

LSU RESEARCH

Office of Research & Economic Development The Constant Pursuit of Discovery | 2021-22



THE HUMAN CONDITION



THE HUMAN CONDITION



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FROM THE VICE PRESIDENT

The theme for this issue of *LSU Research* magazine is the human condition. As a land-grant and flagship university, we at LSU are dedicated to improving the human condition through education, research, creativity, and scholarship. Now more than ever, we believe in this charge. The global pandemic has affected nearly every aspect of society and has forced deep introspection about our collective humanity. Given this moment in time, we see it fitting to dedicate this year's issue of the magazine to shine a light on some of the most advanced scholarship and research in the humanities and social sciences at LSU. In the cover story, *The Human Condition: Building Connections Across Neighborhoods*, we feature a sociologist's work that documents, through photography and oral history interviews, the rich stories of resilience from people living in New Orleans' distinct neighborhoods.

Also, within these pages you will read about the work of a journalism scholar who has revealed how removing national politics from a local newspaper's opinion pages has helped repair bipartisan rifts and rebuild community. You will also learn more about how a psychologist and her team of students are combatting the opioid crisis by providing much-needed treatment. As we continue to push the boundaries on research and scholarship at LSU with resilience and a passion to improve the human condition, we hope you enjoy reading about our latest discoveries. Visit lsu.edu/research and follow us @LSUResearch on [Twitter](https://twitter.com/LSUResearch), [Facebook](https://facebook.com/LSUResearch), and [Instagram](https://instagram.com/LSUResearch) for more stories throughout the year.

Samuel J. Bentley

Vice President, Research & Economic Development
Billy and Ann Harrison Chair in Sedimentary Geology

ABOUT THIS ISSUE

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About the Cover

This year, *LSU Research* has three different covers featuring the photography of LSU Department of Sociology Professor Frederick Weil. He and his students document and interview people who live in New Orleans neighborhoods about their collective responses to disasters. The individual stories behind these photos reveal a strong sense of community and are a representation of the diverse people who exist within these communities. Simply put, they are the face of the human condition and community connections.

—Tyronecia Moore, LSU graphic designer and cover artist

(See [pg. 64](#) to read more about each cover.)

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NEWS

Promising COVID-19 Treatment Discovered through LSU Artificial Intelligence Research

Researchers at LSU developed an artificial intelligence, or AI, software called DeepDrug that has discovered a potential new COVID-19 treatment, known as SM-19. SM-19 has shown up to 97 percent efficacy in reducing the amount of SARS-CoV-2, which is the virus that causes COVID-19, in cell and animal studies recently conducted by Illinois Institute of Technology. The drug combination is designed to be effective against several variants of the virus. It also is designed to reduce the amount and duration of symptoms, including long-term effects of COVID-19.

The individual compounds have already been approved by the FDA for other uses in humans and have well-characterized safety profiles. This can greatly accelerate the time for SM-19 to become widely available, including as treatment over the counter. At this time, there are no approved oral medications to reduce COVID-19 symptoms in people who are not hospitalized. Human studies on SM-19 have begun.

AI can dramatically shorten the time to discover new drug compounds—from years to weeks.

“It normally takes about 10 years for new drugs to reach patients while our DeepDrug platform can reduce the time to drug discovery by 90 percent,” said Supratik Mukhopadhyay, LSU Department of Computer Science associate professor, who led the interdisciplinary team that developed DeepDrug. “We are extremely pleased that within 13 months of starting the drug discovery process, we could move to human studies. We couldn’t have accomplished this without AI.”

DeepDrug uses AI-based techniques to process one of the world’s most comprehensive datasets of more than 300,000 drugs and compounds and also to analyze viral mechanisms and corresponding data accumulated over many years of research. A Calgary-based technology company, Skymount Medical, has licensed DeepDrug.

Art History Professor on Exhibition Team Honoring Breonna Taylor

Allison Young, assistant professor of art history, was on the national advisory board of exhibition *Promise, Witness, Remembrance* at the Speed Art Museum in Louisville, Kentucky. The exhibition is a tribute to Breonna Taylor,

the 26-year-old medical worker killed in her home by police in a no-knock raid. Curator Allison Glenn of Crystal Bridges Museum of American Art in Bentonville, Arkansas, guest-coordinated the collaborative project, which brings together work by Black contemporary artists to honor Taylor and her legacy.

“I’m honored to be included as one of the voices in the room for this discussion,” Young said. “This project has been a testament to the importance of collaboration in every sense: The Speed included Breonna’s mother, Tamika Palmer, and local community stakeholders in the conversation from the start, and Glenn’s sensitivity to all involved parties and her belief in art’s reparative capacity has been a model to the field.”

Promise, Witness, Remembrance reflects on the life of Breonna Taylor, her killing in 2020, and the year of protests that followed in Louisville and around the world. Among the many goals of the exhibition are to stand witness to the trauma that the city of Louisville has gone through and to stand with communities who have been hurting for a long time, Young said. The project provides for an emotional space of healing, both personal and collective, for organizers and viewers.

“In light of both the realities of racially motivated violence and the ongoing coronavirus pandemic, we are experiencing a collective moment of grief, and the included works will hold space for a range of personal responses to the art and attendant issues,” Young said.

Underwater Ancient Cypress Forest Offers Clues to the Past

When saber-toothed tigers, woolly mammoths, and giant sloths roamed North America during the last Ice Age about 18,000 to 80,000 years ago, the Gulf Coast’s climate was only slightly cooler, more similar to regions to the north like Missouri and North Carolina’s climate today. As sea level dropped and exposed more land on the continental shelf, bald cypress trees became established in swamps in what is now the northern Gulf of Mexico.

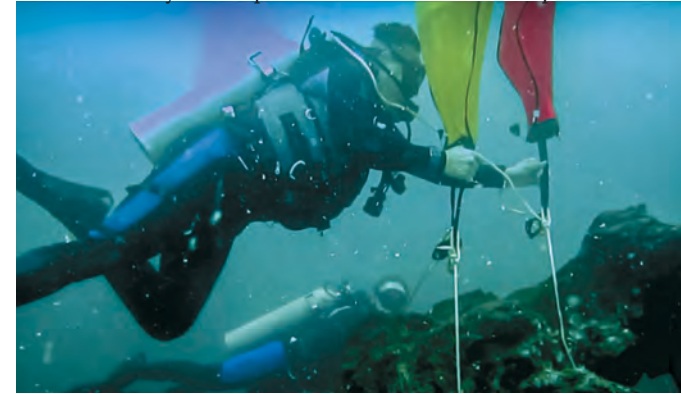
An event occurred and suddenly killed and buried the bald



Portrait of Breonna Taylor by Amy Sherald

cypress forests along the Gulf Coast. The buried swamp trees were preserved by sediment for thousands of years. About 18,000 years ago, sea level rose. As the ocean waters moved inland, the buried trees were preserved in their former swamp sediments. In 2004, Hurricane Ivan cut a path across the region and exposed the ancient bald cypress forest.

“It smells like freshly cut cypress,” said marine geologist and paleoclimatologist Kristine DeLong about the ancient trees that she exhumed about 8 miles offshore in 60 feet of water. “We were surprised to find this cypress wood intact, because wood normally decomposes in the ocean from shipworms and



LSU Department of Geography & Anthropology Associate Professor Kristine DeLong excavates an ancient cypress forest in the Gulf of Mexico.

bacteria.”

DeLong and her research team SCUBA dove the site, recovered 23 specimens of cypress, and analyzed the wood in her lab at LSU, where she is an associate professor in the LSU Department of Geography & Anthropology, and at the University of Idaho. They found the forest was from the early part of the last ice age and 42,000 to 74,000 years old.

“The region experienced climate change but it was getting colder. It wasn’t a gradual drop in climate—rather these quick pulses with drops in sea level. It was definitely a chaotic time, but the land and the forests were resilient to these changes,” she said.

Her team also has collected 18 sediment cores, which are long tubes of compacted sand and dirt, from around the site of the underwater ancient cypress forest. They found sand and seashells in the top layers of the sediment cores but also dark, organic peat that looks like potting soil with roots and leaves towards the bottom of the cores.

“As a marine geologist, we don’t see this type of sediment,” she said. “What was interesting was finding seeds from St. John’s wort, button bush, and rose mallow, which are native plants we can find on land today, but we found them preserved in the ocean.”

The researchers have a few hypotheses on what may have happened to the cypress forests. One idea is that sea level rose suddenly and the flood plain buried the cypress forest. Another idea is that a melting ice sheet caused a sudden influx of water to flow down the Mississippi River and other nearby rivers pushing sediment that buried the coastal forests.

Regardless of how this occurred, DeLong and colleagues believe it happened throughout the region and that there may be other underwater ancient cypress forests along the Gulf Coast. This research was published in the journal *BOREAS*.

NASA and LSU Apply Mississippi River Delta Data for Deltas Around the World

Delta-X, a NASA airborne investigation, has embarked on its field campaign in the Mississippi River Delta in coastal Louisiana in collaboration with LSU. The Delta-X science team, led by Principal Investigator Marc Simard of NASA’s Jet Propulsion Laboratory, or JPL, in Pasadena, California, and Co-principal Investigator Robert Twilley, LSU Department of Oceanography & Coastal Sciences professor have begun to collect data by air and by boat to better understand why some parts of the delta are disappearing due to sea-level rise while other parts are not.

“The Mississippi River Delta is LSU’s living laboratory. In partnership with NASA’s JPL, we can use the data we collect from our iconic and critically important natural landscape and calibrate it so it is useful for deltas around the world,” Twilley said.

Deltas typically form where large rivers enter the ocean or other bodies of water. As a river flows downstream, it carries sediment—small particles of silt, gravel, and clay. By the time the river meets the other body of water, it is moving slower, allowing the sediment to sink to the bottom and accumulate to form a landmass, or delta.

“Millions of people live on, and from services provided by, coastal deltas like the Mississippi River Delta. But sea-level rise is causing many major deltas to lose land or disappear altogether, taking those services with them,” Simard said. “We hope to be able to predict where and why some parts of the region will disappear and some are likely to survive.”

For the water-based part of the campaign, LSU boats are being deployed to measure the flow of water and the sediment it transports across the region. For the airborne component, three planes outfitted with specialized remote sensing instruments are flying over the region taking large-scale measurements to estimate water and sediment flows and vegetation production. Combined, the data are expected to provide key insights into the effect of sea-level rise on the

delta—specifically, why some areas are disappearing while other areas are thriving.

Researchers are focusing on two primary areas—the Atchafalaya Basin, which has been gaining land through sediment accumulation, and the Terrebonne Basin, which lies adjacent to the Atchafalaya but has been losing land rapidly. Teams from LSU, Caltech, Florida International University, and other collaborating institutions are tasked with collecting important data by land, water, and air.

Deltas protect inland areas from wind and flooding during storms; they serve as a first line of defense against sea-level rise; and they are home to many species of plants and wildlife. The Mississippi River Delta, one of the world’s largest, also helps to drive local and national economies via the shipping, fishing, and tourism industries.

But it is quickly losing land. Over the last 80 years, the delta has shrunk by about 2,000 square miles, or 5,000 square kilometers, which is roughly the size of the state of Delaware.

Researchers Study Baton Rouge Barred Owls

Barred Owls are the most abundant owls in Baton Rouge and among the most common raptors in Louisiana. They eat rats,



LSU School of Renewable & Natural Resources’ Weaver Brothers Distinguished Professor Sabrina Taylor and colleague release a Barred Owl named Thoth as part of a study on these abundant owls in Baton Rouge.

snakes, and even crawfish. They inhabit large, mature trees, sometimes within Baton Rouge neighborhoods and public parks. But little is known about them.

“Barred Owls are an urban wildlife species that are pretty special. There aren’t very many other owl species here other than the Great Horned Owl, the Eastern Screech, and the occasional Barn Owl,” said LSU School of Renewable & Natural Resources’ Weaver Brothers Distinguished Associate Professor Sabrina Taylor, who is conducting research to gather more

information about Barred Owls in the Baton Rouge area. “There are all of these little habitat fragments around the city, and we want to know how Barred Owls are using them. For example, if they have a large patch of forest, do they stay in that large patch? If they inhabit a smaller patch of woods or a few trees, does the size of their home range change?”

She and colleagues at LSU are conducting a study on these large, charismatic nocturnal native birds to learn more about where they live and roam and what they do. So far, the researchers have caught and released about 50 Barred Owls in the Baton Rouge area.

“It’s really surprising to see the range in how far Barred Owls fly. There’s a lot of variation. Some of the Barred Owls that live in BREC’s Bluebonnet Swamp, for example, do not fly very far while other owls foray from one end of the city limits to the other,” said LSU alumnus Vitek Jirinec, who worked on this as a side project to his doctoral research.

Jirinec and Taylor attach a tag that acts like a Fit Bit on an owl that tracks where it goes and when it is most active. So far, they have found that the owls tend to be the most active in the evening and the early morning just before dawn. The state-of-the-art GPS and very high frequency, or VHF, tags cost about \$1,400, but the battery life is relatively short. To conserve the battery, the researchers have programmed the tags to record a GPS location only twice a day and twice a night. After a few months, the researchers recapture the owl to recover the tag, which offers a wealth of high-resolution data on the bird’s whereabouts and activity.

The researchers think that when food availability in the forest is low in the winter, the owls will fly into urban areas to prey on rats and other rodents. For this fieldwork, the researchers catch owls at night using a net and 24-foot poles usually used to catch bats. Because Barred Owls are territorial, the scientists play owl calls on speakers, which will lure the Barred Owl out and into the net. Once captured, the scientists weigh and measure the owl, collect a small blood sample, attach the tag, and release it. So far, they have collected movement data on about 30 Barred Owls.

They hope to analyze the data from the tags and conduct DNA analyses from the blood samples that will help identify male and female owls. ■



LSU Rural Life Museum historic structures

Credit: LSU

Q&A with Passionate Preservationist

LSU Rural Life Museum Director Bill Stark

By Michelle Spielman

For more than 50 years, the LSU Rural Life Museum has transported visitors back in time to 19th century Louisiana. Through its immense collection of 18,000 artifacts and more than 30 historic structures representing farms, plantations, and households, the museum is dedicated to featuring the “hardships, toils, vision, and inspiration” of all Louisianans and their rural past. The open-air museum is located on 440 acres of land bequeathed by landscape architect Steele Burden and his siblings, Ione and Pike Burden, to offer the public a place to learn about everyday life in Louisiana.



Credit: LSU

Last year, the museum welcomed new Director Bill Stark, who will continue the Burdens’ vision of the museum while making it relevant and relatable to today’s visitors.

Why is learning about history important, especially now?

Knowing our past and having a solid grasp of it, beyond names and dates, is the basis of any understanding of the world in which we live. American history shows us there are no perfect heroes, yet flawed people can do very extraordinary and positive things. It also demonstrates how some of the most cherished aspects of our culture come from tragic circumstances. The Acadian exile from Canada, the European settlement and American expansion driving Native Americans from their ancestral lands, and the trans-Atlantic slave trade were all causes of countless deaths and abuses. Yet, these tragic circumstances also set the stage for the development of foods, music, and arts unique to Louisiana; the culture that developed is one we look to with pride and gives us a deep sense of community. It is not about glossing over the flawed nature of individuals or suggesting the untold suffering was worth it so we can enjoy jazz and blues. Rather, it is about coming to grips with the fact that all of history contributes to what and who we are today. Ultimately, an understanding of history can humble and humanize ourselves and others.

