

LSU

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Natural Science

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Didelphis pernigra
Photo by Darwin Morales-Martínez

Letter from the Director

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Dear Museum Friends and Family,

As the fall semester begins at LSU, I'm excited to share our recent accomplishments and request your continued support for the Museum of Natural Science. Your philanthropic contributions to the Museum allow us to send out collecting expeditions to the far reaches of our planet to conduct cutting-edge research studies of biological diversity. Our goal is to better understand patterns and processes of biodiversity to help us, and future generations, understand the brilliant blue sphere we call Earth.

Over the past year, our curators and students have conducted research in Brazil, Colombia, Costa Rica, Equatorial Guinea, Galapagos, Indonesia, Malaysia, Mexico, Peru, Thailand, and the USA. Now, I write this introduction to our Newsletter as I sit on the porch of very cheap accommodation in Port Moresby, the capital city of Papua New Guinea. In three days, I will head to the top of a 3,056m (10,026 foot) mountain I last visited in 2019, pre-pandemic. I am exploring the genetic connections of endemic species found in high-elevation grasslands surrounded by ancient dipterocarp forests. The plan is to visit the largest highland island of three -the second largest surveyed in 2019- because these bunchgrass habitats, with 20-foot tree ferns, offer invaluable insights into evolutionary biology. While some of these field expeditions were supported by Federal grants, important gifts from Museum supporters like you helped achieve success in these essential field collections. Our collections are of exceptional value, attracting talented graduate and undergraduate students to our program, providing an essential biorepository for the future, and ensuring a lasting legacy of scientific inquiry. Despite hopes of Mars and beyond, Earth is all we have for the foreseeable future, and we desperately need to preserve it. One of the best ways we can do this is through exploration and discovery, as well as research, education, and curation of our precious collections. I'm pleased to announce that we have hired four new collection managers this year, some of the best and brightest young scientists. On the other hand, two long-term collection managers, Donna Dittmann and Steve Cardiff, retired after four decades of service. We will miss them, but their dedication to the Museum will continue as our new collection managers tap Donna's and Steve's deep institutional knowledge.

Earlier this year Dr. Al Gardner was inducted into the LSU College of Science Hall of Distinction. Al received his Ph.D. in Zoology (minor in Paleontology) from LSU in 1970, went on to a long and successful research and curation career with the National Museum of Natural History (Smithsonian Institution), and has remained connected to LSU as a donor to the MNS. Additional accolades include our own Dr. Sophie Warny being inducted as a Fellow of the American Association for the Advancement of Science (AAAS), one of the most prestigious accomplishments for a scientist.

This Newsletter is full of great science: morphology, genomics, natural history, and more. We appreciate your support. Please come visit the next time you are in Baton Rouge. Geaux Tigers!



Fig. 1: The College of Science Hall of distinction gala. Left to right, Dr. Mark Hafner, Dr. Sophie Warny, Dr. Chris Austin, Dr. Al Gardner, Dr. Jake Esselstyn, Dr. Greg Thom, Dr. Robb Brumfield, Dr. Nick Mason, and Dr. Prosanta Chakrabarty.

2024 Big Day Report

by David Vander Pluym

A highlight of the spring here at the LSU Museum of Natural Science is the annual Big Day fundraiser. For the past few years, we have been staying close to home and setting a new Big Day record for East Baton Rouge Parish. This year, though, we wanted a new challenge and returned to the event's original format for the first time since 2019: a statewide Big Day, with all of Louisiana as the playing field.

Starting at midnight on April 24th in Baton Rouge, we submitted 72 eBird checklists, birded in eight parishes, and consumed lots of caffeine. Twenty four hours later, we finished with a nice 185 species! Thank you to everyone who donated generously to support our research. For the full recap of our day, read on!

Our four-person team consisted of Diego Cueva, Quinn McCallum, Nick Ramsey (undergraduate extraordinaire), and David Vander Pluym. Ryan Klutts graciously volunteered to be our driver for the full day, keeping us safe and our spirits high after some misses!



Fig. 1: Left to right, David Vander Pluym, Nick Ramsey, Diego Cueva, Quinn McCallum, and Ryan Klutts.



Fig. 2: Eastern Screech Owl, spotted by Whiskey Bay, provided excellent looks.

We started at midnight in the Garden District, where we hoped for local breeders and nocturnal migrants. We heard flight calls right up to midnight, but they seemed to suddenly stop as our Big Day began. Studying the nocturnal migration of birds was something that the museum founder, George Lowery, helped pioneer!

We next moved to University Lakes, where we had better luck: we spotted our first bird of the day, Black-bellied Whistling Duck, and heard a Gray-cheeked Thrush fly over. By 1:00 AM, we made a quick stop in Port Allen for Rock Pigeon, a species we nearly forgot to look for before we headed to more wild parts of Louisiana! We next stopped at Whiskey Bay where we were treated to excellent looks at Eastern Screech Owl.

3:00 AM found us moving through the rice fields in search of owls and marsh birds. Having found most of our targets and being ahead of schedule, we were feeling pretty good about the day despite the lack of sleep!

Before dawn, we arrived in Kisatchie National Forest and quickly added our last nocturnal bird – multiple singing Chuck-will’s-widows – and had more thrushes flying over. Unfortunately, although we were on time, the dawn chorus was late. Nonetheless, we found Piney Woods specialties, such as the endangered Red-cockaded Woodpecker, plus Brown-headed Nuthatch, Bachman’s Sparrow, Eastern Towhee, and Prairie Warbler.

