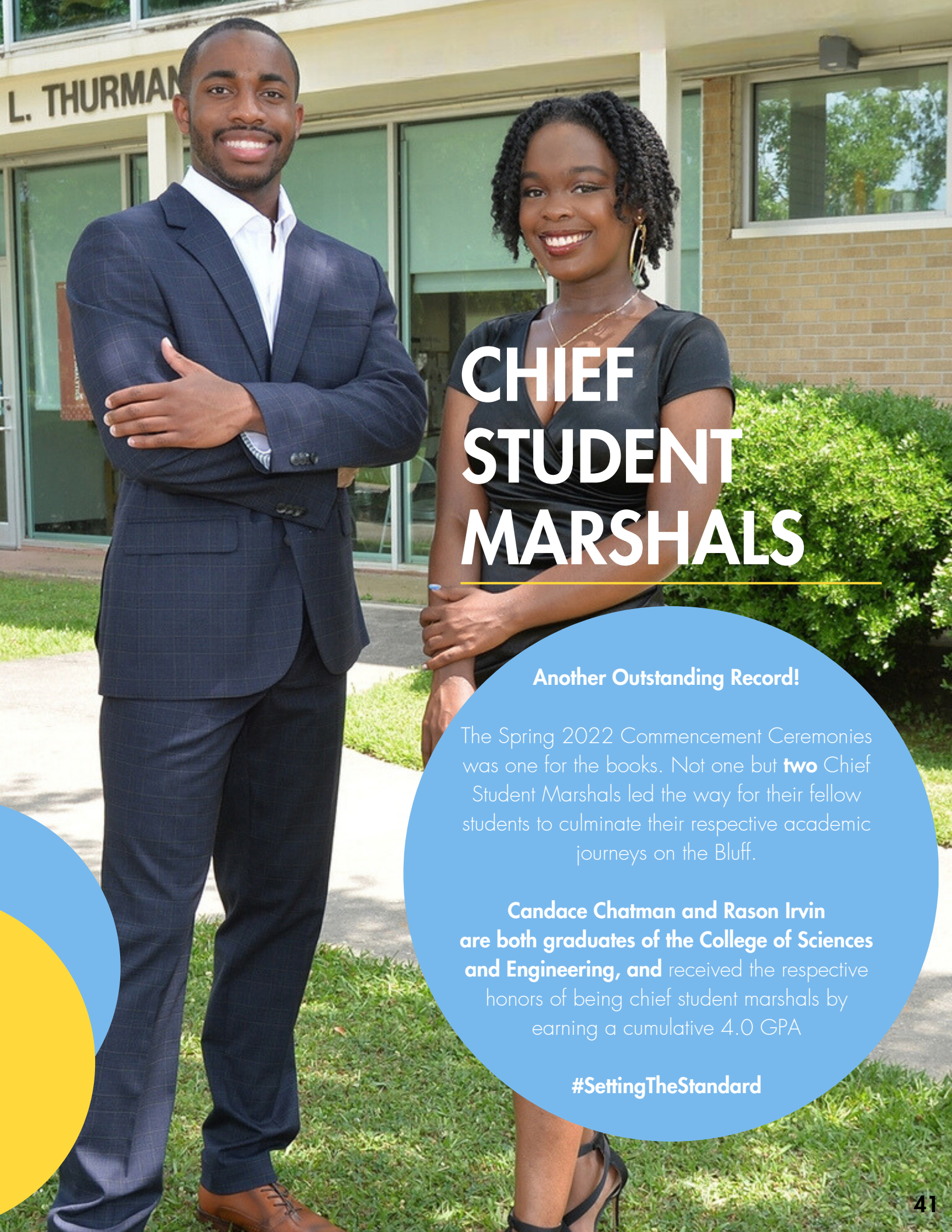


CHIEF STUDENT MARSHAL

ELLA DODOR

A native of Togo, West Africa, and resident of Baton Rouge, was the Summer 2021 chief student marshal. She graduated on Aug. 6 with a Bachelor's degree in Computer Science with a 3.862 GPA. While at Southern, Dodor was a Dolores Margaret Richard Spikes Honors College scholar, LS-LAMP program participant, Beta Kappa Chi Scientific Society member, National Institute of Science member. She is a fall 2020 initiate of The Beta Psi Chapter of Alpha Kappa Alpha Sorority Inc. and spring 2021 inductee of the Collegiate 100 Black Women of Southern University. Dodor's next step included beginning the Ph.D. program in software engineering at the University of California Irvine.

[#SettingTheStandard](#)



CHIEF STUDENT MARSHALS

Another Outstanding Record!

The Spring 2022 Commencement Ceremonies was one for the books. Not one but **two** Chief Student Marshals led the way for their fellow students to culminate their respective academic journeys on the Bluff.

Candace Chatman and Rason Irvin are both graduates of the College of Sciences and Engineering, and received the respective honors of being chief student marshals by earning a cumulative 4.0 GPA

#SettingTheStandard



SPRING 2023 CHIEF STUDENT MARSHAL

MR. KEENAN LAMB

A native of Opelousas, LA led his fellow graduates on May 12 and receive a Bachelor's Degree in Mechanical Engineering with a 3.9 GPA.

"I am extremely humbled and blessed to serve as the chief student marshal at such an illustrious institution," Lamb said. "This accomplishment is a direct result of all the hard work and dedication that I have put towards my education from elementary school to now."