How has your past shaped who you are today?

Growing up in Portland, Michigan, I was always fascinated by my grandfathers and, particularly, their stories from World War II. One, a career officer in the U.S. Army would share personal stories intermixed with discussion of what his unit was doing and the broader history of the war. All were tinged with a sense of purpose and duty. My other grandfather joined the Navy after a war-related civilian project he was working on ended. His recollections were markedly different and often relayed the humor, uncertainty, and occasional chaos of being thrust into a large and growing military.

Essentially, I was presented with two perspectives on the war: one resembled *The Longest Day* and the other, *Catch-22*. This taught me two simple lessons. First, perspective shapes our understanding. It wasn’t like my grandfathers had vastly different world views; however, their respective positions in the military gave them different frameworks for understanding the war.

Secondly, and more impactful to me, a broader understanding of how we fit into a situation can provide context and meaning for our place in the world. That notion has certainly shaped how I approach the lessons of history.

Although I did not realize it at the time, the beginning of my curiosity about history was developed by having a close connection to people like my grandfathers, who were there



Credit: LSU

LSU Rural Life Museum's annual Harvest Day event features Louisiana artisans' interpretations of agricultural and household activities common on farms during harvest time in the 19th century.

as history was being made. I saw how they could have very different perspectives on the same historic period; this knowledge and experience influences me professionally to strive to present history in a nuanced, textured, and holistic manner.

Tell us how you came to the LSU Rural Life Museum.

I attended Michigan State University before moving south in pursuit of my career in museum administration. Ultimately, my wife and career opportunities brought me to Baton Rouge. I like to say I’m “married” to Louisiana.

Luckily, I have a history teacher for a wife and a 9-year-old daughter with more curiosity and intelligence than most her age. We are all afflicted with wanderlust and that makes our travels and cultural adventure-seeking a joy for us all.

Prior to coming to Baton Rouge, I spent five years as the assistant director of the McFaddin-Ward House in Beaumont, Texas. Then, I was the division director over the Capitol Park Museum in Baton Rouge and later served as the division director over all Louisiana State Museum sites outside of New Orleans.

I became director of the LSU Rural Life Museum in July 2020 after spending two years as the associate director.



LSU Rural Life Museum features interactive demonstrations and displays from its collection on 440 acres of land in Baton Rouge.

Credit: LSU

The LSU Rural Life Museum has been in operation for 50 years. What is your vision for the museum during your tenure?

Steele Burden, the LSU Rural Life Museum’s founder, laid out a solid vision for the museum. Some of the wording is not what we would use today, but the essence is there. At its core, this museum reflects the hardships, toils, vision, and inspiration of all Louisianans and our rural past. The key to the museum’s growth and development is ensuring the vision remains relevant and relatable to today’s visitors and their lives.

The LSU Rural Life Museum will stay true to Burden’s vision by taking an expansive view of his concepts and the museum’s mission. We will continue to look at the culture, skills, and environment that shaped Louisiana. We will do so, however, with a renewed emphasis on diverse perspectives and experiences, the adaptation to land and climate, and the interplay between these elements that make Louisiana unique

within the nation. I see the LSU Rural Life Museum as a key component in linking us, as individuals, to our shared history of immigration and migration; fortitude and ingenuity; tragedy and oppression; and adaptation and resilience. The material is already in our collection. We just need to pull these stories from the objects we care for and make these connections for our visitors to experience.

What can visitors to the museum expect in the future?

We have recently completed an interpretive roadmap for the LSU Rural Life Museum. In addition to adding more layers to our interpretation, we are implementing new tours and programs around the expanded vision for the museum.

Currently, we are working to tell a more holistic story of slavery and the continued oppression that followed as it relates to the museum’s mission. These changes are reflected in our interpretive labels and tours as well as in future programming and exhibitions. Our aim is to do this with

a more complete and balanced representation of all the historic cultures found in Louisiana. We are expanding our interpretation to better relate how we have historically lived within the Gulf Coast environment. At the same time, we seek to enhance the connection between the efforts and education at the museum and the LSU AgCenter’s Botanic Gardens.

Beyond the visitor experience, the museum has a renewed emphasis on engagement with LSU’s academic units and, particularly, the students. We have expanded our internship program and now have opportunities for hands-on learning in everything from collections care, educational programs, development, marketing, and design initiatives. Our next steps will seek to expand the use of the museum as a center for undergraduate and graduate research alongside opportunities for LSU’s faculty.

What do you hope visitors to the LSU Rural Life Museum walk away with?

I hope visitors walk away with an appreciation for the importance of preserving the past. Likewise, we look to instill

a better understanding of the struggles, ingenuity, skills, and resilience of all Louisianans who came before us. It is Louisianans’ often tragic circumstances that brought this unique blend of cultures together.

How is the museum one-of-a-kind?

There are other outdoor museums and museums that address 18th and 19th century history. However, the number shrinks rapidly when you consider the setting amid the 440 acres that is Burden Museum and Gardens. It is very rare that a museum is located within a property that includes botanic gardens focused on the working classes, the lives of the enslaved, and a broad range of cultural groups. Most museum-gardens combinations are the result of a singularly wealthy family or individual. In the LSU Rural Life Museum, the elites of society are noticeably absent from the everyday interpretation. When you combine all of this with the museum’s connection to the educational and research capabilities of LSU, you realize this is truly a one-of-a-kind museum. ■

Throughout the year, the LSU Rural Life Museum hosts tours and special events. Learn more at lsu.edu/rurallife.

THE HUMAN CONDITION: Building Connections Across Neighborhoods

By Alison Lee Satake

While Louisiana may be no stranger to disaster, it's also intimately familiar with community resilience. To capture the qualitative stories of humanity and community resilience, sociology professor and disaster research scholar Frederick Weil and his research team of LSU undergraduate and graduate students have conducted and collected hundreds of hours of taped interviews with people and community leaders throughout the pandemic.

In the aftermath of Hurricane Katrina in 2005, Weil collected 7,000 quantitative survey responses and numerous ethnographic interviews to capture how communities were responding amidst that disaster. He has since maintained contact with many community members through his neighborhood portraits project in which he gathers interviews and takes environmental portraits of people and places in New Orleans. His connections and ties to community leaders have been integral to his new research during the pandemic.

"Because we know everybody still, there's continuity. I don't think you could do [this research] if you didn't have that," he said.

One interviewee noted the way people came together after Hurricane Katrina in their neighborhoods to share food and help each other isn't safe or possible during the pandemic. So, people have had to rely on already established relationships, use technology in new ways, and become innovative.

With support from the National Science Foundation, Weil is conducting hour-long, in-depth qualitative interviews with community members and leaders. He has adapted a sampling process that stems from older European polling methods. His modified quota sampling approach begins with a random sample of interviewees, who are then allowed to pick interviewees based on a quota system so diversity in age, gender, and ethnicity are represented in the data.

"At LSU, we have a very diverse student body. When this diverse student body interviews people they know, we get diverse samples of data which reflect the population of Louisiana. So, we're doing it this way, and it's totally working."

Frederick Weil

LSU Sociology Professor and disaster research scholar

Although the research team has conducted more than 350 interviews so far, they are just beginning to scratch the surface on understanding the effects of the pandemic and community resilience. The early findings are already illuminating. The researchers have identified recurring themes of safety, stress, family life, vulnerability, interpersonal conflict, community assistance, partisanship, and social justice that have run through the interviews.

As part of their analysis, Weil's graduate student Samantha Ramey is leading a linked research team that is going through the interviews and identifying emerging themes from Black and minority perspectives. They are finding within the community a strong sense of mutual support, shared responsibility, caring for others, and support for social justice, but also feelings of vulnerability and distrust based on a long history of injustice.

From his interviews with community members, Weil has also found that many of the leaders who are actively responding to community needs during the pandemic in New Orleans learned disaster response in the aftermath of Hurricane Katrina. Some of the grassroots community response groups that emerged after the hurricane have since developed into mid-level nonprofit organizations or have even been absorbed by the city through the establishment of the Neighborhood Engagement Office.

"Some of these mid-level nonprofits have developed innovative connections to block-level neighborhood leaders like Sue Press, who is the president of the Ole and Nu Style Fellas Social Aid and Pleasure Club (see About the Covers on [pg. 64](#)). These connections form a kind of 'from the firehose to the capillaries' structure, where the mid-level organizations bring massive amounts of food or other supplies into the city, and the neighborhood leaders help distribute it to needy people who might otherwise be missed," write Weil and the research team. "In all cases, leaders are highly cognizant of infection risks and take extensive precautions to keep everyone safe." ■

The following pages feature some of the photos from Weil's Photographic Portraits of New Orleans Neighborhoods project.

Visit rickweil.com/NolaNBHs to read the interviews and see more of Weil's photography.





MEET THE RESEARCHERS



Weil interviews Ralph Sullivan (right), a resident of the Black Pearl neighborhood in New Orleans. Sullivan runs a home remodeling company but is mostly known in his own community for cooking barbequed oysters at second-line parades.



LSU sociology graduate student Samantha Ramey is pictured here in her hometown of New Orleans. According to Weil, her graduate advisor, Ramey is an outstanding statistician, a great ethnographer, and an amazing artist. Her interests include grassroots mentoring of children and adolescents as well as addressing mental health. She is working with Weil on COVID-19 and disaster research; working with Sue Press on creating a mentoring program; and she is writing and illustrating a graphic novel set in New Orleans. Before returning to LSU to study sociology, she studied mass communication and graphic design at LSU, worked as a digital artist in Los Angeles, and was a graphic designer for Microsoft.









PORTRAIT CAPTIONS

Pg. 10-11 Louisiana Creole family members Ellen, Elizabeth, Kaitlyn, and Alexi at their family's home in the 7th Ward. People with mixed heritage and ancestry who were born in the New World with ancestry in Africa, France, or Spain identify as Creole in Louisiana.

Pg. 13 Community arts leader Nurhan Gokturk (2nd from left) and friends at The Front, his art gallery, in the Bywater neighborhood.

Pg. 14 Deacon Isiah Riley in front of the Second Baptist Church of Cut Off that was founded in 1868.

Pg. 15 Artist and sign painter Simon Harveldt in the Irish Channel holds a portrait of Vera Briones Smith, a woman who died in Hurricane Katrina and was temporarily buried in a garden until her family could come for her remains.

Pg. 16 World War II veteran and carpenter Mr. Edward Lee built many of the houses in the Cut Off neighborhood on the West Bank.

Pg. 18 Musician Clarence "Frogman" Henry and his great-granddaughter Jaci Green on the West Bank.

Pg. 19 Musician and manager of Euclid Records in the Bywater neighborhood Lefty Parker.

Pg. 20 Ernest Johnson, president of the Broadmoor Improvement Association.

Pg. 21 Pepa Lopez is a costume designer from Spain, who lives in the Irish Channel.

Pg. 22 Pat McDonald, who works at the Candlelight Lounge, one of the last remaining old-style barrooms in Tremé, where local jazz musicians play.

Pg. 23 LSU alumna and retired University of New Orleans Sociology Professor Pam Jenkins with her neighbor Griffin Winn in Mid-City.



What Happens When A Newspaper's Opinion Page Ignores National Politics?

By Ariel Charbonnet

New Research Finds
More Local News Can
Bring People Together

A Google alert prompted LSU Assistant Professor of Political Communication Joshua Darr to drop everything else he was working on. From the alert, he read that Julie Makinen, the executive editor of *The Desert Sun* newspaper in southern California, had mentioned one of his studies. In this study, he had found political polarization increases when a local newspaper closes. In the absence of local news, Americans rely more heavily on national news sources to make political decisions. And the result is: “People are more likely to vote for one party up and down the ballot,” Darr said.



Credit: LSU

Less local news contributed to more polarization.

Intrigued, Makinen decided to conduct her own experiment. She announced her Palm Springs-based daily newspaper would drop national politics from its opinion page for the month of July 2019. Her rationale? Move the focus back to home. In lieu of cartoons and op-eds about the President, Congress, etc., *The Desert Sun* would devote space to local writers and issues affecting California, Palm Springs, and the surrounding Coachella Valley.

Immediately, Darr and his study co-authors Matthew Hitt from Colorado State University and Johanna Dunaway from Texas A&M University knew they wanted to seize the opportunity. They dropped all other projects. In two weeks, they managed to consult Makinen, design a new study, and secure approvals and funding. Through surveys to gauge political attitudes and a content analysis to assess changes in coverage, they were able to answer their research question: When a newspaper increases its emphasis on local issues, can it help bridge the political gaps in their community?



They found the answer is: yes. Their new book, *Home Style Opinion: How Local Newspapers Can Slow Polarization*, documents this work.

Darr shares findings and implications of this research below.

Much of your research focuses on the relationship between local and national settings, specifically political knowledge, partisan polarization, and local news. What are the consequences of inadequate local news and increased reliance on national news?

There is a strong and growing body of research showing just how much a strong local news environment helps government

work better. When it weakens, people know less about politics; they participate less in it; fewer candidates run for office; municipal bond ratings are worse; and representatives bring fewer benefits back to their district. Our work contributed to this by showing how national news can be detrimental: Information about national politics has never been more widely available or easily accessible, and it drives people apart politically.

You and your co-authors measure how banning national politics affected topics on *The Desert Sun's* opinion page and the attitudes of people in the Palm Springs area. What did you find?

The experiment was a pretty extreme change for readers of the newspaper: Mentions of Democrats or Republicans dropped from 25 percent on the opinion page to 10 percent, and mentions of then-President Donald Trump dropped from around one-third of all stories to zero.

There was a distinct localization of the opinion page: Issues that really matter in Palm Springs, like architectural preservation and transportation, surged in July, while nationalized issues, like immigration, fell away.

These changes had effects on polarization, as we'd hoped. We ran surveys of the Palm Springs area, as well as the Ventura area (a statistically similar comparison community), before and after the experiment. We measured two types of polarization: affective (how much you dislike the other party) and social (how uncomfortable you are in social relationships with members of the other party). We found that, relative to Ventura, polarization slowed down significantly in Palm Springs among those who read the newspaper, know a lot about politics, and participate in politics. The most politically engaged people were the ones most affected by the one-month decision to drop national politics.



What are the key takeaways from this research?

Local news emphasizes local identity, which can make political parties seem less important. Rather than thinking like Democrats and Republicans and deciding local issues based on national politics, local news provides an avenue for people to think like locals and address concerns unique to their community. If we lose it, national political news will dominate the discussion, and the political process will seem distant and alienating.

What do these results mean for news entities, communities, policy makers, and legislators?

Local newspapers with the resources to conduct an experiment like this may want to try it. *The Desert Sun* reported that readership of their online opinion articles nearly doubled in July compared to June, and they were able to recruit writers who continued to contribute in the following months.