Slightly behind schedule, we arrived at the Kincaid Reservoir dam area by 7 AM. Here we had a good migrant flock, including our only Black-and-white Warbler of the day, a normally common migrant, plus a continuing Horned Grebe, and bonus Ring-necked Duck and Lesser Scaup.



Fig. 3: Nick Ramsey scanning Kincaid Dam while David Vander Pluym listens for migrants.

Next, we headed to Castor Plunge, a traditional spot on the Big Day route. A successful Big Day takes careful planning, scouting, and luck. Unfortunately, our busy graduate schedules had allowed us to only scout a few parts of the carefully planned itinerary. Skipping scouting for the breeders hurt us as we drove down to Castor Plunge, hoping for local breeding birds. We discovered that the road was under construction and completely closed before we reached our target area. This cost us dearly in both time and species. Trying to find backup spots, we added our only Ruby-crowned Kinglet and Swainson’s Warbler, plus a late Sharp-shinned Hawk. However, the hoped-for Louisiana Waterthrush and Acadian Flycatcher were nowhere to be found. The detour and slow start to the dawn chorus put us well behind schedule when we finally left Kisatchie National Forest.



Fig. 4: Backup location for Castor Plunge, which we were unable to get to. We failed to find our target birds but did have our only Ruby-crowned Kinglet of the day.

Our next spot, Booker Fowler Fish Hatchery, treated us much better as we quickly added three species we didn’t have the rest of the day: Purple Gallinule, Swamp Sparrow, and Kentucky Warbler. We then continued south on US-165 adding a much-needed Red-shouldered Hawk on a wire and checking small towns for House Finch before finally encountering a couple at a gas stop in Oberlin.

We then cut through rice country with eagle-eyed Quinn spotting our only Yellow-crowned Night Heron of the day. Despite our best scouting efforts, fields that were flooded and full of birds days before were bone dry. As I mentioned, along with planning and scouting, you also need a certain amount of luck on a Big Day!

Spending extra time, we found a couple of good fields and quickly added American Golden Plovers, Upland Sandpiper, and a surprise inland Least Tern. Finally moving south of I-10 by 1:30 PM, we discovered our best flooded field of the day and fantastic views of a King Rail in a ditch right next to the car.

By 3:00 PM we had arrived at the coast with a respectable 150 species. We quickly picked up new birds, including a Barn Owl we missed the night before and an uncommon Blackpoll Warbler. Rutherford Beach gave us our first coastal birds, good flocks of swallows, and a lingering Vesper Sparrow.



Fig. 5: Nick Ramsey scanning our best shorebird field while Diego Cueva checks an identification.

Though we just missed the Cameron Ferry, which wouldn't be back for at least 40 minutes, we were able to use the time to add Clapper Rail, Seaside and Nelson's Sparrow, and Scarlet Tanager before crossing by 6:00 PM. Just after crossing, we added a flyover Roseate Spoonbill, which was great for the spirits.

Though migrant species were low, it was a good day for Gray Catbirds and Orchard Orioles with multiple individuals seemingly in every bush. Even on a Big Day, sometimes you just have to appreciate the number of birds that manage to cross the Gulf of Mexico every year!

Fig. 6: Rose-breasted Grosbeak was one of a dozen migrant species we saw just after they had crossed the Gulf of Mexico.



We arrived at 6:40 PM at our last migrant stop along the coast: Peveto Woods. We spent nearly an hour there, and while it didn't have a lot of migrants, we still managed to add five species, including our last bird of the day, a flyover Bonaparte's Gull seen by only Nick and David. With daylight fading, we checked some coastal marshes hoping for a couple of last species. Traditionally the LSU Big Day ends at a private property site near Sabine Pass. Sadly, this year we were unable to gain permission, but we still were not ready to end the day!

We made a last-ditch effort to listen for Black Rail at a potential spot, but it didn't produce anything but the buzz of mosquitoes. By 8:40 PM we were on the road headed home, with 185 species under our belt. Our two biggest misses (by eBird frequency metrics for late April) were Red-headed Woodpecker and American Coot. Our most notable finds were Ring-necked Duck and Sharp-shinned Hawk, with the Horned Grebe being a nice additional lingering rarity and a new one for the LSU Big Day state cumulative list!

Despite road construction and our lack of luck, we still had a ton of fun: we saw various habitats and species we could not find in Baton Rouge! So, what will the future hold for the LSUMNS Big Day? This was an excellent opportunity for the new cohort of graduate students to gain experience with the statewide Big Day route. Species' distributions have changed since 2019. Some species have become much harder to find, while other species are new arrivals in the state. Tweaks are needed for the Big Day route, and with these tweaks, some scouting, and a lot of luck, might we break the statewide record next year? We also had a lot of fun with the East Baton Rouge Parish Big Day in 2022 and 2023, so maybe we'll decide to alternate doing a statewide and parish wide Big Days. Tune in next year to find out!

A huge thanks to all of you for your help in making the LSU Museum of Natural Science Ornithology Graduate Program the outstanding program that it is – your generosity is so appreciated!



Fig. 7: Diego Cueva looking for migrants at Rutherford Oaks where we had our only Blackpoll Warbler of the day.

