

LSU

Department of
Biological & Agricultural
Engineering

FALL 2019 NEWSLETTER



DEPARTMENT HIGHLIGHTS

Spring 2019 Semester

In the Spring 2019 semester, 40 biological engineering students graduated with a wide range of accomplishments—five were University Medalists (4.0 or greater overall GPA), six graduated summa cum laude (3.9 or higher overall GPA), three graduated magna cum laude (3.8 to 3.9 overall GPA), and four graduated cum laude (3.7 to 3.8 overall GPA). Emily Patterson graduated summa cum laude, was named a University Medalist, and also won the McLaughlin Award for having the highest GPA of all College of Engineering graduates.

Stewart Lockett was this year's recipient of the Sean O'Keefe Leadership Award, a university-wide honor.

The next stage varies greatly, with 25% of graduates pursuing a professional school (medical/dental/physician assistant), 25% pursuing graduate school (masters and PhDs in biomedical engineering/masters in orthotics and prosthetics), and 50% joining the workforce.

Faculty Highlight



Dr. Dorin Boldor

Charles P. Siess, Jr. Professor Dorin Boldor was one of five university faculty to be honored with the 2019 LSU Distinguished Faculty Award. Boldor teaches BE 4303 Engineering Properties of Biological Materials, and his research focuses mainly on bioenergy. In 2018 alone, he published five peer-reviewed articles; one book chapter; was issued one US patent; gave 17 presentations at various national and international conferences; prepared nine proposals, with one of them funded; and graduated three graduate students (one MS and two PhDs). He has also been awarded three grants over the last five years, totaling more than \$4 million.

BAE Advisory Council

The mission of the Advisory Council is to advise and counsel the chairperson and faculty of the Department of Biological and Agricultural Engineering (BAE) on matters pertaining to academic quality and stature of the department. The council advises on how the department and college can improve relationships and meet the needs of students, industry, commerce, government, and society as a whole through the best utilization of available resources. This includes actively supporting the department's development efforts in securing additional resources through individuals and industry.

Most recently, the council helped coordinate alumni attending the 2019 BESO Crawfish Boil, where they interacted with current students, faculty, and staff.



DEPARTMENT NEWS

Awards

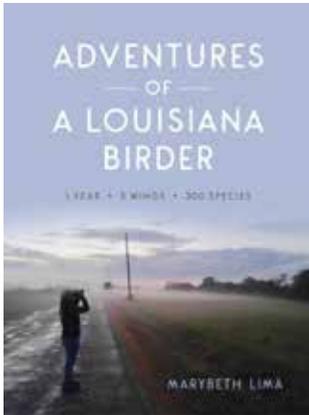
Syed Akbar Zamin, a junior biological engineering major was one of three LSU students to receive the prestigious Barry M. Goldwater Scholarship. Goldwater Scholars are awarded one- and two-year \$7,500 stipends to pursue undergraduate research in the fields of mathematics, the natural sciences, or engineering. Under the leadership of Dr. Myungwoong Kim and Dr. Jangwook Jung, Zamin's research focuses on the characterization of a new biomaterial of collagen-lignin. Lignin has the ability to modulate mechanical properties without

creating the issues of cytotoxicity and immunogenicity. After graduation, Zamin plans to pursue a combined MD/PhD in Biomedical Engineering.

Instructor Nicholas Totaro recently received a pair of awards in recognition of his work, the LSU College of Engineering Award for Instructor Excellence and the Tiger Athletic Foundation Undergraduate Teaching Award.

Publications

Professor Marybeth Lima Details Birding Journey in New Book



One wouldn't think engineering and birding would have much in common, but LSU Biological and Agricultural Engineering Professor Marybeth Lima discovered inadvertent connections between her personal and professional life that she recounts in her new book, *Adventures of a Louisiana Birder: 1 Year, 2 Wings, 300 Species*, published by LSU Press.

Lima offers a sometimes humorous, sometimes heartfelt perspective on birding as she travels Louisiana to observe as many bird species as possible in one year, a common quest birders call "A Big Year." Lima's book details two such quests in Louisiana, as well as ways in which her beloved pursuit helped surmount personal issues like almost losing her spouse in an accident and the failing health of an in-law.