Communities and local newspapers should work together to build up a roster of local opinion writers and reserve space for the leaders of local non-profits and advocacy groups to speak directly in the newspaper.

Policymakers and legislators should support local news as a way to make politics work better: Compromise, collaboration, and accountability are all improved when polarization is lower and local news is stronger.

In March 2021, Sens. Amy Klobuchar of Minnesota and John Kennedy of Louisiana and Reps. David Cicilline of Rhode Island and Ken Buck of Colorado introduced the Journalism Competition and Preservation Act (JCPA). What impact would this bill, if passed, have?

The JCPA would allow local newspapers to collectively bargain with the tech companies, specifically Facebook and Google, that currently take a large portion of their online advertising dollars. As print advertising declines, online ads matter more than ever, and newspapers make very little money from them since Facebook and Google take so much. The JCPA would be part of a long tradition of government assistance for vulnerable local news. ■

TO BE CONTINUED...

Darr and his collaborators are interested in replicating and extending this work. They've been in touch with journalism organizations that may want to partner with them. In the meantime, Darr has been running experiments on the connection between local news and local identity.

“The crisis in local news seems likely to continue...And we will keep trying to figure out what we are losing, why it matters, and what can be done about it.”

Joshua Darr
LSU Manship School of Mass Communication assistant professor

► Theortric “Bojack” Givens with his dog, Termite, inside his recently opened custom cabinet and furniture business, Givens Woodwork, LLC in Port Allen, Louisiana. In part because of his TIGER score (low-risk, low-needs), Givens was released from Angola Prison after 44 years and received financial literacy training through Louisiana Parole Project. He believes in “quality, not quantity” when it comes to his craft. Recent commissions include a table and chair set, built-in cabinets and shelving units, and a custom storage unit for a large vinyl record collection. LSU Parole Assistance and Re-entry Clinic efforts were key to Givens’ release—so far this semester, the clinic has enabled six clients to be released on parole, while two were denied.

Second Chances

Big Data Researchers Help Decrease Mass Incarceration by Identifying Low-Risk Prisoners

By Elsa Hahne

Andrew Hundley from Eunice, Louisiana, was sentenced to life without parole for second-degree murder when he was 15 years old. He spent 19 years in prison before being released in 2016, in part through LSU faculty efforts. Over much of the past decade, LSU researchers have applied big data analysis to evaluate the risk prisoners, such as Hundley, pose to society as well as the needs they would have upon release—merging expertise in sociology, law, and statistics. The researchers developed a tool called TIGER that is now used by the Louisiana Department of Corrections to help evaluate the risk posed by every incarcerated person in each of the eight prisons and numerous local jails across the state.

All Louisiana prisoners have a TIGER risk score, which helps guide critical decisions, such as who should or shouldn’t be released on parole. The tool also evaluates prisoners’ mental health, past substance abuse, and self-efficacy (ability to get stuff done), which helps parole officers be more objective and effective in deciding how they invest their time and resources.

“When I first started working for the Louisiana Department of Corrections, we had nothing to help us do triage and objectively evaluate individual prisoners,” said Assistant Secretary Rhett Covington, who spent 15 years as a parole officer. “Nothing but our experience and the biases that came along with that. We were flying by the seat of our pants with the limited resources we had, and there was no way to do true case management; each parolee got the kitchen sink.”

Seeing how Louisiana was the incarceration capital of not just the nation but the world—while having one of the highest crime rates—it became clear to LSU Department of Sociology Professor Ed Shihadeh and attorney and LSU Law School adjunct faculty member Keith Nordyke that the state could invest its money more wisely. They delved into the data and developed the TIGER toolset.

Credit: Louisiana Parole Project

As a result, LSU research has helped lower the Louisiana prison population by nearly one-fourth over the past few years from more than 35,000 incarcerated people in 2017 to less than 27,000 incarcerated people today.

Perhaps the biggest surprise for Shihadeh and Nordyke when they were looking at the data on 15 years' worth of past releases was the recidivism rate among second-degree murderers like Hundley.

"It was zero," Nordyke said. "Zero! That was big news, that you could get no recidivism out of these so-called 'old, hardened criminals.' Not a single one of them came back to prison. And among first-degree murderers, I don't think we had more than two, and one of them went back to prison because of drunk driving. So, the issue at that point became, if you've got a choice between a drug user, a drunk driver, and a second-degree murderer for a neighbor, who should you pick, for your own family's safety? You pick the murderer."

Shihadeh appreciates the power of big data to get to these types of surprising truths and discover solutions and possible savings for the state.

"We don't have to spend enormous amounts of money on a bloated government program that doesn't work," he said. "We've demonstrated in Louisiana that we can do this smarter and safer."

As a result, LSU research has helped lower the Louisiana prison population by nearly one-fourth over the past few years from more than 35,000 incarcerated people in 2017 to less than 27,000 incarcerated people today. The state spends an average of \$17,742 per prisoner per year. By reducing the number of prisoners, LSU research has saved the state more than \$150 million annually. And there are other gains for the state as well—former prisoners become workers and taxpayers, contributing to state revenue.

After his release, Hundley enrolled at LSU as a full-time student, graduating in record time just two years later with a bachelor's degree in sociology with a concentration in criminology. Today, he's the executive director of Louisiana Parole Project, an advocacy, support, and peer mentorship organization staffed entirely by former lifers. They offer housing and various support services to recent parolees who might have exited society when *Back to the Future* was the No. 1 movie at the box office, around 1985—before computers, email addresses, and cell phones, and usually before they ever had the chance to set foot in a restaurant or learn how to drive.

"I try to be careful about how I use the tagline, 'from tax burdens to tax payers,' but our organization has seen bipartisan support based on economics alone," Hundley said. "Even conservative businesspeople, who wouldn't necessarily be crazy about our type of program, have bought into it because keeping people who are no risk to society in jail shouldn't be a drain on state resources—especially if we've been training them in prison to be able to come home and utilize new vocational skills, whether that's carpentry or horticulture or small engine repair. One thing we've all been able to agree on is—let's put these people to work."

Jim Patterson, vice president of government relations at the Louisiana Association of Business and Industry (LABI), appreciates what TIGER is doing for the Louisiana business community as well. Through various forums and other efforts, LABI has been helping to connect employers with what Patterson calls "returning citizens."

"It's all about helping businesses find the workers they need," he said. "And what they need are workers who show up on time, do a good day's work, and no drama. That's why



Andrew Hundley spent 19 years in prison, sentenced to life without parole at 15 for second-degree murder, before being released on parole in part through LSU faculty efforts. He went on to earn a bachelor's degree in sociology with a concentration in criminology at LSU. Today, he's the executive director of Louisiana Parole Project, an advocacy, support, and peer mentorship organization staffed by former lifers, such as himself, to help newly released prisoners connect with resources and jobs. The recidivism rate among Louisiana Parole Project clients is 2 percent.

assessment techniques such as TIGER are so important. They help us increase the number of businesses out there willing to give these people—many of them hard workers with valuable skills—a chance."

Louisiana Parole Project started with one rental apartment and now owns several houses in the Baton Rouge area. The organization has been successful in getting former prisoners back to work and onto the straight and narrow. While the average Louisiana recidivism rate now is in the high 30s or low 40s, the recidivism rate among Louisiana Parole Project clients is less than 2 percent. About 85 percent are gainfully employed while some are too old or have serious health issues. One Louisiana Parole Project client started his own carpentry business while another took a job as a sign language interpreter having learned the skill at Louisiana State Penitentiary at Angola to help a fellow prisoner who was hearing-impaired.

Louisiana Parole Project, in turn, receives help from LSU students. Law students assist in representing clients at parole hearings, while LSU Department of Sociology and Roger Hadfield Ogden Honors College students do full internships.

"And not just as paper-pushers and to help answer the phone," Hundley said. "These students are part of the entire process; they come with us to do client interviews in prison, help us bring people home. That's important to us because we recognize that these students will become business owners and decision makers, prosecutors, and judges. No matter where they'll be in life, I want them to know about this hidden part of our justice system—what happens later, after people come home. Everything else is frontpage news: the crime, the court case, and the jail time. Not what happens after."

"When I got out, there were no resources for people who'd just left prison—beyond maybe their own families and a few charities."

Andrew Hundley
Louisiana Parole Project executive director

In two landmark cases, the U.S. Supreme Court made it possible for juvenile lifers to be released on parole. In 2012, *Miller v. Alabama* established that life without parole as a mandatory, one-size-fits-all sentence could not be applied to juveniles. And in 2016, *Montgomery v. Louisiana* said the previous ruling could apply retroactively. This is what set Hundley on the fast track toward parole—he was out in five months.

"I was lucky to have Keith [Nordyke] and parents who fought for me," Hundley said. "And in prison, too—I developed relationships with people; friends in prison become family, and I knew many people who were no less deserving of a second chance than I was: people who could change and do something. So, when I got home, I wanted to use the life experiences I'd had in prison and help others."

"When I got out, there were no resources for people who'd just left prison—beyond maybe their own families and a few charities," Hundley continued. "That's how the idea for the Parole Project came about, as a way to help with reentry. We use TIGER, too, to determine who'd be a good client and who we might be able to help the most. If someone is high-risk, they're less likely to be a good fit for a peer mentorship program like ours because what we do is entirely based on individuals having respect for us; we don't have badges, and we don't carry weapons. We're not law enforcement officers—in fact, everyone who works with us are formerly incarcerated people—our mentorship model works because we've been in their shoes, and we understand what it takes to be successful."

Assistant Secretary Covington acknowledges the critical role an organization like Hundley's can play.

"The Parole Project has done a phenomenal job helping people navigate this new world," he said. "TIGER, as a state-of-the-art tool, helps all of us get the leg up. Instead of the kitchen sink response, 'Do these 50 things to comply with parole,' TIGER helps our field officers avoid putting too much time and effort into low-risk people, which actually increases their risk because a large amount of supervision takes them away from jobs and social situations. If you over-program low-risk people, it will mess them up, and they'll end up back in jail." ■



LSU Department of Sociology Professor Ed Shihadeh developed the TIGER toolset.

Credit: Ed Shihadeh, LSU

Combating the Opioid Crisis One Patient at a Time

By Elsa Hahne

In the 1990s, pharmaceutical companies assured the medical community that patients would not become addicted to prescription opioid painkillers, so doctors began to increase prescription of these drugs, according to the National Institute on Drug Abuse.

By 2019, Louisiana healthcare providers were writing 75 opioid prescriptions for every 100 persons, compared to the national average of 47. In many rural parishes in Louisiana, there are now more active opioid prescriptions than there are residents.

“You simply cannot say who will misuse opioids, continue to use despite experiencing problems, and who will not. And although there are trends: we see more patients who also suffer from anxiety, depression, PTSD, or chronic pain, for example, this doesn’t translate to predicting which individual may misuse opioids.”

Julia Buckner
LSU Department of Psychology professor

It has become evident that opioid painkillers are indeed addictive, which has led to widespread misuse. Louisiana saw the nation’s steepest spike in drug-overdose deaths between 2019 and 2020, and over 70 percent of those deaths involved an opioid, according to the Centers for Disease Control and Prevention, or CDC.

While access to opioids remains broad, treatment for opioid use disorder remains limited. Improving access to treatment is one of the top strategies the U.S. Health and Human Services is deploying to combat the nation’s opioid crisis.



“It is more important now than ever that we expand access to affordable, evidence-based treatment to Louisianans to help prevent more drug overdose deaths,” said LSU Department of Psychology Professor Julia Buckner.

Buckner is helping to add critically needed behavioral health services for patients who misuse opioids and other substances in Louisiana. Her team has already helped hundreds of patients through a growing partnership with Our Lady of the Lake, or OLOL, Regional Medical Center.

“This work is especially important in light of new data from the CDC indicating that Louisiana is leading the country in increases in overdose deaths,” Buckner said.

Utilizing a treatment known as CBT, or cognitive behavioral therapy, Buckner aims to help patients become better managers of their own drug use and align behaviors with personal goals, going from misuse to use, or finding other ways to deal with pain.

“As the largest provider of mental health services in Baton Rouge, OLOL is an excellent facility for us to partner with,” Buckner said. “Our shared goal is to offer therapy to more patients in need but also to train more mental health professionals, including our LSU clinical psychology graduate students, to help combat the opioid crisis and save lives.”

What makes opioid use disorder different from other types of substance abuse is patients’ common experience with chronic pain as well as anxiety around pain. CBT takes the approach that thoughts, feelings, and behaviors are connected. By recognizing and purposefully changing your thoughts, you can change how you feel and behave. The treatment method is based on personal patterns and unique triggers; there is no one-size-fits-all solution, which makes CBT appropriate across diverse populations.

“We’re especially focused on bringing evidence-based treatment for opioid use disorder to underserved and high-needs populations, and that is certainly Baton Rouge,” Buckner said. “We want to reduce barriers to therapy.”

OLOL is the largest provider of health care to low-income residents in the Greater Baton Rouge area. About 70 percent of the 441 OLOL patients seen by Buckner’s team so far rely on Medicaid, Medicare, or are uninsured, and roughly 40 percent are persons of color. Buckner is careful to point out, however, that there is no “typical” patient with opioid use disorder.

Buckner’s patients represent the entire socio-economic spectrum.

“While many start with legally prescribed pain medication and then maybe use more than what is prescribed to help manage their pain or maybe their insurance doesn’t cover the medication and it becomes cheaper to get it other ways, not everyone with chronic pain goes on to develop an opioid use disorder,” she said.