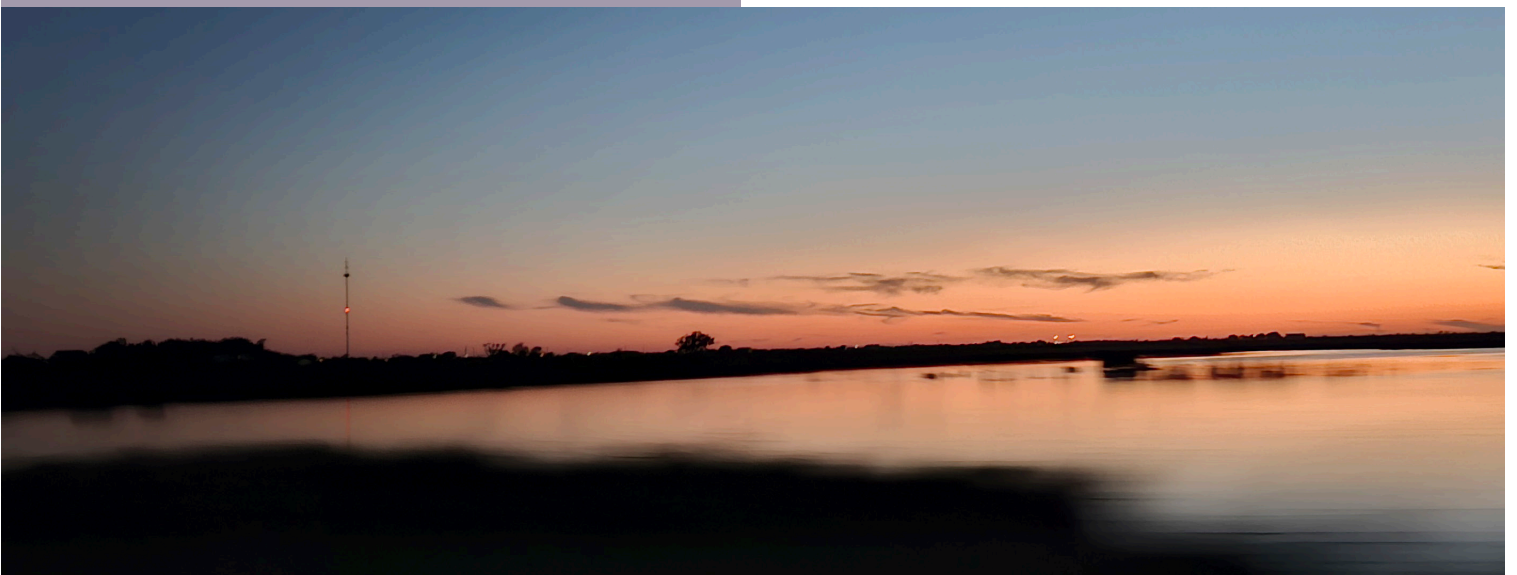


Fig. 8: Sunset over Cameron marshes.

LSU in Equatorial Guinea

by Dr. Prosanta Chakrabarty

I must confess that if you had asked me in July of 2023 to point to Equatorial Guinea on a map, I wouldn't have been able to do it – I probably wouldn't have even guessed the right continent. By January 2024 I was headed to West Central Africa with my student Sheila Rodríguez Machado along with LSU MNS Bird Curator Nick Mason. Nick was joined by Harvard postdoc Jonathan Schmitt (son of Museum Associates Donna and Greg Schmitt) to work on birds. Sheila and I, and later my collections manager Dave Boyd (who joined for the mainland part of the trip just before I left), were there to work on fishes. We were all there as part of a five-week effort led by Conservation International and the Bioko Biodiversity Protection Program to study the plants and animals of this poorly studied country. Besides the LSU team there were experts from all over the world working with locals to do assessments of over a dozen taxonomic groups.



Fig. 1: Left to right, Dr. Jonathan Schmitt, Dr. Nick Mason, Sheila Rodríguez Machado, Dr. Prosanta Chakrabarty, and David Boyd.

Equatorial Guinea (EG) is in West Central Africa, it is one of the smallest countries on Earth and also one of the least visited. It is also described as a 'hot spot within a hot spot' in terms of its biodiversity and has one of the highest primate concentrations as part of the Congo Basin. Broken up into the mainland, which is nested between Cameroon to the north and Gabon to the south, and the island of Bioko about 50 miles off the coast (closer to Cameroon than mainland EG). Bioko houses the country's main airport, population centers, and capital, Malabo. Equatorial Guinea is also the only nation in Africa whose official language is Spanish. It was once named Fernando Po and its history of colonization is as fascinating as it is distressing – as is the case for much of what was once cruelly and wickedly called, "The Dark Continent."

As I traveled, I carried with me a copy of Sir Richard Burton's 'Wanderings in West Africa' – which only covered the time of "Riffian Dick" was in Fernando Po over the last couple of pages, but it has some great lines from that Victorian explorer like, "I passed the long length of a single day and night in Madeira and consequently consider myself highly fitted to write a somewhat lengthy account of it. Despise not gentle reader first impressions." He ended his long (and frequently racist, I'm sad to say) book with these words: "So closed my voyage outward bond. Arriving in these outer places in the very abomination of desolation. I drop for a time my pen, in the distant memory of our having felt uncommonly suicidal through that first night on Fernando Po." Although I never felt as desolate as poor Burton, after 20 days of eating little more than rice and lentils (and sometimes just burnt rice), and pooping in communal pits with 30 others, I sometimes thought to myself, "Maybe going after freshwater fishes at high elevation on a volcanic island in the dry season wasn't the best idea."

Bioko also deserves its name "Ilé Formoso" (as named by Portuguese explorer Fernão do Pó), and as far as stunning nearly untouched scenery goes – I've been to few places more beautiful.



Fig. 2: Breathtaking waterfall in Bioko.