He is now a second-generation graduate and join his mother as an alum. After graduation, Lamb will begin a career with Lockheed Martin as an aeronautical engineer

#SettingTheStandard

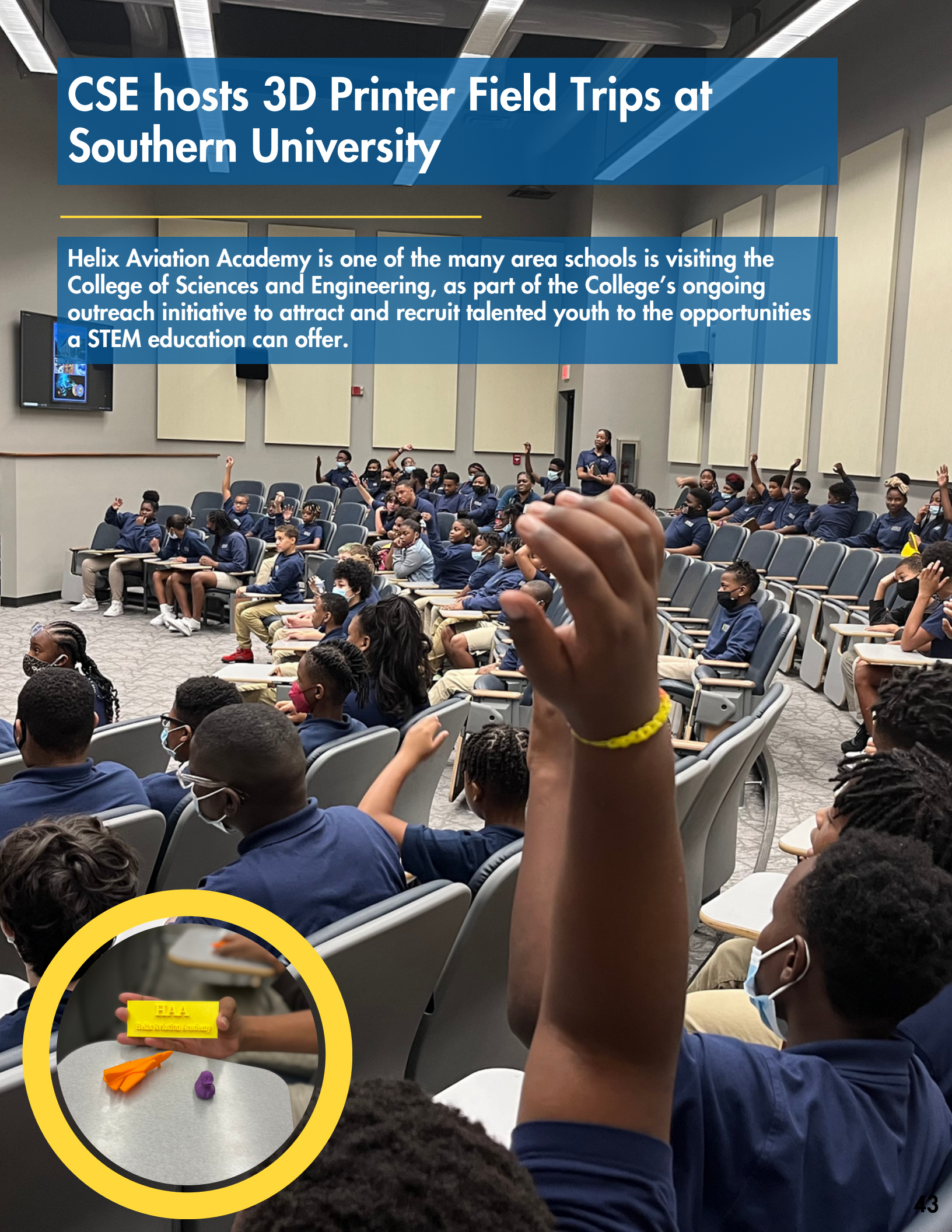
ES & ENGINEER

OUTREACH AND

ENGAGEMENT

CSE hosts 3D Printer Field Trips at Southern University

Helix Aviation Academy is one of the many area schools is visiting the College of Sciences and Engineering, as part of the College's ongoing outreach initiative to attract and recruit talented youth to the opportunities a STEM education can offer.



CSE produces 3-D masks for healthcare professionals in response to COVID-19



A team of staff and students at the College of Science and Engineering are helping to stop the spread of the COVID-19 virus by making 3D washable medical masks for health care professionals using 3D printers in the New Entergy-sponsored lab. The Team has produced 2000 masks in the lab, which contains among other equipment, 40 desktop-sized and one commercial-scale printers. The lab was funded by a \$2M grant presented to the university by Entergy in 2018 and matched by Gov. John Bel Edwards for a total of \$4M. The masks have an ear loop design, a special filter, a layer of cushion designed to make the masks comfortable to wear for long periods of time especially for health professionals and are made from plastic. The masks are reusable and can be washed. Reusable masks are not only helpful in stopping the spread of COVID-19, but also in managing the shortage of masks and the environmental issue caused by improper disposal of the mask. The new 3D printing capacity has demonstrated our commitment to respond directly to community needs and engineering with the world in mind.



CSE shows strong presence at the Inaugural A&M Day event

A team of staff and faculty from the College of Science and Engineering were front and center at the A&M Day Showcase. The Showcase highlighted academic offerings including pathway programs from campuses across the state of both institutions to local middle/high school students. The event was sponsored by Verizon in partnership with Mayor's Office.



2023 EBR 7th Grade Day at SU generates impressive crowds and interest in STEM ▶▶▶

Over the course of two weeks, over 1800 students visited Pinchback Hall and other campus departments giving them access to college pathways, at an early age, to help them make college choice decisions. Through curated hands-on demonstrations, the College was able to enthusiastically show how STEM education plays a major part in everyday life and the fruitful career opportunities available. This initiative is part of the "Capital Area Promise", a collaborative initiative between Baton Rouge's education institutions- Southern University, LSU, and Baton Rouge Community College—to guarantee that all students have the opportunity to enroll in college and/or enter the workforce with skills to succeed.