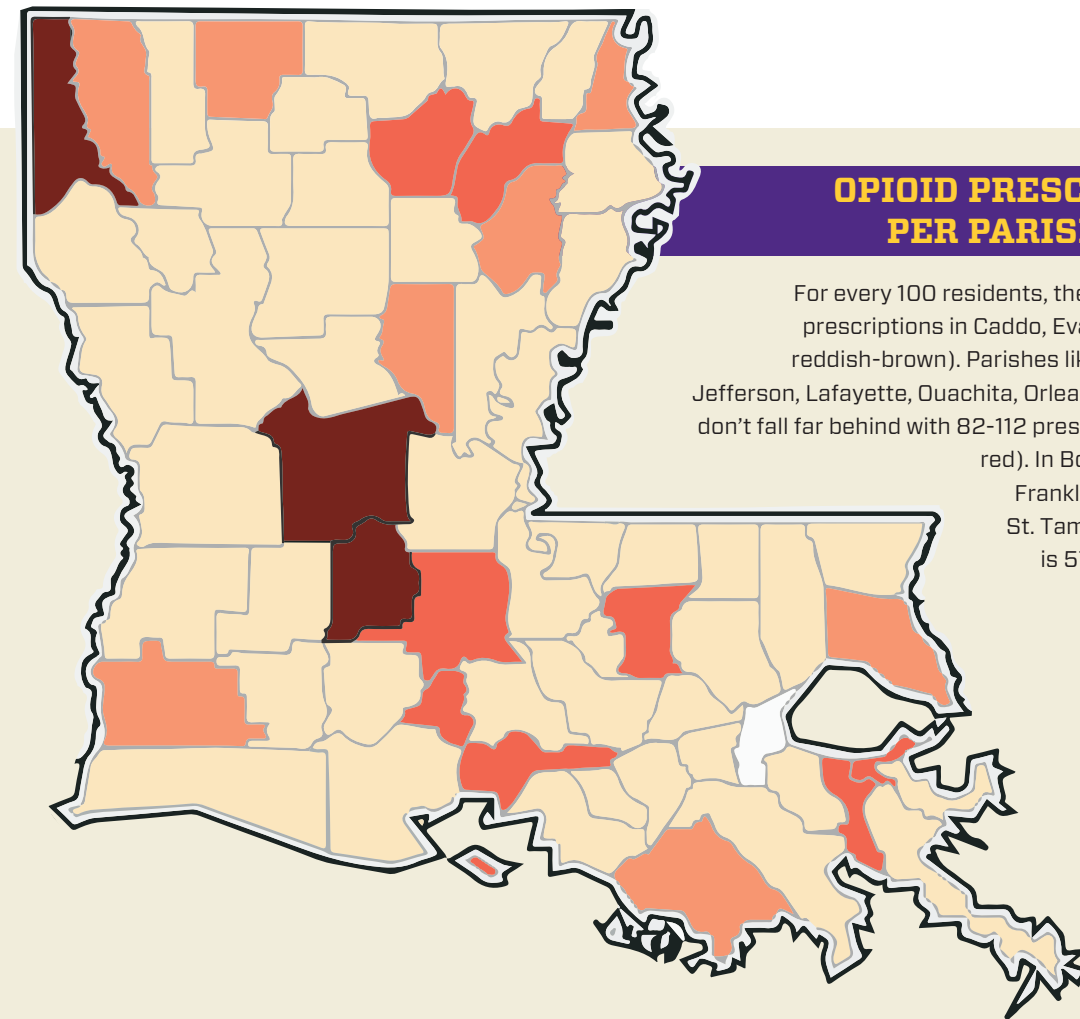
The joint LSU-OLOL effort is now in what Buckner describes as a third phase. They started in 2019, before the COVID-19 pandemic, but had to rapidly shift to telehealth to continue to provide services to both established and new patients in 2020. However, they were able to continue to provide in-person therapy in the inpatient psychiatry unit. Now, as more people are receiving the COVID-19 vaccine, there is a gradual return to in-person treatment, although the team will continue to offer telehealth as an option.

“This is something we learned; we’ve been pleasantly surprised at how successful we’ve been with telehealth,” Buckner said. “For some, transportation is a big issue, so being able to access therapy using videoconferencing helps them access treatment. But some patients don’t have reliable access to internet, which makes in-person therapy a better choice. It’s really up to the patient.”

The team is already working in three units at OLOL: the outpatient clinics, the medically assisted treatment clinic, and inpatient psychiatry. To further increase access to care, Buckner and her team are currently working with the medical staff to conduct consultations and intervention for all patients who present to the hospital and may be experiencing opiate misuse.

Buckner received nearly \$850,000 in support from the U.S. Health Resources and Services Administration, or HRSA, for the work, which includes recruiting, training, and retaining three cohorts of three doctoral students in clinical psychology to gain experience in providing CBT therapy.

“The hospital has been very supportive of us being there and our new goal is to figure out ways to help us stay there once the three-year HRSA grant expires next year,” Buckner said. ■





Humans in Space

LSU Faculty Work to Improve
Life on Earth And in Space

By Leslie Capo and Elsa Hahne

Credit: James Blair, NASA Johnson Space Center



Life in space is a part of NASA astronaut and LSU Health New Orleans School of Medicine faculty member Dr. Serena Auñón-Chancellor's reality and experience.

She is a medical doctor who is board certified in internal medicine and aerospace medicine.

She spent 197 consecutive days aboard the International Space Station. In 2018, she was the flight engineer for two expeditions aboard the space station that contributed to hundreds of experiments in biology, biotechnology, physical science, and Earth science. Dr. Auñón-Chancellor and her fellow astronauts conducted research on new cancer treatment methods and algae growth. Most of the research conducted on the International Space Station advances science that helps people back on Earth.

Credit: NASA



“The life science research that we do on board the space station is for everyone’s health down here. That’s why this is important—the more woman-power and manpower that we have on orbit, the more science we can do for you, to protect you and your health back here on Earth.”

Serena Auñón-Chancellor
Astronaut and LSU Health New Orleans associate professor of clinical medicine

Credit: NASA Johnson Space Center



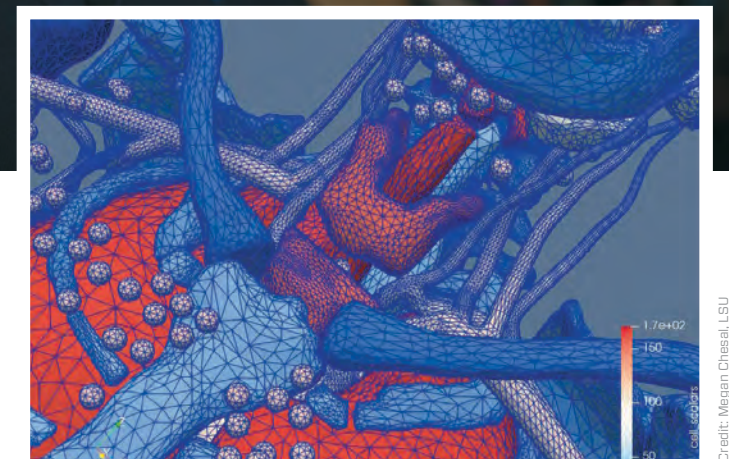
LSU Department of Physics & Astronomy Assistant Professor
Jeffery Chancellor

“The life science research that we do on board the space station is for everyone’s health down here,” she said. “That’s why this is important—the more woman-power and manpower that we have on orbit, the more science we can do for you, to protect you and your health back here on Earth.”

Now, she is a clinical associate professor of medicine at LSU Health New Orleans School of Medicine’s branch campus in Baton Rouge.

Dr. Auñón-Chancellor and her spouse, LSU Department of Physics & Astronomy Assistant Professor Jeffery Chancellor, are both striving to improve the human condition on Earth and in space. Chancellor has a total of nine research grants and leads a group of scientists who are investigating biological, physiological, and behavioral responses to spaceflight with \$1.8 million of support from NASA’s Human Research Program. He is focused on finding ways to help protect astronauts’ health and the safety of vehicles and equipment.

Radiation is one of the major deciding factors between life and death in space. The continuous background radiation, beyond the Earth’s protective magnetic field, is one of the hard limits for how much time anyone can spend out there.



Credit: Megan Chesal, LSU

A computational phantom developed by LSU master’s student Megan Chesal that can be used to study and predict the biological effects of various types of radiation on the body

LSU medical physics graduate student and Louisiana Space Grant Consortium fellow Megan Chesal is collaborating with Chancellor and developing intricate, fully digital 3D visualizations of human bodies, called computational phantoms, that can be used to study and predict the biological effects of various types of radiation. These computerized models can show fine detail, on the scale of human cells and DNA, on how different radiation particles and energies affect specific organs. They can also show how radiation affects men versus women.

The long-term goal of Chancellor’s research group is to enable long-duration spaceflight—perhaps even space colonization.



“Being an academic medicine faculty is one of the most—if not the most—important things to me.”

Dr. Auñón-Chancellor

Flight Engineer Serena Auñón-Chancellor conducts research operations for the AngieX Cancer Therapy study inside the Microgravity Science Glovebox. The new cancer research seeks to test a safer, more effective treatment that targets tumor cells and blood vessels.

Credit: NASA

Life Beyond Earth

Dr. Auñón-Chancellor recalls some her most memorable experiences in space.

“Watching thunderstorms roll across Africa at night during a night pass was one of the most amazing things I’ve ever seen; being able to see the entire Milky Way was beautiful. Just watching your body adapt and float and feeling so free wherever you moved inside the space station, and in space itself, never got old. Floating never gets old, even after 197 days,” she said. “You realize what an honor it is to be up there and what an honor it is to serve your country, to represent your country on board the space station, and really to serve the world and mankind.”

Merely six weeks after she returned to Earth, she was back on her feet treating patients in the hospital.

Now, she serves mankind as a NASA management astronaut, the aerospace medicine program director at the University of Texas Medical Branch in Galveston, and an academic clinical faculty member in the internal medicine residency program at LSU Health New Orleans, which aims to build an aerospace medicine program around the breadth and scope of her knowledge.



Image credit: Serena Auñón-Chancellor/NASA

“Captured Cygnus today with Alexander Gerst ... Proud to have The SS John Young on-board!” said astronaut Serena Auñón-Chancellor, as the International Space Station crew brought aboard the Northrop Grumman Cygnus cargo craft, loaded with nearly 7,400 pounds of research and supplies, including the Refabricator, the first integrated 3D printer and recycler.

“Being an academic medicine faculty is one of the most—if not the most—important things to me. I love being part of the critical years of a residency program where I get to take part in the shaping and molding of young physicians. The right faculty and the right mentor can really make all the difference, and that’s what I wanted to return to,” she said.



LSU Tiger Eye 1 mission logo design in the International Space Station’s cupola with Earth in the background

Credit: Shannon Walker, NASA

The Space Between

Meanwhile, Chancellor is leading a team of LSU students, young alumni, and industry partners to develop a radiation detection device that will gather critical information about background radiation on the Moon. The device is about the size of a smartphone and will be mounted on a lunar lander next year. It will transmit data from the Moon to LSU. The Tiger Eye 1 research team hopes to be able to maintain control of the device from a command center on the main LSU campus.

Understanding the types and amounts of radiation that exist on the Moon will be key to establishing a sustainable human presence on Earth’s nearest neighbor as well as traveling to Mars. The data brought back by Tiger Eye 1 will further Chancellor’s research and development of protective materials to shield people and equipment from radiation.

“We have models and predictions for human health risk on the Moon, but we don’t yet have actual measurements of the radiation spectrum on the lunar surface,” Chancellor said. “Now that we’ll get real data, we can use it to validate our models, make better predictions, and increase the safety of future space travel.”

He is evaluating the shielding used today on the International Space Station and SpaceX Dragon as well as developing designs to protect new space vehicles. Recent advances in 3D-printing technology offer promising new solutions as well.



Credit: Eddy Perez, LSU

The Tiger Eye 1 research team includes recent LSU graduates (left to right) Haley Pellegrin, Katie Hostetler, and Jacob Miller.

“It’s about where to put the shielding and how much of it to put where: location and thickness but also the material itself,” Chancellor said. “We can now print multiple materials over one solid object in layers. It all depends on where you need the most protection and the least protection. There are instances where you want the radiation to go through because it’s moving fast enough—by adding shielding and slowing it down, you could actually increase your exposure. So, instead of having three or four inches of shielding all over, we’ve developed a way to optimize it for the topography of a particular vehicle.”

Both Drs. Chancellor and Auñón-Chancellor work to improve life on Earth, in space, and in between.

“We could see the Earth and all its beauty, but you still felt somewhat disconnected because you couldn’t feel it. And it was amazing after you come back how much more I appreciate an early sunrise; how much I appreciate wind; how much I appreciate just standing outside during a quiet moment. It means a lot more to me now, I think, than it did before,” Dr. Auñón-Chancellor said. ■

COASTAL CHAMPION

Nancy Rabalais is unstoppable in her pursuit to protect the Gulf of Mexico

By Christine Wendling



For coastal communities along the Gulf of Mexico, its waters represent the cultural and economic lifeblood of the region. Many families have worked in the fishing industry for generations and are very attuned to changes in the Gulf.

According to LSU Professor Nancy Rabalais, local shrimp trawlers in the northern Gulf began noticing a mysterious decline in their catch rates as early as the 1970s. By the 1980s, fishermen and scientists knew the marine life there was suffocating from low oxygen but did not yet understand the causes and what could be done to solve this problem. Rabalais was determined to find out.

For more than three decades, Rabalais has studied the hypoxic zone, a large region of water in the Gulf of Mexico where oxygen levels are so low that marine organisms cannot survive in it. As a marine ecologist and professor in the LSU Department of Oceanography & Coastal Sciences, Rabalais' collaborative research has documented and tracked the links between deoxygenation, or hypoxia, in the Gulf of Mexico and agricultural practices that are increasing the amount of harmful nitrogen and phosphorus in the Mississippi River. Her findings have led to federal legislation concerning the diminished water quality.

Early Research

The daughter of a mechanical engineer who worked for an oil company, Rabalais spent much of her early life in Texas. She earned bachelor's and master's degrees from Texas A&I University in Kingsville and a doctorate from the University of Texas.

By 1983, Rabalais had moved to Louisiana and begun working for the Louisiana Universities Marine Consortium, or LUMCON. In 1985, LUMCON received a grant to study low oxygen in the Gulf, and Rabalais was put in charge of a team that included highly respected LSU professors Gene Turner and Bill Wiseman. On their first summer research cruise, which spanned the Mississippi River Delta to Texas and beyond, they found and measured a sizable area of low oxygen that covered the broad expanse of the Louisiana continental shelf.

Rabalais has conducted research on the Gulf of Mexico hypoxic zone aboard LUMCON's oceanographic research vessel, the R/V *Pelican*.

Credit: LSU

"It was a big deal because nobody had actually measured it that way before. Other researchers had monitored from Mobile Bay to the Atchafalaya, but we did the whole Louisiana inner shelf and determined the area of the low oxygen zone," she said.

But what was causing it?

Rabalais and her team discovered this coastal deoxygenation was caused primarily by agricultural fertilizer runoff flowing down the Mississippi River and into the sea.

"Agriculture is the major driver because you have ag on so many millions of acres with runoff ending up in the Mississippi, and with infiltration and leaching, fertilizers affect both groundwater and surface water," said Erin Meier, a sustainable agriculture expert and director of Green Lands Blue Waters, an organization based in Minnesota in which LSU is a founding partner.

The nitrogen and phosphorous from the fertilizer flow into the ocean, which fuels an explosive plant growth in the form of algal blooms. When the algae die, the decomposition process chokes the oxygen supply, making the area uninhabitable for bottom-dwelling marine organisms, such as shrimp, crabs, burrowing worms, and clams. If the organisms can swim

away, they will. Organisms that cannot escape eventually suffocate and die. The loss of these bottom-dwellers means less food for larger marine organisms, such as fish, reducing their population growth and forcing them to alter migration patterns away from the area. And the process is accelerating.

In 1985, the "Dead Zone" measured 3,800 square miles, making it one of the world's largest coastal hypoxic zones. Between 1985–2020, the "Dead Zone" averaged 5,300 square miles, nearly the size of Connecticut. In July 2017, it grew to 8,800 square miles, the largest ever measured. Since then, the size of the dead zone continues to fluctuate based on nutrient loads and tropical storms.

Gaining Traction

By 1997, political interest in the hypoxic zone had grown. Louisiana Senator John Breaux (D) had begun collaborating on a bipartisan effort with Maine Senator Olympia Snow (R), who was planning to introduce the Harmful Algal Bloom Research Control Act to Congress. But Breaux wanted to expand its scope to include hypoxia, so he invited Rabalais to testify before Congress on her findings on the "Dead Zone." Her expert testimony contributed directly to the passage of The Harmful Algal Bloom and Hypoxia Research and Control Act



Rabalais presents about the dead zone at the TEDWomen 2017 conference in New Orleans.