We spent our first days at camp just off the beach on Moraka Playa; it had large rocks on its shore, islands themselves at high tide, which we could climb and rest upon until the crashing tide swallowed up their bases and the sea reclaimed them. We saw many stunning sunsets from these boulders. Our camp was set within the forest which had little more than a 15' band of fist-sized rocks as the transition between beach and forest. Once you've passed those rocks you were in the thicket of tropical jungle and only the sound of the waves would remind you that you were still near the Gulf of Guinea. The sounds of monkeys, birds, insects, and tree hyraxes (my favorite sound amongst the clatter and one of the most haunting sounds I've ever heard) filled the air between sounds of the ocean crashing, sometimes thunderously, against the shore. It was paradise and were it anywhere else in the world it would be filled with tourists, sunbathers, vendors hawking their wares, and the general bustle of the hoi polloi. Instead, we had paradise to ourselves.

What kept people away from these shores was the political history of the island, a brutal dictatorship preceded the current one which is better known for being greedy with the country's vast oil riches than for its violence. Still, we were very happy to be invited by positive forces in the government interested in the development of an eco-tourism trade and a multiuse forest where EG residents and foreigners could enjoy the biodiversity. We were there to help document that diversity with the goal of one day aiding the creation of a national park on the island.

It was amazing to see so many different kinds of biologists working on their study organisms in the field at the same time. I've been a part of these large biodiversity survey groups before, where we all benefit from the shared infrastructure (a large camp with a cook and porters) but we also learn from each other and share a love of nature, collections, and conservation.

There were the botanists from the local university (Universidad Nacional de Guinea Ecuatorial) going out to collect plants deep into the forest: a forest in one of the wettest places on Earth, but in the dry season without flowers (it was truly remarkable to see such a green but flowerless jungle). There was the dung beetle biologist who used his own excrement to set cute little pit traps that looked like little fairy-houses made of leaves and sticks (but with a plastic cup as a trap door for getting specimens). There were the mammologists setting up tall canopies of mist nets for bats and large plastic blocking sheets and traps to catch the rodents on the ground (we had to be reminded that these were not the pit toilets that were dug for us elsewhere). And then there were 'the bird people' with their large prep tent bigger than any of our sleeping quarters (one or two-person tents) who seemed to be working 24 hours a day, first getting up early with the birds then preparing them for eternity. And of course, the ichthyologists: Sheila and I would wake up at a reasonable hour, have breakfast and head out to the various sites which were sometimes freshwater or coastal (marine) streams. Our work included snorkeling, seining, cast-netting, dip-netting and the like. We would repeat our morning efforts late in the afternoon, often in the same sites, because the ichthyofauna diversity would turn over and be very different.

The freshwater streams flowing from higher elevation were wonderful and we even had an outlet to one of these very close to the campsite. This pool near camp was also where we all bathed and where dishes were washed: "fishes love dishes and soap" is something I've said from experience at other places and sure enough this natural pool near camp had the highest concentration of fish we saw anywhere (probably due to the increased nutrients and food scraps we brought with us).

At low tide these spots were dominated by gobies (Gobiidae – a family with over 2000 species) and at night the sleepers (Eleotridae) and marine species would slide in and replace them with the higher tide. As you went higher in elevation (as we would, going up to 1000 meters and above to the caldera of one of the extinct volcanos that created the island), there were fewer and fewer fish and really only the climbing gobies (*Sicydium*) could make it (about 700 meters was there elevational limit). These fish used suction disks from their fused pectoral fins to cling to the rocks on the cold fast-flowing streams – that suction also made them very hard to catch even with coordinated efforts.



Fig. 3: A *Sicydium* goby sticking to my hand.

Besides, Sheila and myself, there were generally one or two EG residents with us also learning and helping to catch and prep the specimens. In Malabo, “Equipo de Peces” included two local post graduates: Elpidio Buelecope Sepa and Domingo Nseme Micha Avomo. It was great to see them learn about their local fish fauna which included pipefish (seahorse relatives), colorful killifish, and many kinds of gobioids.

In some of the marine sites we saw eels, surgeonfish and of course more gobies. Our favorite species of *Sicydium* appeared to have interesting sexual dimorphism and variation. Large bright blue males would sit in conspicuous sunny areas presumably to show off to females, while less blue, sometimes black and white males (we think of the



Fig. 4: The “Team Fish” at the Moraka Playa Camp.

same species) would occupy other parts of the rocks. Females, as they are in many dimorphic species, were inconspicuous and often hidden away. Because of their ability to stick to the rocks, which helps them climb up waterfalls (of which we saw many) and fight against the flow of water—they were very hard to catch and examine. We look forward to studying the genetics of these samples.

As noted earlier, we moved up from our cozy sea-level camp to higher elevation, a six-hour march that left many of us absolutely spent. I’ve never done a walk going steeply uphill almost the entire time and over such a long stretch of time. At the same time, I felt spoiled because our young and healthy porters were carrying the majority of the gear, and they were doing it twice as fast, some going back and forth in double our time. In the end we all made it but us fish folks did wonder why we left the wonderful marine streams below: there were very few fish as we entered higher elevation, but we also expected that. However, as the saying goes, “you never know.” I had joked that if we were going to find an isolated population of freshwater coelacanth (the famous “living fossil” fish), this was the spot (many coelacanth fossils are rather small and from freshwaters, as opposed to the giant marine living forms of today).

As the food rations shrank and became blander and blander, I did offer to catch the “crawfish” which turned out to be a prawn species (*Macrobrachium*), and we had our first nice meal in days when our cook Jordi pulled out some garlic and boiled our “crawfish” Louisiana style. These high-elevation prawns were amazingly abundant at night (in the thousands) and the fifty or so we all ate were delicious. I joked that they we were eating a new species, but that is unlikely to be the case. We did see a few high



Fig. 5: Sheila snorkeling to catch small fishes.

elevation crabs that we probably should have a taxonomist look at in the future (we lacked a carcinologist, one of the few taxonomic groups not represented among the biologists on this trip). Another fine meal was prepared by mammologist, Iroro Tanshi, who had the botanists gather some nice plants and she prepared a beautiful Nigerian dish – Akara, with crushed chickpeas and onions. It was wonderful, even more so after another long day of hiking.