CSE Summer Institutes continue to provide relevant STEM summer experiences



The College of Sciences and Engineering hosts Summer Institutes that provide opportunities for middle and high school students to engage in science, technology, engineering and mathematics (STEM) activities at Southern University and A&M College through four-week summer programs. The goal of the Summer Institutes is to broaden the awareness of and access to STEM careers by exposing the participants to available options in an environment that facilitates intellectual exchange, academic enrichment, and fosters learning, sharing, and growing processes. The signature programs include the Engineering Summer Institute and the Science Summer Institute.

The first Engineering Summer Institute (ESI) was held in 1974. This program has a rich history of engaging students and recruiting students to engineering programs at Southern University. ESI is a longstanding summer program designed to create an awareness of opportunities which exist in engineering disciplines – particularly civil, electrical and mechanical engineering - and to stimulate an interest more generally in STEM.

The Science Summer Institute (SSI) is a compilation of the Summer Transportation Institute (2000), the Summer Transportation and Energy Institute (2010) and SU STEM (2018). We have taken the best of each program and combined them all under the new umbrella of the Science Summer Institute. SSI is designed to create an awareness of opportunities that exist in science – particularly biology, chemistry, and physics - and to stimulate an interest more generally in STEM.

The Summer Institutes consist of two components: academic and enhancement. The academic component introduces participants to engineering or science scenarios. The enhancement component includes mathematics, technical communication, and professional development such as time management, study habits, and computer skills. Weekly fieldtrips reinforce academic and enhancement activities and show STEM in action.





SUBR STEM DAY

SU STEM Day was birthed in 2017 and remains a signature outreach program that continues to attract hundreds of students, each year, from community schools such as Scotlandville High School, Southern University Laboratory School, and Baker High School, with the aim of identifying next generation engineers, doctors, mathematicians, IT professionals, and scientists.

This engaging initiative features interactive demonstrations and experiments from our proprietary STEM curriculum and industry partners; in addition to featuring a High School Engineering Symposium and Competition. Representatives from our student organizations and Admissions & Recruitment Department participate, share admission requirements, and assist students and families, and by providing insights on how Southern University prepares its students for life outside of college.

SU STEM Day is co-chaired by Dr. Dwayne Jerro, Chair of the Mechanical Engineering Department and Ms. LaQuitta Thomas, Computer Science graduate and CSE Advisory Board member. STEM Day has been supported by Aramark, Dow, Entergy, Texas Instruments, Capital One, and the National Science Foundation (NSF) NexGenC3 CREST Center. We thank all of our STEM Day partners for remaining committed to educating students on the different career opportunities that are available in the fields of science, technology, engineering, and mathematics.





VIRTUAL TOWNHALL MEETING

MARCH 30, 2022 | 6PM | ZOOM

MODERATED BY: LAQUITTA THOMAS, CSE ADVISORY BOARD MEMBER



Join the Dean and the CSE Leadership Team for a State of the College update and learn how you can be part of the action. All CSE students, faculty, staff, alumni, and supporters are encouraged to attend.

Do you have questions for the CSE Leadership Team? E-mail them to toni.jackson@sus.edu by March 28th



**Join us for the
ALUMNI ROUND UP SOCIAL
5:30PM-6:00PM CDT**

College held its inaugural townhall meeting designed to engage stakeholders in the affairs and growth of the CSE

SUPPORT AND

GIVING NEWS

PARTNERS PLAY A DRIVING FORCE IN STEM EDUCATION

The College is proud to boast the outstanding support of our partners who are actively engaged in the advancement of our students, faculty, and staff.





Entergy and Southern University \$2M Engineering Education Initiative

In 2018, Entergy partnered with Southern University to further support their mutual commitment to developing engineering talent for the future by awarding a \$2 million grant to Southern University from Entergy and the Entergy Charitable Foundation. Gov. John Bel Edwards issued a matching award of \$2 million. This multi-year initiative focuses on enhancing our engineering curriculum and staff development; as well as state of the art improvements to labs and classrooms to enable students to obtain hands-on experience. In addition, the funding creates internship and mentoring programs to enhance and strengthen the relationship between Entergy and Southern University.

“As a national leader in educating minority and women engineers and STEM professionals, Southern University is an ideal partner for Entergy to continue to build on our investments in growing a diverse workforce,” said Leo Denault, Entergy chairman and chief executive officer. “Entergy has a long history of working with universities within the Gulf South to develop the professional and technical employees that can support the continued economic development across the region as well as Entergy’s internal long-term workforce needs.”

“Southern University is one of the top producers of African-American engineers in the state of Louisiana and beyond,” said Ray L. Belton, Former Southern University System President.

“This partnership with Entergy will ensure that we not only continue this great legacy, but that we also expand opportunities so that students are poised to make valuable contributions to our global society through STEM disciplines”.



CHEVRON GIVES \$1M GIFT TO SUPPORT THE CHEVRON SCHOLARS PROGRAM ▶▶▶

The program supports students in Science, Technology, Engineering, and Mathematics (STEM) disciplines who demonstrate knowledge and interest in Chevron and the energy industry.

The contribution was awarded on September 30, 2020 during SU GIVE DAY at the Valdry Center for Philanthropy located on the Southern University Baton Rouge campus.