Credit: TED

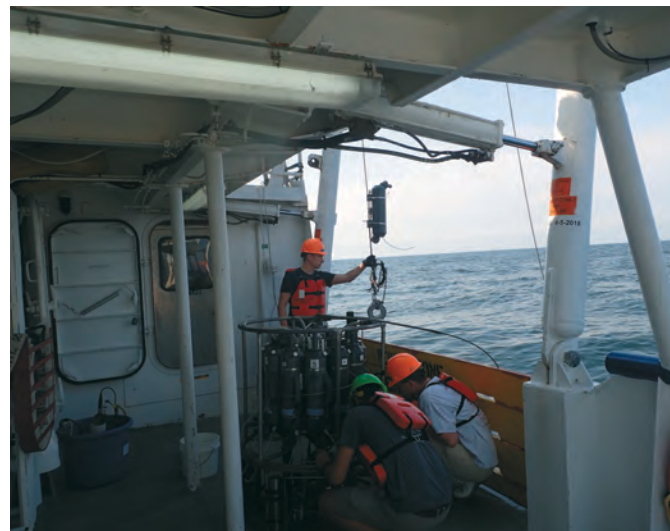
of 1998, which appropriated funds for the National Oceanic and Atmospheric Administration, or NOAA, to mitigate the harmful effects of algal blooms and hypoxia.

Since then, Rabalais' prolific outreach efforts have included lecturing throughout the U.S. about the effects of hypoxia; testifying several more times before Congress; and working with federal, state, and tribal agencies on plans for improving water quality in the Mississippi River Basin. In 2011, Rabalais received a Heinz Award for her innovative contributions to the environment, and in 2012, she received a John D. & Catherine T. MacArthur Fellowship, which is also known as the "Genius Grant." In 2021, she was elected to the most prestigious scientific society in the U.S., the National Academy of Sciences. She is one of the 59 women (out of 120 new members) elected, which is the largest number of women ever elected to the academy.

However, the momentum from the government to tackle the problem of hypoxia seems to have waned. In 2001, The Mississippi River/Gulf of Mexico Watershed Nutrient Task Force had established a national strategy to reduce the size of the hypoxic zone to 1,900 square miles by 2015. As that date neared, the taskforce extended it to 2035. Unfortunately, as of 2021, the forecasted size of the "Dead Zone" was 4,800 square-miles, still two and a half times larger than the Hypoxia Task Force goal.

Furthermore, in years past, Rabalais was able to take continuous measurements of oxygen, salinity, temperature, and currents within the "Dead Zone." Now, due to reductions in funding, she is limited to station-by-station data collected during her research cruises each July. Nonetheless, her work continues.

"I have to keep hoping," Rabalais said. "All I can do is try to keep educating."



Rabalais SCUBA dives in the Gulf of Mexico dead zone.

Credit: LSU

"Dr. Rabalais' extensive research efforts have made foundational contributions to our understanding and management of Gulf hypoxia...In particular, her research cruises over several decades to measure the size of the hypoxic zone are an essential long-term data set upon which NOAA and the Gulf Hypoxia Task Force relies to understand how the size of the hypoxic zone has changed over time due to natural and man-made factors. Her research has been a key factor in efforts to reduce nutrient inputs to the Gulf."

Steve Thur
NOAA's representative on the Gulf Hypoxia Task Force and
National Centers for Coastal Ocean Science director

Determination and Hope

There is still a wealth of data out there, and Rabalais is determined to get it, despite enduring injury and extreme challenges that would stop many. For example, on one research cruise, a strong wave threw her out of her top bunk while she was sleeping and onto the floor where she landed on her arm. As a result, she had to wear a sling for the rest of the trip. Her research colleagues thought they should turn around and go home, but Rabalais kept working. Later, another wave slapped the side of the research vessel, came through the port hole, and splashed on top of her open computer, frying it. Still, she refused to turn back. Despite it all, she got the data she needed. Her drive to learn and do more is unstoppable.

"All along, people have called these 'monitoring cruises,' but I resist that because we get so much good science on these cruises by asking new questions every time when we go out with our collaborators. So, I say this is not just 'monitoring.' It's a series of research cruises with which to test hypotheses," Rabalais said.

Meanwhile, she continues to publish new research, and her scientific papers have appeared in *Nature*, *Science*, and the *Proceedings of the National Academy of Sciences*. ■



WAYS TO HELP REDUCE DEAD ZONES

According to Erin Meier, a sustainable agriculture expert and director of Green Lands Blue Waters, agricultural practices can be more sustainable and better for the environment by incorporating continuous living cover cropping systems, such as these five strategies that keep roots in the soil year-round and help to prevent water, soil, and fertilizer runoff from entering the Gulf of Mexico and oceans worldwide.

"Continuous living cover strategies are production and productive strategies that build farm businesses as well as nurture the natural resource base," Meier said.

1. Agroforestry is the intentional integration of trees and shrubs (some of which are crop-producing themselves) into crop and animal farming systems to create environmental, economic, and social benefits.
2. Cover crops can be planted within the regular growing season or outside it to improve or maintain the ecosystem. They are often used between corn and soybean plantings to protect and add nutrients to the soil. For example, winter-hardy perennial grasses and legumes add year-round ground cover to fields.
3. Perennial biomass crops are plants that are grown and used for renewable energy.
4. Perennial forage refers to land planted with perennial plants that feed livestock and that can be grown as cover crops or in rotation and are eaten by grazing animals or harvested and fed to livestock after the growing season is over.
5. Perennial grains, unlike annual grains, are crops that are alive year-round and are productive for more than one year. They can have deeper root systems and longer growing seasons and therefore absorb and hold more rainwater and better capture nutrients—leading to less runoff and erosion.



Credit: Katherine Seghers, LSU

GRIT: New Reporters Cut Their Teeth Through the Rigorous Manship School News Service

WHILE LOCAL NEWS AGENCIES GAIN IN-DEPTH REPORTING

By Ariel Charbonnet

Rising digital news consumption over the past two decades has resulted in steep advertising declines, furloughs, layoffs, and media mergers. The result? Between 2008 and 2020, newsroom employment shrank 26 percent, according to a July 2021 Pew Research Center analysis. The number of reporters, editors, designers, photographers, videographers, and more working in newspaper, radio, broadcast television, cable, and digital news shrank by about 30,000.

Newspaper newsroom employment alone dropped 57 percent.

Among those newsroom casualties are statehouse reporters—state capitol journalists tasked with informing the public about state government issues and actions. According to Pew Research data, the number of full-time statehouse reporters decreased by 35 percent between 2003 and 2014. Alternative outlets, such as for-profit and nonprofit digital news organizations and niche ideological channels, are making strides to fill the gaps in coverage.

LSU’s Manship School Statehouse Bureau is one of the only journalism programs in the country that helps fill these coverage gaps. Part of LSU Manship School of Mass Communication’s experiential journalism curriculum, Statehouse launched in 2016 under the leadership of former professor and professional-in-residence emeritus James “Jay” Shelledy with support from former Manship School Dean Jerry Ceppos, who emphasized the school’s position at the intersection of media and public affairs.

The program operates in the spring semester through the field experience course taught by Christopher Drew, a 40-year veteran reporter and editor, formerly of *The New York Times*, *The Wall Street Journal*, and *The Times-Picayune*. Stories are distributed through the LSU Manship School News Service. Under Drew’s direction since 2018, Statehouse has grown from delivering Louisiana Legislature coverage to 13 news outlets around the state to more than 80, including *The Advocate*, *NOLA.com/The Times-Picayune*, *Shreveport Times*, WGNO-TV, WAFB-TV, and WBRZ-TV. Some smaller outlets like *The Eunice News* rely heavily or solely on Statehouse for coverage of the legislative session.

“The Manship News Service is a tremendous source of trusted information for *The Eunice News*,” said Harlan Kirgan, editor of the semiweekly publication in southwest Louisiana. “The students do a thorough job covering legislative sessions, and it is news that otherwise would not be available to the newspaper and website, eunicetoday.com.”

For undergraduate students enrolled in the course—a mix of about a dozen political communication and journalism majors—Statehouse is unlike any class or internship they’ve experienced before. It offers the rare opportunity to curate their skills in a professional setting and get an intimate look at how politics really work. Drew tells his students that curiosity, persistence, and determination to be fair and deliver the best version of the truth are what it takes to excel as a journalist.

“You need to be curious enough to want to know what’s going on and be persistent enough to get people to talk to you,” Drew said. “[Journalism] is about making people think, peeling back the layers, getting fresh insights, challenging assumptions in hopes that more thought and more discussion will lead to better decisions going forward.”

Statehouse alumnus Ryan Nelsen (LSU ’21) called the program “writing bootcamp.” One reason he loved the program was the opportunity to work with Drew.

“I found the relationship I had been looking for my entire life as a writer, which is an editor who’s not going to hold your hand, but he’s going to tell you to go do things,” Nelsen said about Drew. “He will encourage you, but more importantly, he’s going to show you your mistakes.”

Drew works closely with students to ensure their stories are truthful, balanced, insightful, and well-researched. His approach centers accuracy and fairness as non-negotiable. As an editor, Drew methodically engages with students, asking them questions to determine what can be published as a full, fair, and balanced story based on what they know and what they may have been hoping to find out.



Credit: Katherine Seghers, LSU

Manship News Service reporter Emily Wood works on a story remotely from her house during the COVID-19 pandemic.

“It’s kind of an intimate process, back and forth, whether we’re doing it on a shared Google doc or sitting together in past years at Statehouse,” Drew said of working with students. “I think that’s where the biggest learning comes in, too, because I’m really hands-on with them, forcing them to work at a professional level that they wouldn’t necessarily have had to do in most classes...Understanding the impact of a bad story or something being wrong in their story...that pressure forces them to work at the top of their game.”

Bootcamp with Drew paid off for Nelsen. About four weeks before the 2021 legislative session ended, Nelsen remembered thinking, “I’m doing this. Everything clicked.” Nelsen had ended a six-year stretch as a bartender just a few weeks before and was now writing up to two articles per day for Statehouse. He had started incorporating techniques from seasoned journalists into his own work and could see the improvement in his writing. He felt a sense of accomplishment.

“One of the things that I love about Statehouse is that you get students who really want to do stuff,” Drew said. “You get those students who recognize the commitment and are willing to put in extra time to make it good.”

Statehouse alumnus Adrian Dubose (LSU ’21) was one of those students.

He graduated from college before finishing high school, earning a technical certificate in a residential electrician program one week before graduating from high school. When he learned about Statehouse from some of the program’s alumni, he was in. And he loved it. Dubose ended up reporting on a range of topics, from legislation to regulation of legal advertisements to LSU Athletics funding to LSU faculty’s push to require vaccinations.

“The only regret you can have is saying that you didn’t do it,” Dubose said about joining Statehouse. “That’s what I live by.”

That determination to *do*—try, learn, and improve—is a shared attribute among Statehouse students.

“I’m always telling students just look around and take advantage of the opportunities,” Drew said. “Don’t just go to class and do the minimum...Do student media. Join the public relations organization. Do the digital advertising competition. I mean those are the things that get you jobs...Grab every good opportunity, and run with it.”

For Nelsen, Statehouse led to a defined career path. He graduated on May 7, wrote his last piece, a wrap-up of the spring Louisiana legislative session where legislators made changes to the tax code, public education funding, and criminal justice reform for Statehouse on June 11, and started a fellowship as City Hall reporter for New Orleans public radio station WWNO 89.9 on June 14.

Like Nelsen and Dubose, alumna Katie Peppo (LSU ’21) was willing to put in the work. She could have graduated in spring 2020, the same semester she first participated in Statehouse. In fact, she’d already been accepted into law school. But after one semester in the program, she’d discovered a new love: Louisiana politics. And she wanted more. Peppo decided to stay another year at LSU, in large part, to participate in Statehouse a second time.



Ryan Nelson covers the 2021 legislative session from the Louisiana State Capitol.



Credit: Katherine Seghers, LSU

Adrian Dubose (right) speaks with Louisiana’s Commissioner of Higher Education Kim Hunter Reed and Louisiana Board of Regents member Collis Temple III.

Without a writing or journalism background, Peppo had a lot to learn, which she did in the prerequisite public affairs reporting class with LSU Professor Michael Henderson. She learned the fundamentals of Louisiana politics from him, and Drew taught her how to write for publication. The tight deadlines forced her to get more comfortable with contacting politicians and state officials for interviews. Her confidence grew.

“I’ve learned the importance of being bold enough to pick up the phone and make the call,” she said.

That confidence—a career and life skill cultivated in Peppo and other Statehouse reporters—landed her piece about House Speaker Clay Schexnayder’s love of racing cars on the front page of Hammond, Louisiana’s daily newspaper, *The Daily Star*. That story ended up being one of several front-page bylines in her two years with Statehouse.

“Manship Statehouse/Manship School News Service’s student reporters’ articles are accurate and useful, often having relevance to the readers of my newspaper,” said Lil Mirando, editor of *The Daily Star*. “The material needs little editing, and the accompanying photos are helpful. This very worthwhile service is a credit to LSU, and as a public service, it is a very justified utilization of a public institution’s resources.”

“It’s rare when something works so well on all levels,” Drew said. “It’s hard to find something the school or university could do that works so well for student learning, real-world experience, job creation opportunities, as well as provide a public service for readers of the state, lawmakers, and then all these newspapers, especially the smaller ones, that have declining revenues and don’t have staff. We help keep them afloat.”

Kirgan echoed Drew’s sentiments, also referencing the Manship School News Service’s in-depth stories about racial and criminal justice produced in the fall through the LSU Cold Case Project, the fall semester component of Drew’s field experience course. Students investigate hundreds of thousands of FBI files obtained under the Freedom of Information Act with the goal to bring closure to unsolved Ku Klux Klan murders in Louisiana and Mississippi during the 1950s and 1960s.

“The coverage goes beyond state government,” Kirgan wrote. “For instance, they have produced stories about the Civil Rights Movement in the state. The stories were deeply reported and something readers would not get if not for the Manship News Service.”

Manship School News Service Cold Case reporters won first place in features, print, and online in the 2021 Diamond Journalism Awards for a four-part series on the Deacons for Defense and Justice, a group of armed Black men formed a half-century ago to protect Black neighborhoods from the Ku Klux Klan in Louisiana.

The news sites that run the Statehouse and Cold Case articles were asking for even more stories, so Drew also sends out stories each fall from his In-Depth Reporting class. Since 2018, these stories have earned top awards in enterprise, investigative, and sports enterprise reporting categories from the Louisiana-Mississippi Associated Press Broadcasters and Media Editors.

For Drew, the most rewarding part of running Statehouse is seeing his students blossom. Program alumni—often just out of college—cover or have covered the state legislature for some of Louisiana’s largest news outlets, including *The Advocate*, *Nola.com/The Times-Picayune*, 89.3 WRKF, WAFB-TV, and *Gambit*. They remind him why he loves journalism.