At nights the groups of taxonomists would all reconvene under the camp dining area (a tarp roofed open space with three long tables the porters constructed from macheted wood), and we would talk about our day or the state of taxonomy and natural history in various places—from Eswatini to the Netherlands. The state of natural history research is not great in many places, but I liked the idea that we were taking the first steps in growing some budding naturalists among the people we worked with in Equatorial Guinea, along with the seasoned professionals who were already working and training people there. One thing I concluded was that the taxonomic expertise usually tucked away in Western museums and institutions was moving to where the biodiversity is – namely the Global South – and that’s a good thing.

As for numbers, after David Boyd joined the trip for the mainland portion (the last two weeks of the trip), there were 25 successful sampling events (33 attempted sites, eight mostly high elevation sites lacked fishes): 17 on Bioko and eight on the mainland. There were 632 specimens collected from 47 fish species (representing 34 genera and 24 families). Notably of the 47 species, 26 were only collected in Bioko and 21 on the continent, with no overlap in species (i.e., no species were found in both the island and mainland). We collected eight species of gobies and sleepers (Gobiiformes) on Bioko; while the mainland had more minnow (Cypriniformes) and catfish species. We did

not observe any introduced species, nor were there any endemics (of which there is only one reported from this tiny country). There were about 24 species observed previously on Bioko that we did not see. The fishes we collected are now back at the LSU MNS, and I thank those EG residents that helped us obtain permits, especially the extraordinary botanist, Maximiliano Fero.



Fig. 6: Some of the stunning blue killifish caught in Equatorial Guinea.

I hope this survey can help Conservation International and its partners convince the government of Equatorial Guinea to create that national park and invest in its incredible biodiversity.

Dr. Bishop's Gullah basketry donation

by Dr. Irene Martí Gil

Earlier this year, Dr. James Bishop (distinguished LSU alumnus) donated his collection of historic Gullah baskets to the LSU Museum of Natural Science. To celebrate, the LSUMNS organized a soirée on February 14th that gathered curators, collection managers, and other guests. Dr. Bishop kindly presented a sample of the ninety-two groups of Southern sweetgrass baskets and hand-woven decorative arts that he has generously bestowed upon the LSUMNS Anthropology Division.



Fig. 1: Dr. James Bishop presenting the collection of Gullah baskets that he donated to the LSUMNS.

Sweetgrass basketry is an emblem of southern culture in the Gullah Geechee Cultural Heritage Corridor, which extends from Jacksonville (FL) to Wilmington (NC). This region, also known as the Lowcountry, is the federally recognized National Heritage Area where the Gullah Geechee people have lived for centuries (Gullah Geechee Cultural Heritage Corridor Commission 2024; NPS n.d.). The Gullah Geechee are descendants of African slaves who, in the seventeenth century, were forced to work on rice paddies, cotton fields, and indigo plantations on the lower Atlantic coast. Plantation masters favored enslaved laborers from West and Central Africa because of their expertise in farming in moist climates and fertile lands, which significantly benefited the production of rice, cotton, and indigo — North America's most profitable crops at the time (Butler 2019; Johnson 2021; Morris 2022). When West and Central Africans were forcibly relocated to the Lowcountry, they brought their customs and practices and hybridized them with other African cultural elements and Southern traits. This resulted in a unique Gullah Geechee identity, culture, and language that has endured for centuries thanks to the consistent intergenerational transmission of traditions.

One of the practices that the original Gullah Geechee people mastered was weaving and sewing coiled sweetgrass. Sweetgrass is a strong grass that proliferates in the Lowcountry marshes and brackish river basins, and it is named after the sweet and long-lasting aroma of this grass after cutting it. With their distinctive weaving technique, the Gullah Geechee made baskets intended for different purposes. Sturdy and durable baskets were made of red oak stripping, saw palmetto, and locally-harvested black needlerush or bulrush. They were used in the field to help harvest, carry, and store produce (Charleston City Market n.d.; Mitchell 2024). One of the most popular shapes among utilitarian sweetgrass basketry was the winnowing fan—a wide and shallow circular tray to toss rice and separate the grain seed from the chaff.



Fig. 2: Large fanner basket made of *Juncus* (bull rush) and palmetto grass by Mary Jane Manigault (South Carolina, 1913-2010). Purchased by Dr. Bishop in 1992 for \$100, today's value is \$1,000. Accession Number: JMB 249.

More refined pieces, made of delicate grass found in the coastal dunes, were used in the house as storage, flower trays, and casserole covers, among other purposes (Mitchell 2024). In the antebellum context, basket-making not only provided the household with the necessary tools to carry on their daily duties, but it was also a source of income for elderly people who were not able to work in the fields anymore (Charleston.com 2018). This way, the foundations of commercial basketry were established as a family-run trade in which all members played an important role from a young age: children helped their fathers and uncles harvest local materials and learned how to weave from their mothers, sisters, and grandmothers.



Fig. 3: Baskets of all shapes and sizes in the event hosted at the LSUMNS exhibit area.

It was an event where the kith and kin sat together “telling stories, sharing life and making baskets” (Gullah Sweetgrass Baskets 2024; Mitchell 2024; Rosengarten and McKissick Museum 2022:11-12), and that sense of togetherness, belonging, and family pride has lasted to our days.