CHEVRON DAY

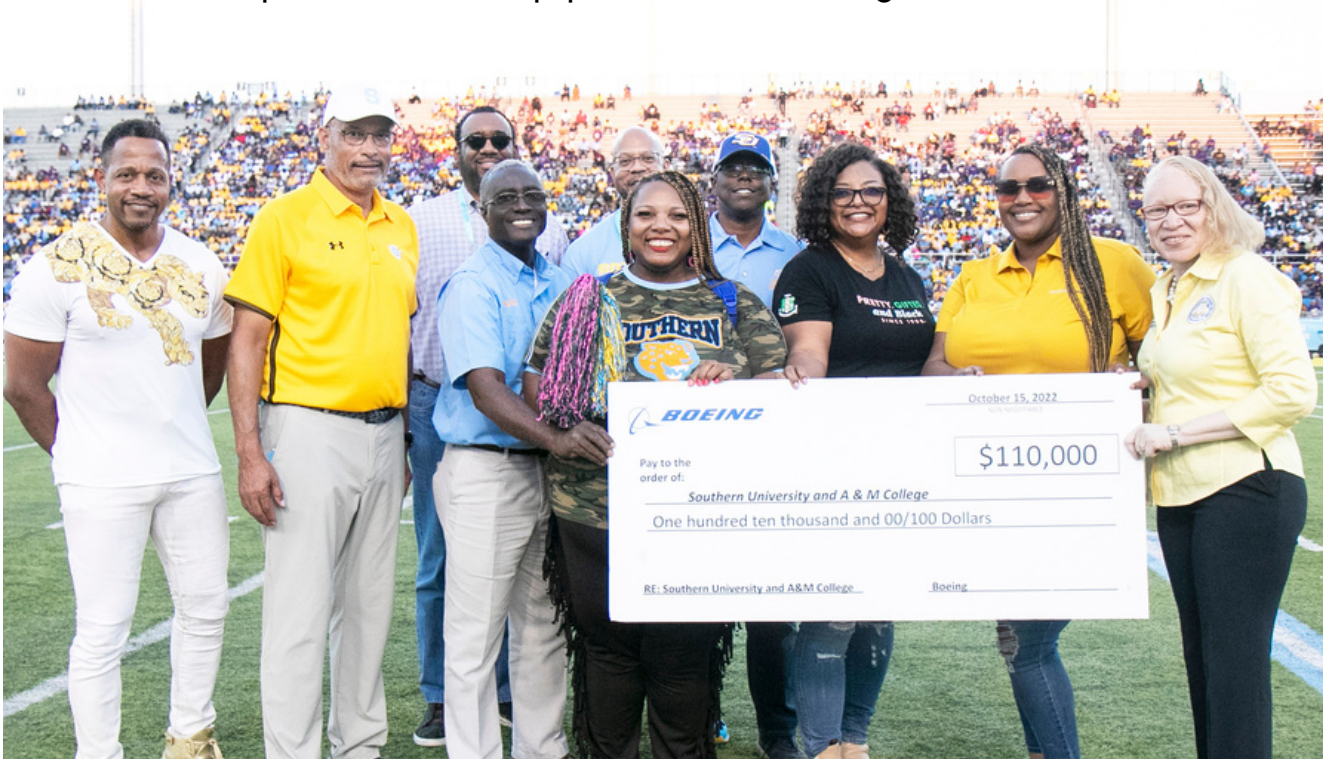
CHEVRON is committed to actively and strategically developing the talent to address and advance our workforce needs.



BOEING INCREASES IMPACT

Boeing reaffirms and increases its commitment to provide scholarships and enhance curriculum and learning outcomes with \$110,000 grant

Our Boeing alumni continue to go above and beyond to advance the College. Their generosity affords the College additional opportunities to provide a quality education, offer scholarships, enhance our curriculum and laboratories, strengthen learning outcomes, and prepare our students to excel in industry. Our students continue to do well at Boeing and continue to expand the talent pipeline that drives global success.



TEXAS INSTRUMENTS CHAMPIONS STUDENT PROFESSIONAL DEVELOPMENT

SU All-Star Alum, Ms. LaQuitta Thomas, drives STEM professional development for STEM clubs and organizations

Thanks to the efforts of Computer Science alum, Ms. LaQuitta Thomas, hundreds of student club members have been able to travel to national conferences, compete in national competitions, and benefited from industry professional development, that has helped our students secure internships, co-ops, and a full-time employment opportunities. TI is an enduring partner with a demonstrative commitment to support both experiential learning and professional development to educate future STEM innovators.





DOW ANNUAL STUDENT LEADERSHIP CONFERENCE

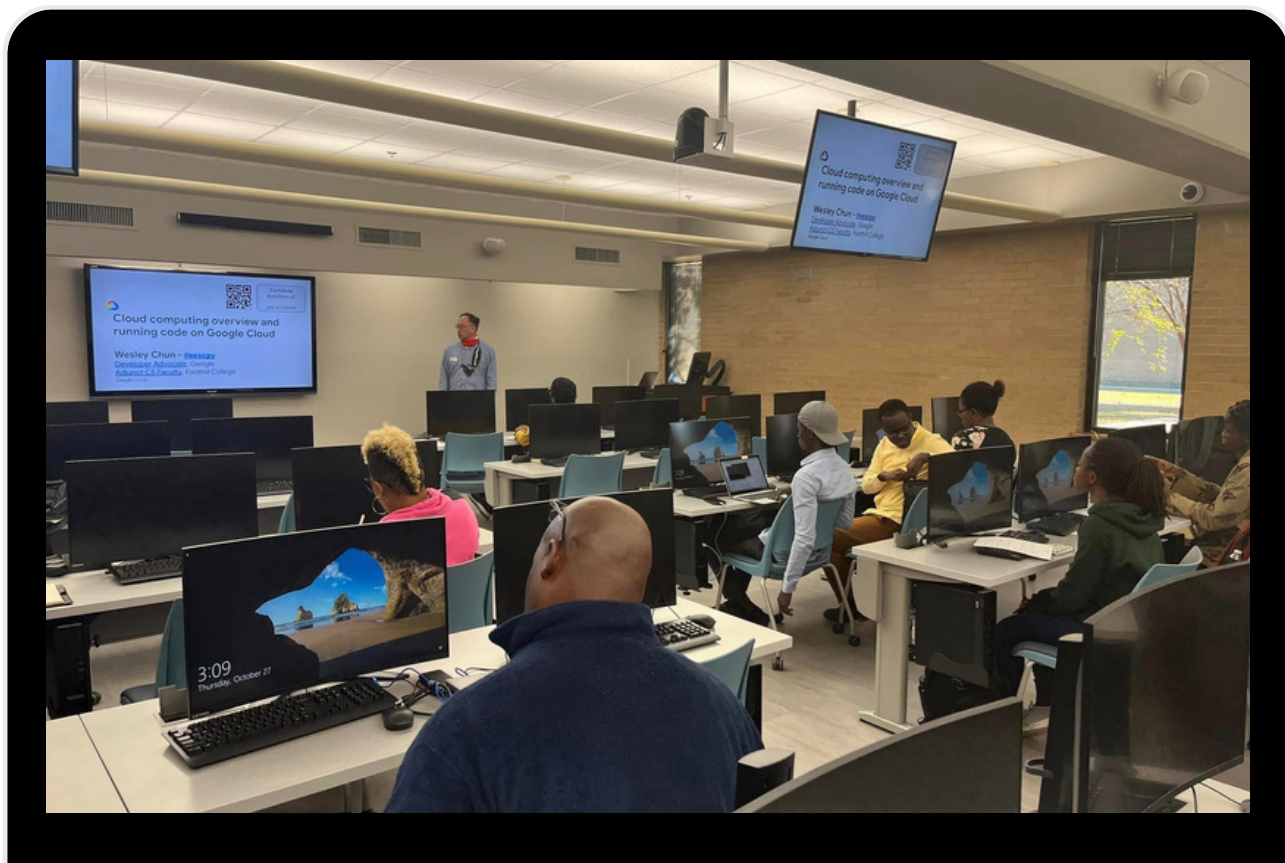
In 2023, DOW resumed its in-person annual Leadership Conference for students pursuing degrees from the College of Sciences and Engineering and the College of Business. Over 100 students were able to receive elite training from industry experts and special guests, March 7th and 8th, at the Valdry Center for Philanthropy.