"A big part of the book is about how birding helped pull me through tough times," Lima said. "For me, birding is an activity that puts me 'in the moment' and provides solace and a chance to regenerate and recharge my batteries. It helped me to stay at my best and gave me energy to keep persevering through expected and unexpected challenges."

As a child, Lima loved nature and knew a little something about birds, but it wasn't until adulthood that she became more interested in the flying feathered creatures.

"I think my passion for birds is rolled up into my lifelong love of nature, sense of wonder, my love of bird sounds, and the connections that birding has allowed me to make with people, communities, and the ecosystem," she said.

When Lima began birding 20 years ago, though not "seriously" until 2010, she was surprised that the hobby reached a broad range of people. It's estimated that one in six Americans is a birder, including those who simply watch birds in their own yard.

"Whether you are casual or completely consumed, that continuum is welcoming anywhere along the way," Lima said. "Birders are a tribe. So many will share their time, talents, advice, and best birding spots. As I've moved across the continuum toward being a more serious birder, I have learned so much and find that there is still so very much to know."

One of Lima's favorite places to go birding is Cameron Parish, which has more than 400 bird species.

"There's a coastal chenier there called Peveto Woods Sanctuary that is great to bird at any time of year, but especially during spring and fall migration when you can see a strong number and diversity of bird species," she said.

The rarest bird Lima has ever seen is the Amazon Kingfisher at the Rio Grande Valley Birding Festival in south Texas in 2013.

"That sighting was a really special moment for me, because I got to share it with my mother who also loves birds," Lima said. "At the time, it was one of the first records of this bird in the U.S. We were able to watch this bird while it rotated between perching and fishing in a reedy, overgrown pond area right off a state highway. It felt like we were participating in a piece of natural history as it was happening."

While Lima sees birding as an invitation to connect with nature and to learn, it has also shown her just how delicate the state's ecosystem is and why it's worth protecting.

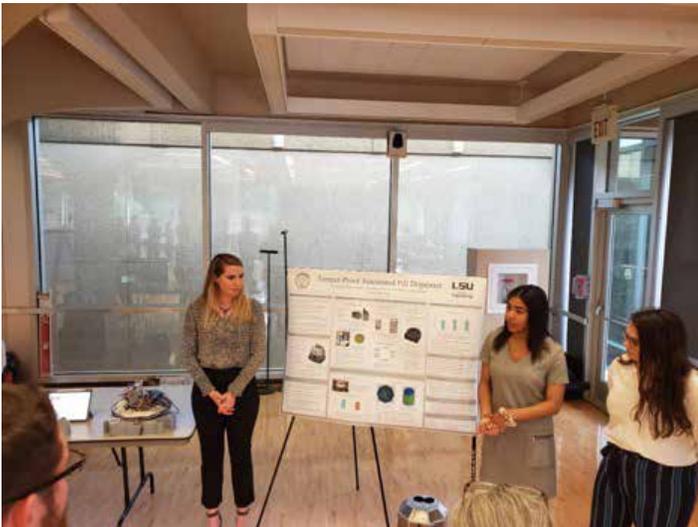
"Birding has taught me, and continues to teach me, that the natural world is complex, beautiful, and sometimes brutal," she said. "Birding has made me more aware of how environmentally fragile Louisiana is and how those impacts are already being felt throughout our ecosystem. Addressing such impacts is a call to action that connects my personal and professional lives."

Lima, who leads the LSU Community Playground Project, is also the author of *Building Playgrounds, Engaging Communities: Creating Safe and Happy Places for Children* and *Service-Learning: Engineering in Your Community*. Her latest book was positively reviewed by The Wall Street Journal.

STUDENT HIGHLIGHTS

Senior Design Program

This year's Senior Design program was one of the largest ever, consisting of 12 teams whose projects covered the biomedical, bioenvironmental, and bioprocess areas and enjoyed partnerships with the LSU School of Veterinary Medicine, LSU Health Sciences Center-New Orleans Department of Otolaryngology, Children's Hospital New Orleans Department of Otolaryngology, Ochsner Health Center, and Environmental Support Services.



Patterson Awarded McLaughlin Medal

Emily Patterson, a native of Prairieville, Louisiana, was the Spring 2019 recipient of the McLaughlin Medal, which is given to the undergraduate who earned the highest GPA. She graduated in biological engineering with a 4.225 GPA.