The 1930s marked an inflection point in the manufacture of baskets across the Lowcountry, as a result of the decline in rice production. The shifting economy solidified the transformation of baskets from a farm staple to a profit-making craft (Charleston.com 2018; Rosengarten and McKissick Museum 2022:6-7). Handmade basketry gained more reputation for its artistry and beauty and became a sought-after souvenir, which was sold in local markets and stalls along Highway 17. These roadside stands intended to “reach a moving market” of tourists traveling between the North and Southeastern regions (Charleston.com 2018; Rosengarten 2018:100). As the discipline evolved and adapted to new tastes, the Gullah Geechee basketry experimented with varying sizes and shapes, and new materials like palmetto leaves and pine needles that allowed for decorative additions, such as twisting rims and handles, and lids with knobs (Charleston.com 2018; Rosengarten and McKissick Museum 2022:1-12).

During the second half of the twentieth century, sweetgrass art garnered national and international recognition. In this context, Dr. Bishop started gathering Gullah baskets in 1977. In a personal communication, Dr. Bishop revealed that he has always been interested in folk art. In his own words, “Fiber arts are a particular interest. When I moved to Kuwait, I got into Persian carpets and expanded to traditional tribal weavings from all over the world,” one of them being Gullah baskets. Dr. Bishop said that, back in the 1970s and 1980s, Lowcountry basketry “seemed to be an overlooked area for collectors,” and that was one of the reasons why he decided to collect them.

In 1987, members of the Christ Church Parish in Mount Pleasant established the Sweetgrass Cultural Arts Preservation Society to protect the art of Lowcountry basket-making (Charleston.com 2018). Almost two



Fig. 4: Fanner baskets, and lidded and unlidded baskets exhibited in the LSUMNS for the event.



Fig. 5: Open-top cobra basket made of *Juncus* (bull rush) and palmetto leaves by Mary A. Jackson (South Carolina, b.1945). Purchased by Dr. Bishop in 1983 for \$175, today's value is \$3,000. Accession Number: JMB 220.

decades later, in 2006, sweetgrass basketry was made “the state craft of South Carolina” (Dale 2018:99).

In the past twenty years, the economic and cultural value of these baskets has sky-rocketed. The currently prevailing “glocalization” trends (which I define as a movement or inclination to appreciate what is local within the global context) have contributed to this basket valorization. E-commerce has given a chance to basket-makers to improve their exposure and sell their creations worldwide. This was particularly important during the COVID-19 pandemic, as local markets remained closed to the public for months. Now, online retailing has become a reliable source of income through the creation of special platforms like Nest (see buildanest.org), which “cultivates responsible growth and creative engagement of the artisan and maker economy” (Johnson 2021).

In addition, the growing online presence of folk art has helped bring academics’, collectors’, and journalists’ attention to sweetgrass basketry. This has facilitated Gullah Geechee art to permeate the museum’s jurisdiction. Travelling exhibitions have been presented across the country, such as the “Grass Roots: African Origins of an American Art” (organized by the Museum for African

Art in New York, the Avery Research Center for African American History and Culture at the College of Charleston in South Carolina, McKissick Museum at the University of South Carolina, and the Sweetgrass Cultural Arts Festival Association). Sweetgrass baskets have also been accessed into permanent collections, like at the Smithsonian American Art Museum in Washington and the Museum of Arts and Design in New York (Mitchell 2024). Thanks to Dr. Bishop, the LSU Museum of Natural Science forms part of this list of exclusive institutions that curate Gullah baskets on a full-time basis.

The LSUMNS Division of Anthropology is honored to have been chosen as the guardians and stewards of this precious collection, not only because it is valuable in economic terms (it has been appraised at over \$51,000), but also because of its ethnographic worth — It is the testimony of an endangered traditional genius. Sweetgrass basket-making is at risk because encroachment makes it harder for basket-makers to harvest sweetgrass (Dale 2018:115; Johnson 2021), and the lack of younger generations interested in continuing the craft threatens its long-term survival. Furthermore, the fact that Dr. Bishop has only “very few items [in his collections] from North and South America” makes this donation all that more special.

Fig. 6: Flower basket with a flat base and wide, outward curved rim with a cross-handle made of sweetgrass, palmetto, and pine needles by Mary Irene Forman (South Carolina and Florida, 1923-2001). Purchased by Dr. Bishop in 1979 for \$20, today's value is \$700. Accession Number: JMB 151.



Dr. Bishop confessed that he decided to donate these baskets to the Museum because “[he knew that] the baskets [would] find a good home at the LSUMNS where they [would] be used for education, research, and display.”

On behalf of the Anthropology Division, I attest to our commitment to educating large audiences on the exquisiteness and sophistication of Gullah Geechee craftsmanship, promoting anthropological studies on this community, and – to the best of our abilities – showcasing Dr. Bishop’s collection of sweetgrass basketry to the world.

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The 56th Annual Meeting of AASP-The Palynological Society was a hit!

by Dr. Sophie Warny

The recent annual meeting of the American Association of Stratigraphic Palynologists (AASP), the 56th, just took place from June 24th -28th, 2024 in the beautiful city of Montpellier. Severine Fauquette (from the University of Montpellier) and I spent last year selecting the various venues and field trip sites, vendors, sessions, etc. After a year of careful planning, the day finally arrived. About 75 palynologists from around the world participated onsite in Montpellier. From what we've heard, all had an amazing time and appreciated the quality of the talks, posters, and the other events. Palynologists from France, Belgium, United States, India, Malaysia, England, South Africa, Egypt, Italy, Argentina, Colombia, and Panama, just to cite a few, did a wonderful job sharing their research. The 30+ graduate students and early career professionals definitely showed us that the future of palynology is in great hands. We did not envy the job of the award committee as the bar placed by students in all talks and posters was very high, and a selection of winners was not an easy task.