GOOGLE EXPERT PROVIDES PROFESSIONAL DEVELOPMENT TO CSE



Google expert, Wesley Chun, visited the College to deliver an on-campus tech talk about using Google Cloud for courses, research, and IT resources. Attendees learned about Google's education grants and received valuable career-readiness, programming, and training information.





ENTERGY LAUNCHES THE ENTERGY SCHOLARS PROGRAM

In 2022, Entergy piloted a career readiness and professional development program to strengthen the talent pipeline for students pursuing degrees in engineering and computer science. Students are matched with an Entergy mentor who will assist them in their growth and development. This program is in its second year and continues to provide our students valuable academic skills, as well as lifelong and professional tools. Ms. Betina Brandon, Senior Manager of Diversity and Workforce Strategies, has been instrumental in developing many unique programs designed to strengthen our offerings.



Betina Brandon



my DAY 1.
Welcome to
P&G Interactive
Assessment
Prep Session

PROCTOR & GAMBLE PROFESSIONAL DEVELOPMENT



SUBR STEM STUDENTS RECEIVE IBM GLOBAL UNIVERSITY PROGRAM AWARDS

Students from the College of Sciences and Engineering continue to engage with IBM to enhance their skills. Our scholars took courses in artificial intelligence, cybersecurity, or cloud e-learning and received official certification badges.



MCCARTHY DAY @SU

One of our newest partners made a huge impact on students, providing new opportunities for faculty, staff, and students in construction management and other opportunities.



ERDC DAY AT SOUTHERN UNIVERSITY AND A&M

The U.S. Army Corp of Engineers' Engineer Research and Development Center (ERDC) met with CSE Leadership, faculty, staff, and students to discuss curriculum alignment, workforce trends, student and faculty development, and ways to strengthen and enhance the talent pipeline. The ERDC team held several power hour student info sessions, met with University officials, toured the campus, visited the C.A.V.E., and our 3D Printing Lab. As a result, an Education Partnership Agreement (EPA) has been signed and executed and additional collaborations with faculty have developed.



FUNDING THE

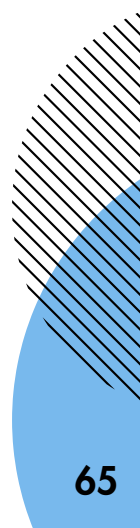
MISSION

FUNDED GRANTS 2018-2019

Principal Investigator	Department	Agency	Amount
Akwaboa, Stephen	Mechanical	U.S. Air Force	\$178,200.00
Bagayoko, Diola	Physics	LA BOR	\$200,120.00
Bagayoko, Diola	Physics	LA BOR	\$100,000.00
Banadaki, Yaser	Mechanical	LA BOR	\$5,000.00
Batra, Sanjay	Environmental Toxicology	Grambling State University	\$28,700.00
Batra, Sanjay	Environmental Toxicology	LSU	\$3,002.00
Batra, Sanjay	Environmental Toxicology	LSU	\$12,006.00
Batra, Sanjay	Environmental Toxicology	LSU	\$2,800.00
Belu, Radian	Electrical	Northwestern State University	\$13,107.00
Belu, Radian	Electrical	LA BOR	\$5,000.00
Belu, Radian	Electrical	LA BOR	\$5,000.00
Carriere, Patrick	College	LA DOTD	\$49,861.24
Dubytka, Lidiya	Biological Sciences & Chemistry	LSU	\$70,000.00
Finley, Rachel	Mathematics & Physics	Ohio State University	\$54,986.00
Ismail, Yasser	Electrical	LA DoT	\$85,792.00
Li, Guoqiang	Mechanical	LA BOR	\$346,787.00
Martinez-Ceballos, Eduardo	Biological Sciences	LSU	\$2,800.00
Mensah, Patrick	Mechanical	LSU	\$8,000.00
Mensah, Patrick	Mechanical	NSF	\$5,000,000.00
Mensah, Patrick	Mechanical	LSU	\$36,750.00
Murthy, S.N.	Environmental Toxicology	LSU	\$29,400.00
Reese, Terrence	Physics	LSU	\$40,000.00
Yang, Shizhong	Computer Science	U.S. Army	\$599,940.00
Yang, Shizhong	Computer Science	LA BOR	\$4,000.00
Yang, Shizhong	Computer Science	LA BOR	\$5,000.00
Yang, Shizhong	Computer Science	DoD (Air Force)	\$599.940.00
Yang, Shizhong	Computer Science	LA BOR	\$4,000.00
Yi, Xiaoping	Biological Sciences	LSU	\$137,616.00
Yi, Xiaoping	Biological Sciences	LSU	\$136,619.00
Zhao, Guang-Lin	Physics	LA BOR	\$4,000.00
Zhao, Guang-Lin	Physics	LA BOR	\$4,000.00