The McLaughlin Medal is named for Dr. Edward McLaughlin, who served as dean of engineering for 10 years and chair of chemical engineering for eight years prior to that. In all, he devoted 28 years of service to engineering at LSU.

Patterson is the daughter of Michael and Donna Patterson. She made the President's List every semester during her time at LSU and graduated summa cum laude. She also served as an undergraduate team member on the LSU Community Playground Project. She is going on to attend the Baylor College of Medicine and pursue a master's in orthotics and prosthetics.



Lockett Receives O'Keefe Award



The 2019 Sean O'Keefe Leadership Award was presented to Stewart Lockett, a biological engineering major from New Iberia, Louisiana, during the Spring 2019 Diploma Ceremony by LSU President F. King Alexander.

Lockett served as LSU student body president and student member of the LSU Board of Supervisors for the last year.

"We are pleased to honor Stewart Lockett with the Sean O'Keefe Leadership Award and could not think of a more deserving recipient for it," said LSU President F. King Alexander. "We want to thank Stewart for his leadership, both as student body president and as the student representative on the Board of Supervisors. We appreciate everything he has done on behalf of our students and for LSU."

The Sean O'Keefe Leadership Award was created by LSU donors who recognized the leadership in former LSU Chancellor Sean O'Keefe during the aftermath of Hurricane Katrina. The award is designed to recognize and reward the outstanding LSU undergraduate student leader who has demonstrated exceptional leadership in the past and possesses the character, capability, vision and motivation to be a leader in the future.

The Sean O’Keefe Leadership award is an annual award of \$10,000 to be used at the discretion of the recipient. The nominees were selected from the elected presidential posts from various student leadership positions. Criteria for the award also included a cumulative GPA of at least a 2.75.

Nominees submitted two essays—a biographical summary of their leadership positions with any relevant activities in their life since high school graduation and an essay on the subject, My Leadership Philosophy, which articulates the nominee’s leadership principles and how the candidate has tried to live up to those ideals.

Lockett has served on LSU Ambassadors, the Black Male Leadership Initiative, and S.T.R.I.P.E.S. And, having a completed a medical fellowship in 2017 in Budapest, Hungary, Lockett plans to attend medical school after graduation.

In one of his first acts as student body president, Lockett hosted the TOPS rally, where we unified students from across the state to demand reinvesting in education and fully funding TOPS. He was also able to discuss high-impact initiatives such as opioid prevention on campus, legal aid, and a new library.

While serving as student body president, Lockett was selected student member of the LSU Board of Supervisors. As a member of the board, he participated in votes and discussions on important projects such as housing for the medical schools and the diversity supplier programs.

A five-member selection panel made up of members of the business and LSU communities conducted personal interviews with each nominee to get to know them better and learn more about each nominee’s past and future leadership experience.

BESO 2018-2019

The LSU Biological Engineering Student Organization, or BESO, consists of active, ambitious BE student members. Our dedicated elected officers take charge in preparing career-oriented events and a community amongst undergraduates and graduates alike. BESO holds periodic meetings that involve career-building activities, offering unique opportunities to our members by also being part of ASABE and BMES national societies. Though primarily consisting of BE students, the organization encourages students of any major to participate and join.

These catered, after-class meetings focus on either professional workshops, guest speakers from industry and medical school, or social engagement within the BE department. This gives students concerned with applications for graduate or medical school opportunities to learn how to build a strong foundation and get the chance to meet with admission representatives from various schools. As an organization, BESO also prioritizes forming relationships between members, bringing together underclassmen and upper, while giving students chances to better know BE professors.

Annual events include the Hawaiian beach-inspired social, the Spring BESO Crawfish Boil, and the Fall Potato & Rice BESO Fundraising Sale.



Recently, BESO developed a scholarship program offered to freshmen under the Dr. Mailander Memorial Scholarship fund. Thanks to generous donors, it exceeded its goal and raised a total of \$1800.



Since his passing nine years ago, Dr. Michael Mailander's memory has lived on in a scholarship available to the student body he loved. Dr. Mailander joined LSU in 1985 as an assistant professor in the Biological and Agricultural Engineering department. In 1991, he was promoted to associate professor, specializing in areas that

included controls and sensors, fluid power, precision farming, machine design, power hydraulics, and bio-energy. He also taught BE 1250 Intro to Engineering Methods in the fall, a class for entering freshmen, and BE 2350 Experimental Methods for Engineers in the spring.