All abstracts, programs and many emails were handled very professionally by Ana Ejarque (ISEM, CNRS, Univ. Montpellier, France) and Reyes Luelmo (ISEM, Univ. Montpellier, France), who did a fantastic job putting together three well-organized scientific sessions and handled a lot of the talk and poster logistics in the last month. Severine and I are also very grateful for the help from ISEM colleagues, Vincent Montade and Sylvie Rouland. Our gratitude is also extended to Vladimir Torres who worked tirelessly this past year handling the many financial details and various contracts associated with hosting our meeting. We also thank Steven Stukins for handling the memberships and all the announcements, Fabienne Marret for creating the website, and Marie Thomas and her team for handling all student travel scholarships and the various meeting awards.

Finally, we tried to keep registration fees as low as possible. It wouldn't have been possible without the grants received from the University of Montpellier, ISEM,



Fig. 1: Group picture of some of the participants in the 56th AASP annual meeting in Montpellier (France).

CEMEB, and projet ANR MeSCAL. Additional funding was received from Hess Corporation in Houston. Vladimir Torres also provided personal funds to help support some of the Early Career Researcher (ECR) events.

On Monday June 24th, 12 palynologists joined the pre-conference field trip that was designed to provide a view of vegetation of Camargues and study the various plants adapted to flooding by water of various salinities in marshes and pools. This field trip was hosted by Dr. Patrick Grillas, who guided us to visit traces of ancient branches of the Rhone at the Tour du Valat Nature Reserve. Plants observed included several species of *Damasonium polyspermum*, *Pulicaria sicula*, *Cressa truncata*, *Nitella opaca*, *Chara* spp., *Tolypella* spp., various *Plantago* just to name a few. The group had lunch at the Tour du Valat kitchen, before heading to the Salin d'Aigues Mortes. Aigues-Mortes is a fortified Medieval town at the base of the salins.



Fig. 2: Picture of Salin d'Aigues Mortes featuring this summer's salt production in the front and the pink coloration of the algae *Dunaliella salina* in the back.

The name comes from the Latin *Aquae Mortuae*, i.e., dead waters, after the stagnant salty waters surrounding the town at its creation. The impressive salins we visited are the site of salt production that dates back to Antiquity (4th century B.C.). The current company mining the salt was founded in 1856 as the "Salins." Their products are sold around the world as fine salt table La Baleine or in coarse crystal form "Fleur de Sel de Camargues." Besides visiting

the impressive production, we spent time reviewing the unique flora. The presence of salt creates an environment where only certain species of plants can survive. About 200 species of plants have been listed on the Aigues-Mortes site. Another algae peaked the interest of our group, although not a dinoflagellate... This algae, responsible for the breathtaking pink coloring of the salin basins, is called *Dunaliella salina*. It is mostly found in hypersaline environments, such as salt lakes, marshes or evaporation ponds.

ICE BREAKER - Monday, June 24th

That evening, we hosted the ice breaker in the «Jardin des Plantes», i.e. the university's Botanical Garden. In addition to being a stunning site to host our first social event, the Montpellier Botanical Garden has quite a history. It is the oldest in France, created in 1593 by Pierre Richer de Belleval, a young doctor, under the orders of Henri IV, to develop health through medicinal plants. Devastated in 1622 during the siege of Montpellier by the army of Louis XIII, it was restored in 1629. The greatest botanists succeeded one another at its direction. In the 18th century, it was refurbished by F. Boissier de Sauvages. Throughout the 19th and 20th centuries, it experienced a period of rebirth and development. As a property of the State, it is currently managed by the University of Montpellier I. One of its notable specimens is the famous *Ginkgo biloba* (male tree) planted in 1795 and grafted with a female branch in 1830. All enjoyed the delicious food provided by local restaurant "le Tonneau" while listening to a local musician.

SCIENTIFIC SESSIONS - Tuesday, Wednesday, Thursday, June 25th-27th



Fig. 3: Our new President-elect Matthew Pound (Northumbria University, UK) and I welcome all fellow palynologists.

A three-day scientific program comprising many lectures and posters took place in the newly remodeled “Amphitheatre Charles Flahaut” of the former University of Montpellier’s Botanical Institute. Sessions included a) Dinoflagellate cyst research, b) Climate reconstructions and model simulations, c) Human-environmental interactions and vegetation change in and out of America, d) Vegetation dynamics beyond the Quaternary as a source of information about mountain uplift, sea-level fluctuations, plate tectonics, and e) an open session on general palynology.



Fig. 4: Dr. Martha Gibso, one of the presenters, giving a lecture in the Amphitheatre Charles Flahaut.

EARLY CAREER NETWORKING LUNCH - Tuesday, June 25th

Over 30 ECR scientists attended the luncheon funded by Hess Corporation and Vladimir Torres at the Broc Café, a local bistro located a short 10-minute walk from the Institut de Botanique, in the beautiful old town. This event was offered to all students and post-docs attending the meeting to encourage networking across various laboratories. AASP-TPS is really proud to be an organization that cares for the well being and mentoring of their graduate students. To offer additional support to ECR scientists, a contract was signed with the university agency handling the dormitories for students, and lodging was offered at the low cost of about \$100 for the entire week.

CONFERENCE DINNER - Wednesday, June 26th

The conference dinner was hosted by Pierre and Marie de Colbert at their vineyard and restaurant, the Château de Flaugergues. Listed as a Historic Monument, this château is located in the heart of the vineyards on the slopes of La

Méjanelle. Built at the late 17th century in the Montpellier countryside, Flaugergues is one of the so-called “folies,” a country-side aristocrat mansion. Around the château, the park and gardens are a place of charm and harmony. In front of the château, the “à la française” garden has been classified as a “remarkable garden.”