FUNDED GRANTS 2019-2020

Principal Investigator	Department	Agency	Amount
Akwaboa, Stephen	Mechanical	U.S. Air Force	\$131,800.00
Batra, Sanjay	Environmental Toxicology	Grambling State University	\$28,700.00
Batra, Sanjay	Environmental Toxicology	LSU	\$7,500.00
Batra, Sanjay	Environmental Toxicology	LSU	\$10,165.00
Batra, Sanjay	Environmental Toxicology	LSU	\$15,631.00
Belu, Radian	Electrical	LA BOR	\$5,000.00
Belu, Radian	Electrical	LA BOR	\$5,000.00
Belu, Radian	Electrical	U.S. Department of Homeland Security	\$46,789.00
Carriere, Patrick	Dean	U.S. DoEd	\$249,943.00
Crosby, Karen	Mechanical	NSF	\$851,877.00
Gray, Wesley	Environmental Toxicology/Chemistry	Tulane University	\$2,800.00
Gray, Wesley	Environmental Toxicology/Chemistry	Tulane University	\$5,600.00
Ismail, Yasser	Electrical	NSF	\$396,190.00
Jones, Nastassia	SMED	NSF	\$384,558.00
Li, Guoqiang	Mechanical	LA BOR	\$344,511.00
Martinez-Ceballos, Eduardo	Biological Sciences	NSF	\$497,579.00
Martinez-Ceballos, Eduardo	Environmental Toxicology	LSU	\$10,164.00
Mensah, Patrick	Mechanical	NSF	\$99,996.00
Mensah, Patrick	Mechanical	University of Delaware	\$400,000.00
Mensah, Patrick	Mechanical	LA BOR	\$110,000.00
Mensah, Patrick	Mechanical	LA BOR	\$190,000.00
Mensah, Patrick	Mechanical	LSU	\$38,773.00
Mensah, Patrick	Mechanical	NASA	\$53,100.00
Reese, Terrence	Physics	LSU	\$40,000.00



FUNDED GRANTS 2020-2021

Principal Investigator	Department	Agency	Amount
Banadaki, Yaser	Computer Science	NSF	\$399,899.00
Banadaki, Yaser	Computer Science	LA BOR	\$5,000.00
Banadaki, Yaser	Computer Science	The University of Alabama	\$49,332.00
Banadaki, Yaser	Computer Science	National Security Agency	\$99,744.00
Batra, Sanjay	Environmental Toxicology	LA DoEd	\$2,500.00
Batra, Sanjay	Environmental Toxicology	Grambling State University	\$21,000.00
Batra, Sanjay	Environmental Toxicology	LSU	\$14,447.00
Batra, Sanjay	Environmental Toxicology	LSU	\$5,600.00
Belu, Radian	Northwestern State Electrical	University	\$16,000.00
Belu, Radian	Electrical	LA BOR	\$5,000.00
Belu, Radian	Electrical	LA BOR	\$5,000.00
Belu, Radian	Electrical	LA BOR	\$5,000.00
Belu, Radian	Electrical	LA BOR	\$5,000.00
Carriere, Patrick		U.S. DoEd	\$249,943.00
Carriere, Patrick		LA DOTD	\$49,921.49
Dilworth, Kimyata	Mathematics & Physics	LA BOR	\$5,000.00
Gao, Feng	Physics	LA BOR	\$5,000.00
Gao, Feng	Physics	LA BOR	\$10,000.00
Gray, Wesley	Environmental Toxicology	The University of Kentucky Research Foundation	\$3,811.00
Ismail, Yasser	Electrical	LA BOR	\$5,000.00
Ismail, Yasser	Electrical	LA BOR	\$5,000.00
Khondoker, Mohammad	Mechanical	LA BOR	\$38,650.00
Kourouma, Mathieu	Computer Science	University of Louisiana at Lafayette	\$220,000.00
Kourouma, Mathieu	Computer Science	LA BOR	\$199,864.00

FUNDED GRANTS 2020-2021

Principal Investigator	Department	Agency	Amount
Li, Guoqiang	Mechanical	LA BOR	\$227,684.00
Martinez-Ceballos, Eduardo	Biological Sciences	LSU	\$5,600.00
Mensah, Patrick	Mechanical	LA BOR	\$45,000.00
Mensah, Patrick	Mechanical	NSF	\$2,000,000.00
Mensah, Patrick	Mechanical	United Launch Alliance	\$50,000.00
Mensah, Patrick	Mechanical	NASA	\$44,050.31
Mensah, Patrick	Mechanical	Microsoft Corporation	\$200,000.00
Mensah, Patrick	Mechanical	University of Delaware	\$100,000.00
Mensah, Patrick	Mechanical	LA BOR	\$61,033.00
Mensah, Patrick	Mechanical	LA BOR	\$208,146.00
Mensah, Patrick	Mechanical	NSF	\$99,995.00
Mensah, Patrick	Mechanical	LSU	\$26,600.00
Okwan, Phyllis	Mathematics & Physics	LA BOR	\$5,000.00
Okwan, Phyllis	Mathematics & Physics	LA BOR	\$5,000.00
Okwan, Phyllis	Mathematics & Physics	LA BOR	\$5,000.00
Reese, Terrence	Physics	LSU	\$37,000.00
Reese, Terrence	Physics	LSU	\$25,000.00
Salam, Md Abdus	Computer Science	The FinTech Center at Morgan State University	\$10,000.00
Wang, Weihua	Chemistry	LA BOR	\$10,000.00
Yang, Shizhong	Computer Science	LA BOR	\$5,000.00
Yang, Shizhong	Computer Science	LA BOR	\$10,000.00
Yang, Shizhong	Computer Science	North Carolina Central University	\$170,000.00
Yang, Shizhong	Computer Science	LA BOR	\$40,000.00
Yang, Shizhong	Computer Science	LA BOR	\$5,000.00
Yi, Xiaoping	Biological Sciences & Chemistry	LSU	\$84,000.00
Young, Luria	Science and Mathematics Education	NSF	\$625,000.00