Dr. Mailander had a special interest in agricultural technologies. He received patents for the automatic control of a combine threshing cylinder and feed conveyor, in addition to one for an automatic ground speed controller.

Through his teaching and work, Dr. Mailander created lasting relationships with his students and colleagues.

Dr. Marybeth Lima, LSU BAE professor, spoke of Dr. Mailander with great respect when asked to recall her colleague. She

described him as "very focused on details. He had high standards, and he always wanted to 'get things right.'" In other words, he was "very much a traditional engineer."

Dr. Mailander kept the projects he was working on visible to those who entered his office, so much so that it was described as that of a "mad genius room you see on cartoons."

Dr. Steven Hall, former LSU professor, once described Dr. Mailander as an active professor who encouraged those who needed encouragement and was there for those in need. This is supported through his work with Christ the King Catholic Church on LSU's campus, where Dr. Mailander would regularly volunteer as communion minister, lector, and catechist for the RCIA program, which initiates adults into the Catholic religion. In addition to his work with CTK, he was an advisor and volunteer for LSU Habitat for Humanity.

New BESO Officers

Officers for the 2019-2020 Academic Year are:

President: Gabrielle Kerkow

Vice President: Jackie Begue

Treasurer: Elena Soto

Secretary: Savannah Heath

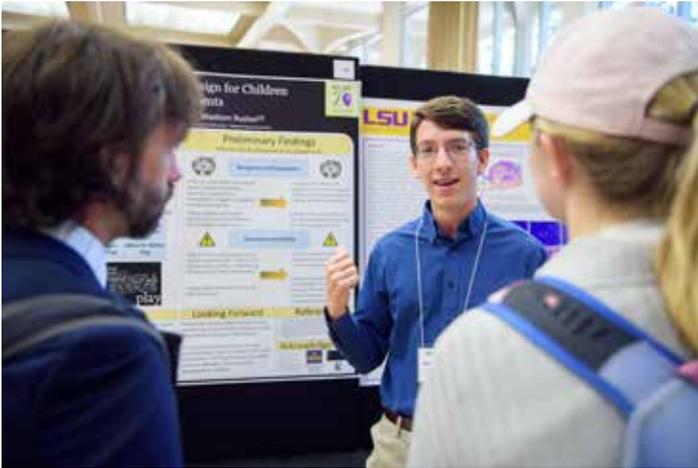
Fundraising Chairs: Leander Bon Mardion, Alexis Benoit