“When you see younger college kids share the passion for doing this, you want to help them, and you want to teach them all the things that made you love journalism,” Drew said. “You want to give them as much of a leg up as you can...Now, more than ever, we need people who can dig through the surface layers and get to some central truths...That’s one of the most satisfying things about journalism: peeling back the layers and making people think differently.” ■



Louisiana State Capitol

Credit: Katherine Seghers, LSU

Meet

JULIE LIVELY

Louisiana Sea Grant's New Executive Director



Julie Anderson Lively is the new executive director of the Louisiana Sea Grant College Program located at LSU. Her research has centered around commercial fisheries in the Gulf of Mexico with a focus on blue crab including soft shell crab production, which generates about \$293 million in Louisiana each year. Her work also includes shrimp and the shrimping industry, which generates a \$1.3 billion economic impact per year. Louisiana is the largest producer of seafood in the contiguous U.S.



Lively received her doctorate at the University of Delaware and has been a member of the LSU AgCenter faculty since 2010. She has led a wide range of Sea Grant-related research projects supported by more than \$23 million in funding for which she has been the principal or co-principal investigator.

Lively is Louisiana Sea Grant's fourth executive director since the program's establishment in 1968 and the first woman to lead the organization.

Louisiana Sea Grant promotes stewardship of the state's coastal resources through a combination of research, education, and outreach programs critical to the cultural, economic, and environmental health of Louisiana's coastal zone. Louisiana Sea Grant is part of the National Sea Grant College Program, a network of 34 university-based programs in each of the U.S. coastal and Great Lakes states, as well as Puerto Rico and Guam.

In 2020, the state saw an \$85.1 million economic benefit from Louisiana Sea Grant outreach and research activities.

The following is a Q&A with Lively.

How does someone who grew up in Illinois and earned an undergraduate degree in Missouri end up working on the Atlantic and Gulf coasts?

I have always loved water. And my mom would tell the story of when I was five, I chose to go to a Florida beach over a second day at Disney. In Delaware, when I was a post-doc, I started working in outreach when groups would visit the marine campus and commercial fisheries. Louisiana is a perfect fit for me as we have such great commercial fisheries that are still viable compared to many areas of the country that have dramatically reduced fishing fleets.

What similarities and differences have you discovered between coastal communities in Delaware and Louisiana?

I love working with coastal communities and I find similar threads—self-reliance and creativity—run through most of them. In both states, there's a great culture of living near the water that I've seen.

Louisiana has unfortunately become an expert in hurricanes, response, and rebuilding while many areas in Delaware and that region have avoided major storms for many years. However, working waterfront user conflicts are also much more of an issue on the Atlantic while in Louisiana, we have a lot of resources that overlap, such as oil and gas, multiple fishing and aquaculture sectors, recreational use, that find ways to work together.

You've done a lot of research on crabs. What's the most fascinating thing you've discovered about that shellfish during your career?

They're delicious! Mostly kidding, although we didn't get fresh shellfish when I was a kid in Illinois. But going back to my initial interests, we learn more and more about how shellfish larvae can go out into the Gulf of Mexico for weeks or months, and behaviors can influence their location within currents and tides to get back inshore. Chemical cues can help them find ideal locations to make their home.

In its 53 years, you're the first executive director of Louisiana Sea Grant to also have an appointment with the LSU AgCenter. What opportunities do you see from this new dynamic?

Sea Grant is a great mix of research, education, and extension, and all of our extension personnel have split appointments with the AgCenter. Extension is one means of getting the fantastic research LSU does to our coastal communities, and our agents do a bang-up job of accomplishing that. Maintaining a strong working relationship with the AgCenter has been a priority for each Louisiana Sea Grant director, and I think my dual appointment is a unique opportunity to continue to build this relationship.

What drives your passion for Sea Grant and its mission?

I love the Sea Grant mission of research, education, and extension. We try to fund research that can really have an impact on Louisiana, and we have the outreach and education arm to reach coastal communities. Louisiana Sea Grant has a great team that I've seen make a difference for individuals, businesses, and communities across the state.

What is your vision for Louisiana Sea Grant and how do you see the program serving Louisiana's coastal communities and residents over the next decade?

Coastal Louisiana is facing numerous challenges, but Louisiana has high-quality researchers across the state to help solve problems. Sea Grant also has strong partnerships and collaborations to help find the best solutions for our coastal communities. As the executive director of Louisiana Sea Grant, I'm hoping to continue the program's work and to expand our science, outreach, and education efforts to help with our coast's many challenges, which include workforce development, resilient communities, and disaster response. ■



(Above) Lively conducts crab research in her lab at LSU. (Below) Lively works with Louisiana Sea Grant, Louisiana Department of Wildlife and Fisheries, and community volunteers to clean coastal waters of derelict crab traps.



RAINMAKERS

As a top-tier research institution, LSU’s research faculty are proven leaders in their fields, performing at truly outstanding levels each day. LSU’s Office of Research & Economic Development, with the support of Campus Federal Credit Union, takes the opportunity each year to acknowledge some of our many outstanding faculty with the Rainmaker Awards, recognizing sustained excellence in research, scholarship, and creative activity.

Faculty members chosen as Rainmakers are those who balance their responsibilities in the classroom with securing external funding for their research and broadly disseminating their findings to not only the scholarly community but to society as a whole.

Each of the following award-winning faculty members has met one or more of the criteria for high-quality research or creative activities and scholarship, which include but are not limited to publication in a high-impact journal(s); highly cited work; external awards; invited presentations at national and

international meetings; high journal publication productivity; critically acclaimed book publication(s), performance(s), exhibit(s), or theatrical production(s); high grant productivity; and, for more senior candidates, outstanding citation records and high-impact invited presentations at national and international meetings. Two awards are granted at each career level including the Emerging Scholar, Mid-Career Scholar, and Senior Scholar levels.

All Rainmaker recipients receive a one-time stipend of \$1,000 and a plaque in recognition of their achievement.

Emerging Scholar

Arts, Humanities, Social & Behavioral Science

Nathan Kalmoe, Manship School of Mass Communication and Department of Political Science, College of Humanities & Social Sciences



Associate Professor Nathan Kalmoe holds a joint appointment in the Manship School of Mass Communication and the LSU Department of Political Science, where he studies the roots of public opinion and political action as mobilized by communication. He has published two books and 20 articles on the topic, and his work has been featured in *The Washington Post*, *New York Times*, *Vox*, *Politico*, *Atlantic*, *The Guardian*, and more. His most recent book, *With Bullets and Ballots: Partisanship and Violence in the American Civil War*, was published in July 2020.

Kalmoe’s current research on extreme partisan attitudes and behaviors in the public and the role of mass communication will fuel his third book, *Radical American Partisanship*—work he says is “exactly the kind of thing we saw in the January 6 Capitol insurrection.” Co-authored by Lilliana Mason, the book is expected to be released in 2022 and is based on more than a dozen public opinion surveys and experiments they’ve conducted since 2017.

Science, Technology, Engineering & Mathematics

Christopher Arges, Cain Department of Chemical Engineering, College of Engineering



The Gordon A. & Mary Cain Professor Christopher Arges investigates advanced materials for electrochemical processes for energy-efficient renewable energy conversion and water treatment. His research program includes both fundamental and applied studies that probe transport phenomena and reaction kinetics in nanostructured thin films with advanced metrology, such as in environmental x-ray scattering, analysis of device-level current distribution in fuel cells, electrolyzers, and electrodeionization units.

Mid-Career Scholar

Arts, Humanities, Social & Behavioral Science

Benjamin Kahan, Department of English, College of Humanities & Social Sciences



Benjamin Kahan is an associate professor of English and women’s, gender, and sexuality studies at LSU. He has held fellowships from Washington University in St. Louis, Emory University, the University of Pittsburgh, the University of Sydney, the National Humanities Center, the Reed Foundation, and the John Simon Guggenheim Memorial Foundation. He is the author of *Celibacies: American Modernism and Sexual Life* (Duke, 2013) and *The Book of Minor Perverts: Sexology, Etiology and the Emergences of Sexuality* (Chicago, 2019). He is also the editor of *Heinrich Kaan’s ‘Psychopathia Sexualis (1844): A Classic Text in the History of Sexuality* (Cornell, 2016), *The Cambridge History of Queer American Literature* (under contract with Cambridge), and a co-editor of *Theory Q*, a book series from Duke University Press.

Science, Technology, Engineering & Mathematics

Maheshi Dassanayake, Department of Biological Sciences, College of Science



Associate Professor Maheshi Dassanayake sequences and decodes plant genomes to better understand genetic and evolutionary processes linking genotypes to phenotypes and to interpret complex and fascinating messages embedded in genomes. Using genetic diversity to explain phenotypic diversity is necessary to understanding life and the genetic mechanisms underlying physiological and evolutionary processes, which can inform the development of crops for sustainable agriculture and effective conservation strategies, especially in the face of climate change, overpopulation, and increasing demand for food and bioenergy crops.

Dassanayake also studies plants called extremophiles, which have evolved to adapt to extreme environmental conditions over millions of years. By using both well-studied models and new genomes, she and her students explore what the genome-level differences mean and how they translate into distinct phenotypes and lifestyles.

Her diverse research projects are currently supported by multiple federal grants from the National Science Foundation, Department of Energy, U.S. Department of Agriculture, and U.S. Geological Survey. She also has several international collaborative grants from Israel, South Korea, and Australia.

Senior Scholar

Arts, Humanities, Social & Behavioral Science

Craig Colten, Department of Geography & Anthropology, College of Humanities & Social Sciences



LSU Professor Emeritus Craig Colten conducts research on a range of topics, including community resilience, adaptation to changing environments in coastal Louisiana, water, and hazards in the American South. He is the author of the award-winning book, *An Unnatural Metropolis: Wrestling New Orleans from Nature* (2005), and was recently named a Fellow of the American Association of Geographers.

He is an advisory board member of the Center for Collaborative Knowledge, which is an incubator of innovative and engaged scholarship to inspire students and teachers to become leaders in the cultivation of knowledge and the implementation of solutions to complex problems. Additionally, he serves on the Equity Advisory Group as part of the Governor’s Climate Initiatives Task Force.

Science, Technology, Engineering & Mathematics

Rongying Jin, Department of Physics & Astronomy, College of Science



Professor Rongying Jin’s expertise is quantum materials and physics. Her research focuses on the development of novel quantum materials that exhibit exciting quantum properties. This includes topological materials such as superconductors, semimetals, and insulators as well as quantum magnets. The quantum effects observed in these materials are intellectually stimulating with technological implications, spanning from potential energy applications to quantum computing. ■

ACCOLADES

LSU Shatters Record in Garnering Grants and Contracts

LSU faculty whose expertise spans multiple disciplines across campus were awarded more grants and contracts this past year than ever before. LSU garnered a record \$166.1 million in research grants and contracts this past fiscal year, which ended on June 30, 2021.

Last fiscal year, LSU received \$145 million in cumulative research funding, which includes state and federal research grants as well as contracts for services that rely on LSU expertise and instrumentation, such as scientific analyses and specialized trainings led by LSU faculty. LSU's second-highest record of \$156 million was met in 2009. On average, LSU brings in about \$150 million in research dollars per year to the state.

Every research dollar in Louisiana produces about \$2.91 within the state due to sales revenue for vendors who provide services and materials as well as spending by LSU employees, according to a report conducted by United for Medical Research for the National Institutes of Health. According to this calculus, this past year's \$166.1 million in grants and contracts will generate a roughly \$483 million economic impact for Louisiana.

"In the last fiscal year, we have achieved substantial success in helping LSU increase awards across the spectrum of academic and research units. These wins have been driven by our talented and competitive faculty, staff, and students who have doggedly pursued ambitious projects. We in the Office of Research & Economic Development have tried to match our support to the needs of researchers, and this great success is the result," said LSU Vice President of Research & Economic Development Samuel J. Bentley.

LSU Among the Top 100 Universities Worldwide Granted U.S. Utility Patents

Despite the global pandemic, innovation at LSU continues to thrive. LSU is ranked among the top 100 universities granted U.S. patents in the world. Faculty inventors at LSU campuses across the state garnered 38 U.S. utility patents for their innovative work spanning the sciences and engineering disciplines in 2020. Twenty-six of the 38 patented ideas were developed at LSU's flagship campus in Baton Rouge.

Being issued a U.S. utility patent is no small feat and can take several years. For example, one patent issued in 2020 was initially submitted in 2013. As a result, the LSU Office

of Innovation & Technology Commercialization staff have developed strategic programs to foster the spirit of innovation and to increase the success rate of patents and licensing at LSU. The office helps inventors build a team to support their idea or technology that consists of the lead inventor, an entrepreneurial lead, and a business mentor, who conduct critical market and commercialization evaluations through the National Science Foundation's LSU Innovation-Corps, or I-Corps, program.

The LSU LIFT² Fund also provides support to help transfer LSU technologies and innovations to the market—providing a bridge over the gap between basic research and commercialization, which is support that can be difficult to come by through traditional means. The LSU Board of Supervisors created the LIFT² program to "leverage innovation for technology transfer" across all of LSU's campuses. Innovations include creative and artistic works as well as devices, drugs, software, and other more traditional inventions. The LSU LIFT² Fund awards grants to faculty on a competitive basis in amounts up to \$50,000 to validate the market potential of their inventions.

LSU ranks 77 among the top 100 universities, according to the 2020 report released by the National Academy of Inventors (NAI) and the Intellectual Property Owners Association (IPO). The report uses data obtained from the U.S. Patent and Trademark Office (USPTO) and highlights the vital role patents play in university research and innovation. Previously, LSU ranked 94 in 2016 and 98 in 2017.

"The institutions included in this year's report are leading innovation worldwide through their encouragement of academic discovery and invention," said Paul R. Sanberg, president of the NAI. "We are proud to collaborate with the IPO for the ninth consecutive year to highlight universities that have made critical contributions to society."

Published annually since 2013, the report ranks the top 100 universities named as first assignee on utility patents granted by the USPTO in the 2020 calendar year.



Credit: STRI

LSU Biologist Awarded the Linnean Medal

World-renowned evolutionary biologist and LSU Department of Biological Sciences Research Associate Mary Jane West-Eberhard is a recipient of the prestigious Linnean Medal for 2021. She was bestowed the medal for her "significant contribution to the science of natural history and to the wider natural sciences community," according to The Linnean Society of London. She is one of seven women to have been awarded the Linnean Medal in Zoology, which was first given in 1888.

Her decades-long work with tropical social wasps focusing on careful field observation is a testimony to what a keen observer of natural history can contribute to evolutionary biology.

"I was thrilled to receive the Linnean Medal, because it focuses attention on the role of fieldwork and the integrative role of natural history in biology. Also, in its very long history, it has been given to some of my heroes of the past. It encourages me to keep on working!" West-Eberhard said.

She is an entomologist who first became fascinated with social insects and what they can teach people about the evolution of societies when she was an undergraduate student.

"I asked why organisms live in societies. It doesn't matter if they're insects, elephants, or human beings," she said.