FUNDED GRANTS

2022-2023

Principal Investigator	Department	Agency	Amount
Zhao, Guang-Lin	Physics	NSF	\$900,000.00
Ismail, Yasser	Electrical	Louisiana Transportation Research Center (LTRC)	\$30,000.00
Ismail, Yasser	Electrical	NSF	\$396,190.00
Dawan, Fareed	Mechanical	Clarkson Aerospace Corp.	\$249,904.00
Mensah, Patrick	Mechanical	NSF	\$4,000,000.00

Special thank you to the faculty, staff, and stakeholders who have worked diligently to secure resources to help fund cutting edge research, timely scholarship, and creative works. The funding secured offers numerous opportunities for faculty, staff, and students to expand their knowledge and skills outside the classroom. In addition, recipients have also earned awards, fellowships, publications, and other opportunities that to advance their careers.

INVESTMENT IN ACTION



Infrastructure

- Renovated High-Tech Room in Engineering Pinchback building (\$700K)
- Renovated Electrical Teaching Lab in Engineering Pinchback building (\$105K)
- Renovated 12 Chemistry and Biology Teaching Labs in Fisher Hall building (\$6 million)
- Renovated Retention Center (\$185K)
- Renovated Computing Facilities in Engineering Pinchback building and TT Allain (\$700K)
- Renovated Classrooms with Advances in Instructional Technology (\$200K)
- Built 3-D Printing Lab in Engineering Pinchback building (\$180K)
- Secured of \$68M in funding for the new Science Complex from the State of Louisiana.

Academic and Research

- Conducted 2 curriculum reform retreats (2019 and 2021) to review and strengthen academic programs by aligning curriculum with the workforce need. (Promoting Continuous Improvement)
- Maintained accreditation status for 4 ABET academic programs.
- Secured Accreditation (2019) for Computer Science
- Secured Accreditation (2021) for Civil, Electrical, and Mechanical Engineering Programs)
- Compensated faculty to develop online courses during COVID-19 (\$50K)
- Established CREST Center for Next Generation Multifunctional Composites (NextGen Composites Phase II) to sustain graduate students (\$4 million)
- Developing an undergraduate program in Computer Engineering
- Developing an undergraduate program in Construction Management



INVESTMENT IN ACTION



Students

- Conducted outreach programs for high school students (Engineering and Science Summer Institute, STEMDAY, Summer Transportation Institute) (\$500K)
- Provided scholarships for undergraduate students (\$1.5M)
- Sponsored student travel to Conferences (\$300K)
- Produced 828 STEM graduates (2017-2022)

Faculty

- Provided training for faculty to keep them up to date with new teaching technologies (\$75K)
- Provided assistantships from grants and contracts to undergraduate and graduate students to engage in research
- Sponsored travel for faculty and staff to attend or present papers in Technical Conferences (\$185K)



INFRASTRUCTURAL DEVELOPMENT RENOVATION

- Hi-Tech room with video conferencing capabilities with increased seat capacity from 85 to 125.
- Engineering Pinchback lab #438 to create a lecture and lab environment.
- Renovated classroom in James Hall to create a computer room for students in the Biology Program.
- Improved lighting in TT Allain for the Math Program, in James Hall for Physics and Biology Programs, in Lee Hall for Chemistry Programs.



NEW!

- Completed Symposium Room with student presentations and displays.
- Completed the construction of a 3D Printing lab.



FUNDED

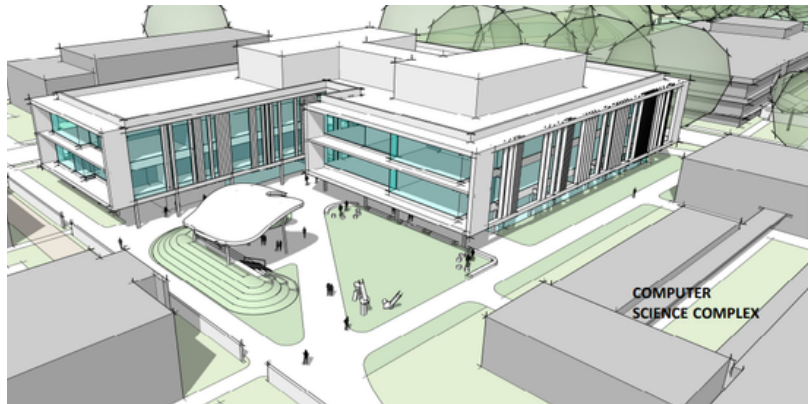
Secured \$6M in funding for the renovation of 8 Biology Labs and 4 Chemistry Labs in Fisher Hall from the State of Louisiana.

Secured of \$68M in funding for the new Science Complex from the State of Louisiana.