Fundraising Subchair: Chris Bologna

Social Chair: Tiffany Pham

RESEARCH HIGHLIGHTS

LSU Discover



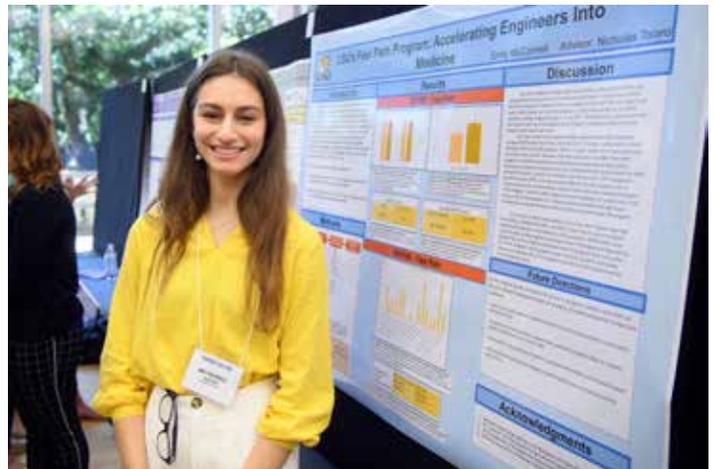
Brandon Tramontana



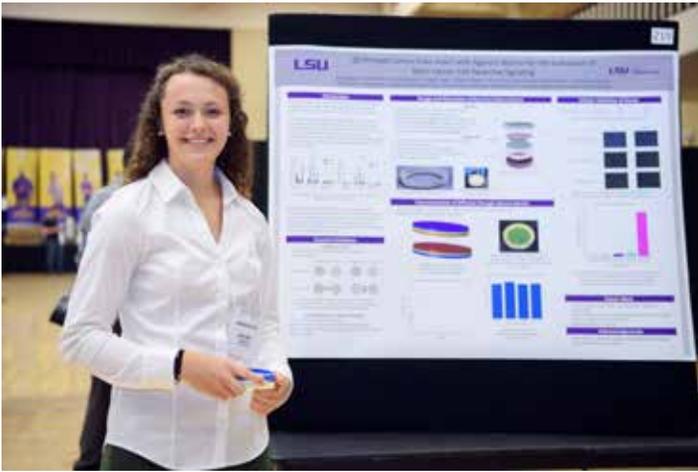
Caroline Bergeron



Dominique Angibeau



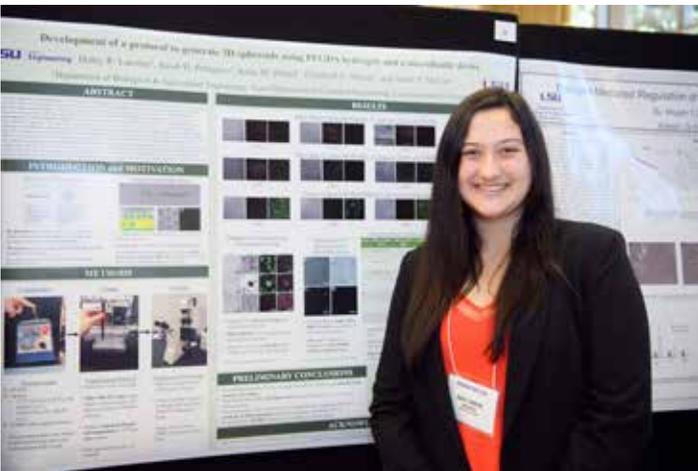
Emily McConnell



Erika Lewis



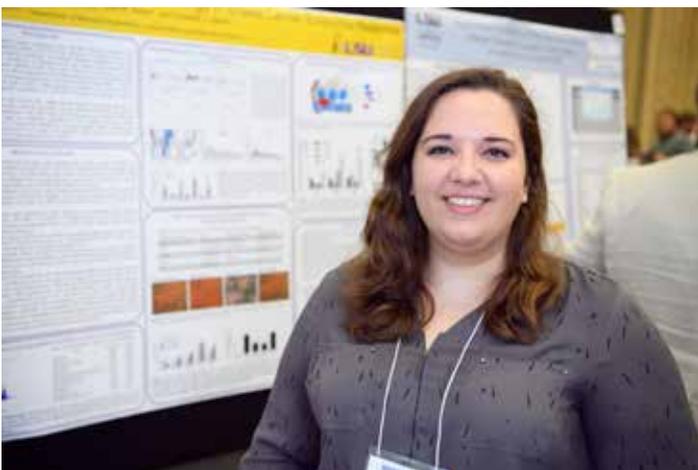
From left to right: Fischer Robinson, Adriane Deras, Madison Ruston