West-Eberhard is a staff scientist emeritus at the Smithsonian Tropical Research Institute in Panama, who has lived in Costa Rica since 1979. She and her husband Bill spend several months out of the year in Baton Rouge as research associates at LSU. Their daughter, Jessica Eberhard, is an assistant professor of research and their son-in-law, Kyle Harms, is the Mary Lou Applewhite Endowed Professor of Biological Sciences at LSU.

"We have many valued colleagues in biology at LSU and feel especially at home in the LSU Museum of Natural

Science, because we are both evolutionary biologists and the LSU Museum of Natural Science is world-famous for its collections and the work of its staff and students in the areas of systematics and natural history. Many of them have done important research in the tropics," she said.

In her research, West-Eberhard has championed the important role of concepts such as kin selection, which include behaviors that may seem altruistic but actually contribute to the survival of family members and, therefore, the transmission of shared genes, as well as sexual selection, or the way competition for mates through social interactions leads to differences in reproductive success and genetic evolution.

For example, she showed that the division of labor between a queen, or a reproductive individual, and her non-reproductive daughters, who go outside and bring food back to the nest, can be a mutualistic or a kinship arrangement that works for individual benefit. In 2003, she published a 618-page book, *Developmental Plasticity and Evolution*, which clearly spells out the concept and draws together countless examples of phenotypic plasticity including the contribution of flexible behavior to survival and, therefore, to evolution. Her book has been upheld as a classic in evolutionary biology.



Credit: LSU

LSU Manship School Professor Jinx Coleman Broussard Recognized Nationally for Long Record of Media History Excellence

LSU Professor Jinx Coleman Broussard has been awarded the Donald L. Shaw Senior Scholar Award by the Association for Education in Journalism and Mass Communication's (AEJMC) History Division. This award honors a scholar who has a demonstrated record of excellence in media history that has spanned at least 15 years, including division membership.

Broussard is the Manship School of Mass Communication's Bart R. Swanson Endowed Memorial Professor and an award-winning scholar who has taught public relations, strategic

communication, media history, and mass media theory for more than 20 years.

“In a wonderful field of nominees, Dr. Jinx Broussard stood out as the perfect choice for this significant award,” the judges said. “The depth and breadth of her research, as well as the scholars she has helped to support and inspire, have left an indelible mark on the study of media history.”

AEJMC’s History Division established the award in 2020 in honor of Donald L. Shaw, a groundbreaking journalism theoretician, historian, and former head of AEJMC’s History Division best known for his research on the agenda-setting function of the press.

“I am incredibly honored to receive an award of this magnitude that is named after someone who made a tremendous contribution to journalism and mass communication,” Broussard said. “I had no idea when I began to conduct research on the Black press, while seeking to break new ground in media history, the work would lead me to this recognition.”

Broussard is nationally recognized as an expert on the history of the Black press, and her research also focuses on representations of racial and ethnic minorities, media history, alternative media, crisis communication, public relations strategies and tactics, and the civil rights movement.

Her award-winning book, *African American Foreign Correspondents: A History*, (LSU Press, 2013) traces the history of Black participation in international newsgathering from the mid-1800s to present. This pivotal work follows Broussard’s 2004 book, *Giving a Voice to the Voiceless: Four Pioneering Black Women Journalists*. Most recently, in 2019, she co-authored *Public Relations and Journalism in Times of Crisis: A Symbiotic Partnership*.

In 2018, the Scripps Howard Foundation and AEJMC named Broussard “Teacher of the Year.” The national award recognizes excellence in innovative teaching, mentoring of students and faculty scholarship, and leadership in educational and industry activities. Broussard received the LSU 2019 Rainmaker Award in the category of Senior Scholar in Arts, Humanities, Social & Behavioral Sciences. Her research also gained recognition when she received the 2019 Guido H. Stempel III Research Award from the E. W. Scripps School of Journalism at Ohio University.

In April, LSU honored Broussard with a 2021 Distinguished Faculty Award, which recognizes faculty members who have a sustained record of excellence in teaching, research, service, or any combination of the three. Broussard was one of five faculty members across campus to receive this award.

Nancy Rabalais Elected to the National Academy of Sciences

LSU College of the Coast & Environment Professor Nancy Rabalais is among the 120 newly elected members to the most prestigious scientific society in the U.S., the National Academy of Sciences. Rabalais is recognized for her distinguished achievements in original research. She is also among the 59 women who have been elected, the most women elected in a single year to the National Academy of Sciences.

Rabalais is an LSU Department of Oceanography & Coastal Sciences professor and the Shell Endowed Chair in oceanography and wetland studies. Since the mid-1980s, she has been characterizing the dynamics of the large region in the northern Gulf of Mexico where the oxygen levels in the bottom waters are so low in spring and summer that fish, shrimp, and crabs cannot survive, which is called the dead zone. Her research has documented and tracked linkages between oxygen depletion, or hypoxia, in the Gulf of Mexico back to nitrogen and phosphorus used in agriculture in the Midwest that flows down the Mississippi River. These findings have led to federal legislation concerning the diminished water quality in the Gulf of Mexico.

“My humble research beginnings in 1976 have grown into a ‘village,’ which is an interdisciplinary science approach that is essential to tackle global problems such as improving environmental quality. I share this honor of being elected to the National Academy of Sciences with all of my colleagues,” she said.

Rabalais serves on numerous boards and panels for federal agencies and national organizations. Currently, she is serving on the National Research Council’s “Oil in the Sea – IV” committee. She is a fellow of the American Association for the Advancement of Science, the American Geophysical Union, a John D. & Catherine T. MacArthur “genius” awardee, and now a member of the National Academy of Sciences. She graduated with a BS and MS from Texas A&I University, which is now called Texas A&M University-Kingsville, and a PhD from the University of Texas at Austin.

Five LSU College of the Coast & Environment Faculty and Graduate Students Garner Prestigious National Academies of Sciences’ Gulf Research Program Fellowships

Five LSU College of the Coast & Environment faculty, graduate students, and alumnae have been awarded prestigious 2020 fellowships by the National Academies of Sciences, Engineering, and Medicine’s Gulf Research Program, or GRP.

LSU College of the Coast & Environment’s Department of Oceanography & Coastal Sciences Assistant Professors Cassandra Glaspie and Michael Polito are among the 20 U.S. faculty selected for the Early-Career Research Fellowships. Now in its sixth year, the fellowship is awarded to emerging scientific leaders who are prepared to work at the intersections of environmental health, community health, and resilience, and offshore energy system safety in the Gulf of Mexico and other U.S. coastal regions.

LSU College of the Coast & Environment’s Department of Oceanography & Coastal Sciences alumnae Hanna Bauer and Jeanne Bloomberg, who both have received Master of Science degrees in oceanography and coastal sciences, and Department of Environmental Sciences doctoral candidate Rachel Correll are among the nine recipients of the program’s 2020 Science Policy Fellowships.

“Our faculty and students conduct research at the forefront of the world’s most pressing coastal and environmental challenges. With this support from the National Academies of Sciences, Engineering, and Medicine’s Gulf Research Program, these talented researchers will be able to advance knowledge and implement strategies that will ensure that future generations can value, conserve, and enjoy the natural resources in the Gulf Coast region,” said Chris D’Elia, LSU College of the Coast & Environment dean.

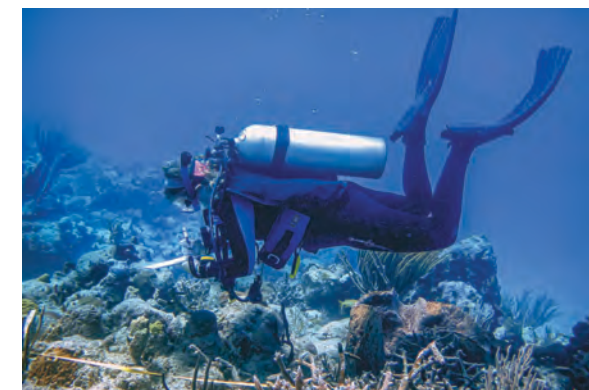
The two-year Early-Career Research Fellowships are awarded to tenure-track faculty at colleges, universities, and research institutions. Each of the 20 selected fellows receives a \$76,000 financial award, mentoring support, and a built-in community of colleagues who share an interest in the well-being of Gulf Coast communities and ecosystems. Since the award is not attached to a specific project, fellows are able to use the support to pursue bold, nontraditional research that they otherwise might not be able to conduct.

“The early years of a researcher’s career are a critical time. This program gives fellows the independence and flexibility to explore untested ideas and develop lasting collaborations,” said Lauren Alexander Augustine, GRP executive director. “The 2020 class of fellows are a distinguished group of individuals who have demonstrated superior scholarship, exceptional scientific and technical skills, and the ability to work across disciplines.”

LSU Veterinary School Receives \$11 Million COBRE Grant to Establish Center for Pre-Clinical Cancer Research

Less than 5 percent of anti-cancer drugs are successful in clinical trials, indicating that current pre-clinical cancer drug research is not predictive of efficacy in humans. Louisiana ranks fifth in the nation for cancer mortality and above the national average for several cancers that also disproportionately affect African Americans. This health disparity is of great concern to Louisiana.

As a result, the LSU School of Veterinary Medicine, or LSU SVM, has received an \$11 million grant to establish a Center of Biomedical Research Excellence (COBRE). The COBRE funds will create the Center for Pre-Clinical Cancer Research (Cancer COBRE), which will be based at the LSU SVM. This grant will last for five years and can be renewed for five or more years. The total amount awarded is \$11,027,290.



GOING THE DISTANCE

Distinguished Research Masters

Since 1972, the LSU Council on Research has presented the university-wide Distinguished Research Master award in recognition of outstanding faculty accomplishments in research and scholarship. The recipients are chosen by the council from nominees proposed by the university community. Each year, one recipient is chosen from the arts, humanities, social sciences, and behavioral sciences disciplines and another from the science, technology, engineering, and mathematics disciplines.

The Distinguished Research Master award provides winners a salary stipend and the University Medal—the symbol of exceptional academic accomplishment at LSU.

Arts, Humanities, Social & Behavioral Sciences

Pius Nkashama Ngandu, Department of French Studies, College of Humanities & Social Sciences



Pius Nkashama Ngandu is a distinguished professor of French language and literature in the LSU Department of French Studies and the Department of Comparative Literature. He was also the director of the Center for French & Francophone studies at LSU.

The African Literature Association honored him with its most prestigious award, the Fonlon-Nichols Prize, for his commitment to democratic ideals, humanistic values, and literary excellence in Africa in 2004. He received a “Baobab Attestation,” granted for the excellence of his commitment and contribution to the Francophone Caucus, as noted by the African Literature Association at Yale University in 2017.

Ngandu was a professor of literature at the Universities of Lubumbashi and Kinshasa in the Democratic Republic of Congo, Annaba University and Université Constantine in Algeria, and the University of Limoges and the University of Paris III-Sorbonne in France. With degrees in philosophy and literature as well as a doctorate from the University of Strasbourg, France, Ngandu wears the mantle of poet, novelist, playwright, and critic.

Science, Technology, Engineering & Mathematics

Robert Lipton, Department of Mathematics, College of Science



Robert Lipton is an American mathematician and academic who is noted for his research into the mathematics of materials and their translation to engineering applications. Lipton is a fellow of the AAAS, American Mathematical Society, and Society for Industrial and Applied Mathematics. Lipton is editor-in-chief of the *Society for Industrial and Applied Mathematics Journal on Mathematical Analysis*.

Lipton and his team of LSU students, postdoctoral researchers, and colleagues have developed new theory for identifying the strongest composites, the discovery of optimal multi-scale methods for the numerical simulation of heterogeneous media with imperfect interface, novel methods for opening band gaps in photonic crystals, and rigorous theory for quantifying dispersion inside electromagnetic metamaterials exhibiting double negative properties. Most recently, Lipton and the LSU team have used mathematics to show that novel non-local equations can be used to model the growth and interaction of stress cracks inside solid structures. Since 2018, Lipton has been the Nicholson Professor in the LSU Department of Mathematics.



LSU Pathobiological Sciences Professor Konstantin “Gus” Kousoulas in the lab with a collaborator

The Cancer COBRE will enhance cancer research both at LSU and at Southern University, strengthen collaborative research efforts with LSU Health New Orleans, and aid in efforts to establish a National Cancer Institute (NCI)-designated cancer center in Louisiana.

The Cancer COBRE junior investigators will address devastating and/or chronic human diseases that exhibit poor outcomes in patients and for which there are unmet therapeutic needs. The four cancer projects feature osteosarcoma, breast cancer, liver cancer, and prostate cancer as diseases that would benefit from pre-clinical models that are more predictive of mechanistic efficacy in humans and animals.

The LSU SVM is now host to three Centers of Excellence, including the Center for Experimental Infectious Disease Research established in 2004 by LSU Pathobiological Sciences Professor Konstantin “Gus” Kousoulas as principal investigator and the Center for Lung Biology and Disease established in 2019 by LSU Pathobiological Sciences Professor Samithamby Jeyaseelan as principal investigator.

National Science Foundation Funds LSU’s New \$2M Nuclear Magnetic Resonance Spectrometer

The highly competitive National Science Foundation’s Major Research Instrumentation program that catalyzes new knowledge and discoveries by empowering scientists and engineers with state-of-the-art research instrumentation has awarded LSU \$2M for a high-field 700 MHz NMR spectrometer

that will serve 23 participating research groups from 12 regional institutions.

The Nuclear Magnetic Resonance (NMR) spectrometer has both solid- and liquid-state capabilities. The instrument affords a 1.4–1.8-fold enhancement of magnetic field strengths compared to current capabilities. Thus, the NMR spectrometer will advance knowledge across diverse research fields.

“The expertise in biomolecular NMR is strong in Louisiana, but our state is currently the only southeastern state without high-field capabilities, which has made it difficult for Louisiana researchers to be nationally competitive,” said LSU Department of Chemistry Associate Professor Tuo Wang, who is part of the team that garnered the grant. “The acquisition of this new instrument improves our research and training infrastructure.”

The new instrument not only helps establish a high-field NMR facility in the Southeast region of the U.S. but also encourages and enables users with varying levels of NMR expertise to embrace NMR as a valuable component in their research projects.

“I’m so proud of our team! We have worked for six years to bring this instrument to Louisiana,” said LSU Department of Chemistry Associate Professor and co-Principal Investigator Megan Macnaughtan. “We are grateful for the patience and support from our colleagues and the university.”

The project has benefited from long-term support from the LSU Office of Research & Economic Development; LSU College of Science’s Departments of Chemistry, Physics, and Biological Sciences; LSU College of Engineering; Pennington Biomedical Research Center; LSU School of Veterinary Medicine; and LSU AgCenter. The award would not have been possible without the participation of several regional institutions, including LSU Health New Orleans, Louisiana Tech University, University of Louisiana Monroe, University of New Orleans, Baylor University, University of Louisiana at Lafayette, Southern University and A&M College, Nicholls State University, and LSU Alexandria. ■



The Nuclear Magnetic Resonance (NMR) spectrometer

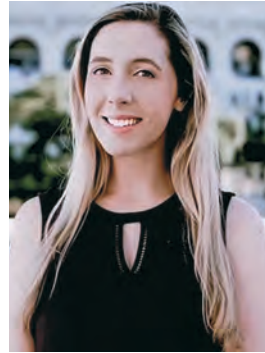
Distinguished Dissertation Awards

Since 1983, the LSU Alumni Association has sponsored the Distinguished Dissertation Awards. A committee of the graduate faculty selects the winning dissertations.