INVESTING IN LOUISIANA'S STEM WORKFORCE: SU'S NEW STEM COMPLEX

The mission of the College of Sciences and Engineering (CSE), an Historically Black, 1890 land-grant institution, is to provide STEM opportunities for a diverse group of students, and services to the community through teaching, research, and innovations necessary for CSE graduates to become productive, informed citizens prepared to meet the demands of an ever-changing global STEM industry. In keeping with that mission, the College has embarked upon a journey to build a new STEM building.



WHY

The outdated STEM building cannot support the demands of 21st century instruction and research. The facility, which is used for the instruction of all laboratory courses, has not had a significant renovation in more than 50 years. A recent 2018 study found that it was cost prohibitive to renovate the structure, and that renovation would not appropriately accommodate SU's current academic needs. The study found a new building was the most effective solution to a long list of challenges.

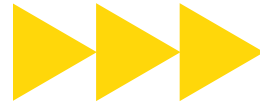
WHAT

The new STEM complex will have appropriate infrastructure including classrooms, offices, and lab space to support 21st century science education for all ages—from planetarium demonstrations to graduate research, plus space for all SU students, who will take at least one course there to fulfill core requirements.. "The STEM complex will provide an environment conducive for teaching and learning, thereby improving the quality of our STEM education, and ultimately improving our student retention and graduation rate. Both the programming and design phases are completed and we are ready to move into the construction.

With your support, Southern University's new STEM Complex will unleash tremendous opportunity. We invite you to join us in the University Vision for Tomorrow—meeting Louisiana's STEM workforce needs by building an interdisciplinary STEM Complex at SU. Together, we will create a cutting-edge science facility that nourishes the talents of SU's students and inspires our community through the power of discovery.

For information about the STEM Complex and naming opportunities, contact the Dean's Office or the President's Office.

MOVING FORWARD



The College aims to :

1. Develop an Undergraduate Computer Engineering Program
2. Develop an Undergraduate Construction Management Program
3. Develop a Ph.D. in Engineering and Applied Sciences Program
4. Develop an Online Master of Engineering
5. Enhance Master of Engineering Program with a cybersecurity engineering specialty option
6. Establish a Cybersecurity and Additive Manufacturing Specialty Program within the Master of Engineering
7. Create an Additive Manufacturing Option in Mechanical Engineering Program
8. Develop an Online Master of Science Program in Computer Science
9. Develop an Undergraduate Certificate in Computational Data Engineering and Science
10. Develop an Undergraduate Certificate in Cybersecurity

*To contribute to the development, please see
WAYS TO GIVE and HOW TO GIVE>>>



WAYS TO GIVE ►►►



The CSE and the Southern University System Foundation (SUSF) makes giving effortless by offering a variety of options to achieve your financial and philanthropic goals. By making a gift, in a way most meaningful to you, you can have an immediate impact on a world-class institution developing the best and brightest talent. Below are a few of the most popular ways to support the College and its students.

CURRENT GIFTS

- **Outright Gift:** You can make an outright gift to the CSE by donating cash, stocks, bonds, and directly to the Southern University System Foundation (SUSF)*.
- **Multi-year Pledge:** A multi-year pledge is recurring support that helps sustain the College, a particular program, or student club, and other specified initiative.
- **Corporate Matching:** Maximize your gift by participating in your company's workplace giving program. Many companies encourage their employees to make charitable gifts and will double or sometimes even triple your donation. To find out if your employer has a matching gifts program, check with your human resources department
- **Endowments:** Endowment contributions provide the College with long-term financial flexibility. Whether it's naming opportunities, professorships, or scholarship funds, we can help you with plans for a legacy-defining gift.

LIFE INCOME GIFTS

- **Gift Annuity:** A charitable gift annuity is a simple agreement in which we promise to pay you, or another person you name, a lifetime income in exchange for your gift.
- **Charitable Remainder Trust:** A charitable remainder trust can provide income to you; you and your spouse; or you, your spouse and your children for life or for a term of years, in exchange for a gift.

PLANNED GIFTS

- **Gifts by Will:** After you have provided for your loved ones, a gift to the SUSF in your will would enable you to support those areas of the University that are important to you, such as a college, academic program, or athletic team.
- **Life Insurance:** Very simply, name the SUSF as the beneficiary of a life insurance policy.
- **Retirement Plan Assets:** Naming the SUS as a beneficiary of your retirement plan is another option.

*Subject to the SUSF Gift Acceptance Policy

HOW TO GIVE ►►►



MAKE A GIFT BY ONLINE OR VIA CHECK

Checks should be made payable to SUSF Foundation or Southern University and A&M and mailed to the College at the address listed below:

- College of Sciences and Engineering
- ATTN: TONI JACKSON
- P.O. BOX 9969
- Baton Rouge, LA 70813

Please write any gift designation on the memo line. To make a gift over the phone by credit card, call 225-771-3911 or visit foundation.sus.edu

PAYROLL DEDUCTION

SUS employees may give through monthly paycheck deductions by submitting a Payroll Deduction Form found online at foundation.sus.edu or by contacting Human Resources.

MATCHING GIFTS

Your gift can have an even greater impact if your company has a matching gift program. If your company participates, request a matching gift form from your employer and send it completed and signed with your gift. We will do the rest. The impact of your gift may be doubled or possibly tripled!

QUESTIONS:

Contact our Director of Advancement, Dr. Toni Jackson, at toni_jackson@subr.edu or by calling 225-771-5883.

*Subject to the SUSF Gift Acceptance Policy



COLLEGE OF SCIENCES AND ENGINEERING

THANK YOU TO ALL OF OUR STUDENTS, FACULTY,
STAFF, AND GLOBAL STAKEHOLDERS FOR YOUR
ONGOING SUPPORT AND FOR HELPING TO ADVANCE
THE CSE TO NEW HEIGHTS

Contact Us

College of Sciences and Engineering

P.B. S. PINCHBACK HALL

225-771-5290

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