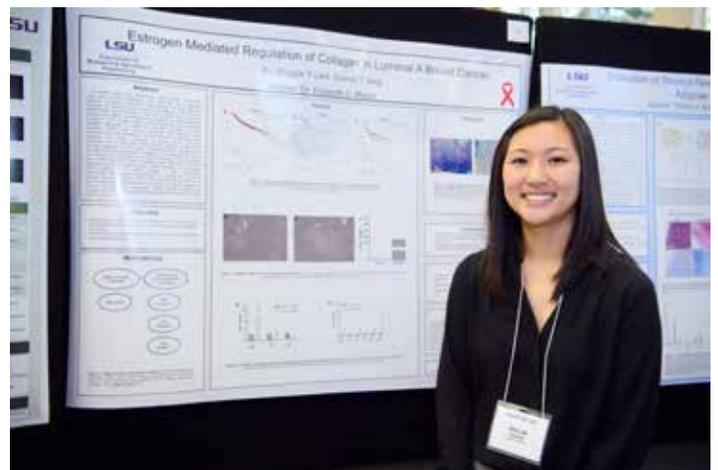
Haley Lassiter



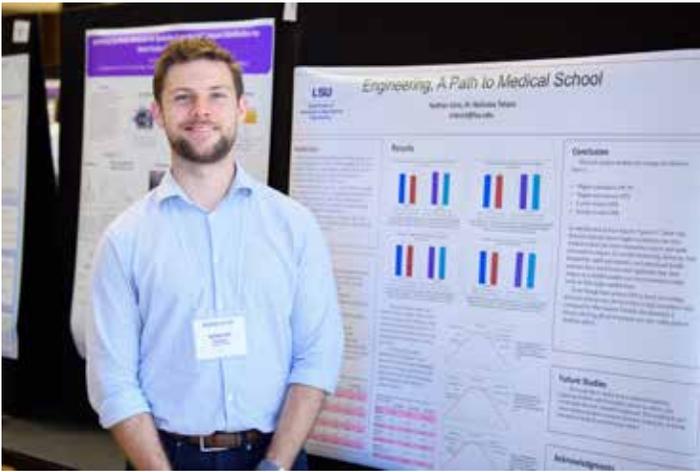
Hayden Waldvogel



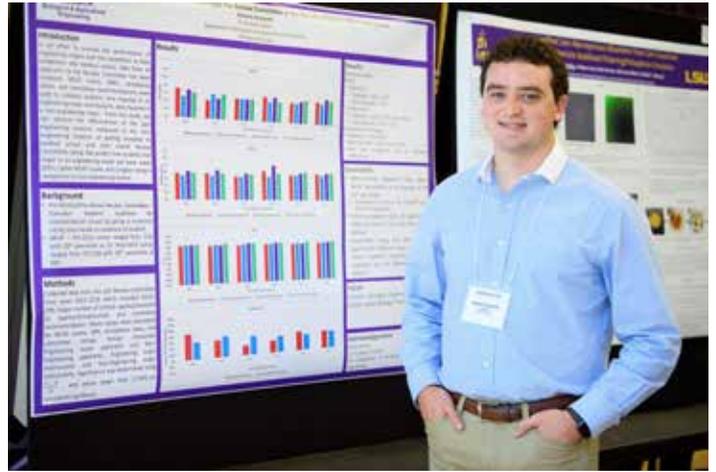
Maryn Cavalier



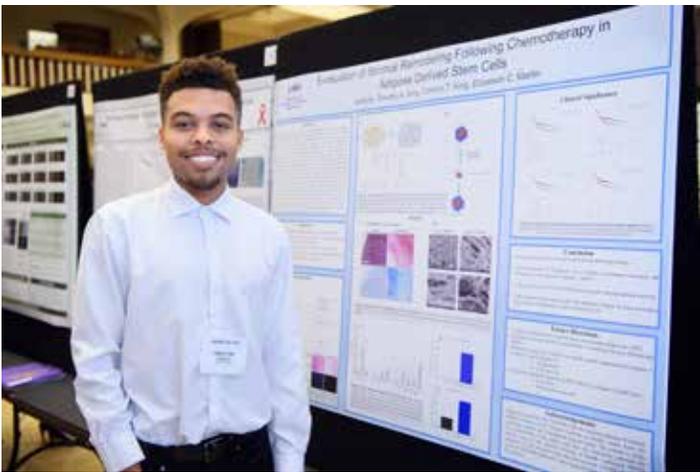
Meggie Lam



Nathan Istre



Nicholas Hudspeth



Timothy King



BAE Banquet

Scholarship

Mansel M. Mayeux Honorary Scholarship

Amber Jarrell
Andy Lin

Carl H. Thomas Memorial Scholarship

Caroline Bergeron
Emily Patterson

Wiley D. Poole Memorial Scholarship

John Howe
Sarah James
Drake Melancon

Harold T. Barr Memorial Scholarship

John H. Waldvogal

Scott-Windham Scholarship

Lidia Soto Handal
Thaksin Kongchum
Meggie Lam
Darshil Patel

William H. & Barbara Brown Scholarship

Dominique Angibeau
Taylor Nicole Cleveland
Grace Nguyen
Maia E. Trailer

Richard L. Bengtson Scholarship

Amari Baker
KaeDiance Fuller
Mallory Matthews

Charles E. Severance Scholarship

Jorge Belgodere
C. Ethan Byrne

Albert P. Halluin Memorial Scholarship

Laura Moldovan
MacKenzie Powers
Syed Akbar Zamin

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