The Distinguished Dissertation Award recipients receive a monetary gift and a certificate of commendation.

Arts, Humanities & Social Sciences

Shanley Belle Treleaven, Josephine A. Roberts Alumni Association Distinguished Dissertation Award



Shanley Belle Treleaven’s dissertation titled, “Verbal response inhibition and stuttering in adults,” examined verbal response inhibition, or the ability to stop speech after its initiation, in adults who do and do not stutter. Results suggested that while there were not inhibition differences between clinical groups and overt symptoms of stuttering were

not related to verbal response inhibition, this was related to the lived experience with stuttering. Thus, a lifetime of experiences with stuttering may impact executive functions such as response inhibition. This supports emphasis on quality of life in the therapeutic setting rather than a sole focus on speech fluency.

Treleaven was awarded a postdoctoral research fellowship with the Speech Neurophysiology Laboratory at the University of Michigan’s Medical School. She has continued stuttering research there with an interest in executive functioning while learning neuroimaging techniques and neurological programming for speech fluency. Her scholarly work has been published in the *Journal of Communication Disorders*, *Clinical Linguistics and Phonetics*, and *Clinical Archives of Communication Disorders*.

She received her Bachelor of Arts in communication disorders and her Master of Science in speech-language pathology from the University of Alabama. She graduated with her doctorate in communication sciences and disorders from LSU.

Science, Technology, Engineering & Mathematics

Andreas Michael, LSU Alumni Association Distinguished Dissertation Award



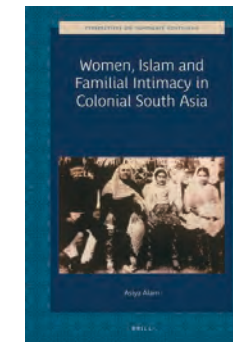
Andreas Michael received his doctorate in December 2020 from the Craft & Hawkins Department of Petroleum Engineering with a dissertation titled, “Fluid-Driven Fracture Initiation from Oil and Gas Wells Considering Lifetime Stresses.” He performed analytical and numerical research work on fracture initiation and geometric orientation during drilling,

completions, and loss of well control events, which are important for unconventional reservoirs and drilling safety. Michael developed a workflow that helps evaluate *a priori* whether fracture initiation will take place for a given offshore drilling scenario and how the capping strategy can be altered in the shut-in schedule to avoid fracturing and subsequent seafloor broaching, which can prevent potentially hazardous health and ecological consequences.

Michael was awarded the Louis Cagniard Award from the European Association of Geoscientists and Engineers in 2020. He placed 2nd in the PhD division at the Society of Petroleum Engineers, or SPE, International Student Paper Contest held in Calgary, Canada in 2019 and captained LSU’s team that won 1st place at the International PetroBowl Championship. He is the editor-in-chief of SPE’s *The Way Ahead* magazine.

A native of Cyprus, Michael served in the Cyprus National Guard for two years prior to receiving his bachelor’s and master’s degrees from the University of Texas at Austin. ■

MEDIA SHELF



Women, Islam, and Familial Intimacy in Colonial South Asia

Asiya Alam
Associate Professor of History

In *Women, Islam, and Familial Intimacy in Colonial South Asia*, Asiya Alam highlights the rich tradition of protest and defiance among the Muslim women of colonial India.

Bringing together a range of archival material, including novels, pamphlets, commentaries, and journalistic essays, it narrates a history of Muslim feminism conversing with and confronting the dominant and influential narratives of didactic social reform. The book reveals how discussion about marriage and family evoked claims of women’s freedom and rights in a highly charged literary and cultural landscape where lesser-known female intellectuals jostled for public space alongside well-known male social reformers.



Zorro’s Shadow: How a Mexican Legend Became America’s First Superhero

Stephen J.C. Andes
Associate Professor of History

Long before Superman or Batman made their first appearances, there was Zorro. Born on the pages of the pulps in 1919, Zorro fenced his way through the American popular imagination,

carving his signature letter Z into the flesh of evildoers in Old Spanish California. Zorro is the original caped crusader, the first masked avenger, and the character who laid the blueprint for the modern American superhero. Historian and Latin American studies expert Stephen J. C. Andes unmask the legends behind Zorro, showing that the origins of America’s first superhero lie in Latinx history and experience.



Analytical Approaches to 20th-Century Russian Music : Tonality, Modernism, Serialism

Inessa Bazayev
Associate Professor of Music

This volume brings together analyses of works by 13 Russian composers from across the 20th century, showing how their approaches to tonality,

modernism, and serialism forged forward-looking paths independent from their Western counterparts. Russian music of this era is widely performed, yet few analytical studies have explored the technical aspects of these composers’ styles. Musicians, scholars, and students will find here a starting point for research and analysis of these composers’ works and gain a richer understanding of how to listen to and interpret their music.



Into the Deep: A Memoir From the Man Who Found Titanic

Christopher Drew
Professional-In-Residence, Manship School of Mass Communication

Best known for finding the wreck of the Titanic, celebrated adventurer Robert Ballard has a lifetime of stories about exploring the ocean depths. From

discovering new extremophile life-forms thriving at 750°F hydrothermal vents in 1977 to finding famous shipwrecks including the *Bismarck* and *PT 109*, Ballard has made history. Now, for the first time, Ballard gets personal with co-author Drew Christopher, telling the inside stories of his adventures and challenges as a midwestern kid with dyslexia who became an internationally renowned ocean explorer.

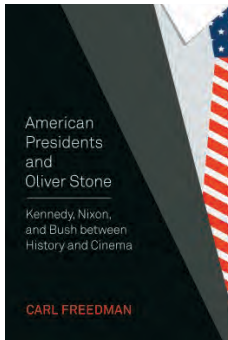


The Other 1980s: Reframing Comics' Crucial Decade

Brannon Costello
Professor of English

Fans and scholars have long regarded the 1980s as a significant turning point in the history of comics in the United States, but most critical discussions of the period still focus on books from prominent creators such as Frank

Miller, Alan Moore, and Art Spiegelman, eclipsing the work of others who also played a key role in shaping comics as we know them today. The 20 essays in *The Other 1980s* illuminate many works hailed as innovative in their day that have nonetheless fallen from critical view, partly because they challenge the contours of conventional comics studies scholarship.



American Presidents and Oliver Stone: Kennedy, Nixon, and Bush Between History and Cinema

Carl Freedman
Professor of English

Perhaps no current filmmaker has made more provocative films about American history than Oliver Stone.

In this book, Carl Freedman gives a detailed and nuanced account of the presidencies of John F. Kennedy, Richard Nixon, and George W. Bush as fictionalized in Stone's biographical films *JFK*, *Nixon*, and *W*. Offering detailed historical perspectives alongside careful aesthetic criticism, Freedman explores how Stone uses melodrama, tragedy, and farce to transform politics into national mythology, reflecting on both Stone's achievements as a filmmaker and American politics of the past 60 years.

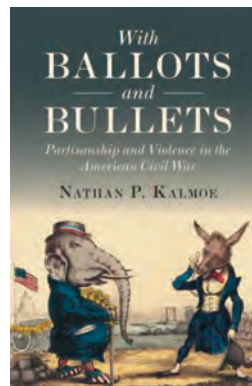


Maroon Choreography

Fahima Ife
Assistant Professor of English

In *Maroon Choreography*, poet and scholar Fahima Ife speculates on the long (im)material, ecological, and aesthetic afterlives of Black fugitivity. In three long-form poems and a lyrical essay, Ife unsettles the history while moving inside the continuing

afterlives of those people who disappeared themselves into rural spaces beyond the reach of slavery. At the same time, they interrogate how writing itself can be a fugitive practice and a means to find a way out of ongoing containment, indebtedness, surveillance, and ecological ruin.



With Ballots and Bullets: Partisanship and Violence in the American Civil War

Nathan Kalmoe
Associate Professor of Political Communication

This book reveals the fundamental role of partisanship in shaping the dynamics and legacies of the Civil War, drawing on an original analysis of newspapers and geo-coded

data on voting returns and soldier enlistments, as well as retrospective surveys. Kalmoe shows that partisan identities motivated mass violence by ordinary citizens, not extremists, when activated by leaders and legitimized by the state. Similar processes also enabled partisans to rationalize staggering war casualties into predetermined vote choices, shaping durable political habits and memory after the war's end. Findings explain much about 19th century American politics, but the book also yields lessons for today, revealing the latent capacity of political leaders to mobilize violence.



The Religion of White Rage: White Workers, Religious Fervor, and the Myth of Black Racial Progress

Lori Latrice Martin
Associate Dean, College of Humanities & Social Sciences
Professor of Sociology and African & African American Studies

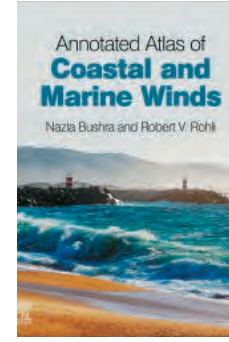
This book sheds light on the phenomenon of white rage and maps out the uneasy relationship between white anxiety, religious fervor, American identity, and perceived Black racial progress. Lori Latrice Martin and the volume's other two contributors examine the sociological construct of the "white laborer," whose concerns and beliefs can be understood as religious in foundation. The authors uncover that white religious fervor correlates to notions of perceived white loss and perceived Black progress.



Listen to Punk Rock! Exploring a Musical Genre

Michele June Pulliam
Instructor of English

In this book, Michele June Pulliam discusses the evolution of punk from its inception in 1975 to the present, delving into the lasting impact of the genre throughout society today. *Listen to Punk Rock!* will give those new to the genre an overview of important bands and products related to the movement in music. Notably, it pays special attention to diversity within the genre, discussing bands often overlooked or mentioned only in passing in most histories of the movement, which usually focus mainly on The Sex Pistols, The Clash, and The Ramones as the pioneers of punk.

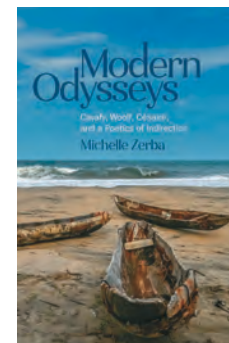


Annotated Atlas of Coastal and Marine Winds

Robert V. Rohli
Professor of Oceanography & Coastal Science

Annotated Atlas of Coastal and Marine Winds provides a quick-reference on major, prevailing near-surface wind systems, along with concise explanations of the features that cause

these winds and a quick qualitative assessment. This book explains global and regional wind patterns and moisture transport for understanding pollution patterns, prevailing storm tracks, climatology deviations, meteorology, and atmosphere-ocean relationships and is an ideal resource on coastal and marine winds for a variety of professionals, including coastal scientists, marine scientists, and engineers who study phenomena that are affected directly by weather and climate.



Modern Odysseys: Cavafy, Woolf, Césaire, and a Poetics of Indirection

Michelle Zerba
Professor of English

Michelle Zerba's *Modern Odysseys* explores three major writers in global modernism from the Mediterranean, Anglo-European Britain, and the Caribbean whose groundbreaking

literary works have never been studied together before. Using language as an instrument of revolution and social change, C. P. Cavafy, Virginia Woolf, and Aimé Césaire gave expression to the forms of human experience we now associate with modernity: homoeroticism, transsexuality, and racial consciousness. Zerba argues that Odyssean tropes of diffusion, isolation, passage, and return give form to works by these writers as she advances a revisionary account of how to approach relationships between antiquity and modernity. ■

ABOUT THE COVERS

Three different covers are featured in this year's issue of the LSU Research magazine. All three photos featured on the cover were taken by LSU Department of Sociology Professor Rick Weil as part of his on going Photographic Portraits of New Orleans Neighborhoods project. He has taken hundreds of photos in 14 distinct New Orleans neighborhoods: 7th Ward, Black Pearl, Broadmoor, Bywater, Carrollton, Cut Off on the West Bank, Hollygrove, Holy Cross in the Lower 9th Ward, Irish Channel, Lakeview, Marigny, Mid-City, Pontchartrain Park, and Tremé.

"People tell us about their neighborhoods. We want to see how neighborhoods are changing a dozen years or more after Hurricane Katrina," Weil writes. "We find a wide variety of patterns across many neighborhoods. We interview residents and take photographs to give a feel for what neighborhoods are like today and how they are changing."

The following are descriptions of the three portraits chosen for the cover of the magazine.



COVER #1:

Sue Press (right) pictured with her mother, Emelda Lewis-Frank, in her home in Tremé. Press is the president of the Ole and Nu Style Fellas Social Aid and Pleasure Club of which Lewis-Frank, who recently passed, was the "mother". Social aid and pleasure clubs, like mutual aid societies, are grassroots organizations that help community members pool their money and resources. They began around the 19th century and helped families cover the cost of burials and hiring a brass band. In Tremé, one of the oldest and most culturally vibrant neighborhoods in New Orleans, social aid and pleasure clubs invented the jazz funeral.



COVER #2:

Lynward L. Adams, or "Bud," (right) pictured with his friend in front of his Family Barber Shop located in Uptown New Orleans in the Carrollton neighborhood. Adams is a World War II U.S. Navy and Army veteran. After the war, he attended barber school and has been cutting hair on Oak Street for more than 70 years. The Family Barber Shop opened in the 1920s and is one of the oldest operating businesses on Oak Street. In 1967, Adams purchased the shop and continues to run it today. The barber shop offers "Bud's Special," which is a buzz cut for \$15.



COVER #3:

Crista Rock pictured out on her front stoop in the Irish Channel neighborhood, where she is a leader in neighborhood affairs. Rock is a filmmaker, photographer, photojournalist, and muralist. She wrote, shot, and edited a documentary series following a family of four as they struggled to rebuild after Hurricane Katrina, which aired on New Orleans local TV news channel, WDSU/NBC. She moved from Cleveland, Ohio to New Orleans in 2003 and now runs her own film production company, Crista Rock Productions "to tell the stories and struggles of New Orleans and its surrounding parishes." Her double-shotgun house pictured here has painted murals inside and out.





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OUR CALLING IS HUMANITY.

Driven by a sense of duty to others, we stand at the center of a global movement to save our planet. The critical work we do begins in our classrooms and laboratories, but it manifests in the lives of people in Louisiana and around the world. From preserving the ways of life for vulnerable communities and wildlife along the coast and protecting the health of our land and oceans to bolstering commercial industries affected by climate change, we believe in building something better—from our coast to yours.

You can help advance academic excellence by supporting students, faculty, staff, and projects like those highlighted in this issue. If learning about the research happening at LSU has inspired you to give to the LSU Foundation, please visit lsufoundation.org/ored or call 225-578-3811.

◀ Nancy Rabalais, professor and Shell Endowed Chair in Oceanography and Wetland Studies, was elected this year to the prestigious National Academy of Sciences.