Fig. 5: A group of palynology students enjoying a fantastic meal at the historical Château de Flaugergues.

In addition to the dinner, conference attendees were treated to a visit of the garden and vineyard offering some details on grape selection and wine production, followed by a tour of the wine making facility, wonderful wine tasting, and a delicious country-side 3-course dinner. The weather, food, and service were perfect. We are very grateful that their team did an excellent job handling the various allergies and diet.



Fig. 6: The conference attendees carefully listened to the viticulture lesson at the Château’s vineyard. The lecture also addressed the impact of climate change on the wine production.

BUSINESS LUNCHEON AND AWARD CEREMONIES -Thursday, June 26th

Reviews of our finance, foundation and publications were provided to all attending the business luncheon. We thank Past-President Niall Paterson who is replaced by our new President-elect, Matthew Pound. The student representative also went through an exchange this year. We thank Opeyemi Taiwo for her fantastic organization of mentoring events. The incoming student rep is Shaan Heydenrych.

The food at the luncheon was delicious but it was a challenge for French cooks to adapt to our request for a gluten-free diet and we regret that a couple of our members weren't able to share this event with us because of allergies. We'll try our best to do better in Morocco (2025 meeting) and Argentina (2026 meeting).

This year, two of the society's highest awards were bestowed upon two individuals who have made fundamental contributions to the development of the discipline of palynology and both have a substantial research record in the field. They are Jim Riding (below, left) and Rob

Fensome (below, right). We thank Julia Gravendyck and Vania Correia for spearheading and handling the two nominations. These were given during the business luncheon at the Botanical Institute with both recipients present.

During the conference, Marie Thomas and her selection-committee judges reviewed all posters and talks given by students in order to select a top candidate and a runner up for the L. R. Wilson Best Student Paper Award and the Vaughn Bryant Best Poster Award. The Paper award is named after Leonard R. Wilson, University of Oklahoma, a pioneer in the field of palynology. Evaluation criteria include audibility, clarity, audience engagement, and pacing of the speaker, with emphasis placed on a clear statement of the problem, methods, and conclusions of the research.

The award recipient selected by the Award Committee this year is Piotr Meyvisch, from Ghent Uni-versity. His prize includes a certificate, \$250 cash prize, and a two-year membership in AASP-The Palynological Society. The Vaughn Bryant Best Poster Award is named after Vaughn



Fig. 7: Left to right, Vania Correia with Jim Riding and Julia Gravendyck with Rob Fensome in the Award Ceremony. In the center, a detailed picture of the awards.

Bryant (Texas A&M University), who was a world-renowned palynologist, respected teacher, long-time leader and member of The Palynological Society, widely recognized as the pioneer of forensic palynology and melissopalynology in the US. This year, the poster award went to N. D. H. van Faals, also from Ghent University.

In addition to these awards, fellowships were given to several students from a diversity of laboratories to help with travel expenses. For additional details and future applications, see this link: <https://palynology.org/student-support/student-awards/student-travel-awards/>

POST-CONFERENCE FIELD TRIP - Friday, June 28th

To wrap up this full week, a post-conference field trip was organized to visit Paleozoic and Mesozoic sections. Sites selected included three locations: Graissessac, Lac du Salagou, and Mourèze. Topics reviewed included plant macrofossils in a coal mine, Permian volcanism, dolomite, paleoenvironment, vegetation change, trace fossils, and paleoclimate. Our expert guides were Anne-Laure Decombeix (a paleobotanist from AMAP, Montpellier), and Michel Lopez (a retired professor of sedimentology from Géosciences, Montpellier).



Fig. 8: LSU co-organized the field expedition around the Graissessac coal mine to look for Carboniferous plant fossils.

At the first stop, an abandoned coal mine in Graissessac, we were treated to stunning and abundant Pennsylvanian palaeotropical wetland fossil vegetation. These included Lycopsidea, Sphenopsida, Filicopsida, Pteridospermopsida, and Cordaitales. The second stop focussed on Middle Permian succession at la Lieude-Mérifons sections where facies analysis, stratigraphic architecture and trace fossils were observed and discussed. Focus was on the Salagou Formation, a 2000m thick vertical accretion of dominant pelites deposited in a floodplain and playa-lake environments.



Fig. 9: Close-up of fossilized vegetation.

The red Permian sediments alternated with green fine sandstone and dolomite-rich layers displaying desiccation cracks, reptilian foot prints, and invertebrate impression casts. The team stopped for lunch at the Mas de Riri on Lake Salagou, to escape the heat. We were once again served delicious food. To wrap up the day, we visited picturesque Mesozoic ruiniform dolomite cirque of Mourèze, made of Triassic and Lower Jurassic series deposited in a very shallow epicontinental sea dominated by the deposition of stromatolitic carbonates. The ruiniform facies is linked to a karstification process.

As an auspicious end of field trip, Séverine and I found a beautiful specimen of *Acer monspessulanum*, commonly called Montpellier maple, a plant that was selected as the logo of the 56th conference!

Thank you to all our members and nonmembers who spent this very special week with us. We hope to see many palynological colleagues in April 2025, in Rabat, Morocco, for our next meeting.

Invertebrate and Vertebrate Paleontology News

by Lorene Smith and Mason Kirkland

Visitor from the Smithsonian Institution

Earlier this year, Dr. Gene Hunt, Curator of Ostracoda at the National Museum of Natural History, made his sixth visit to the LSU Museum of Natural Science. Over the last ten years, Dr. Hunt has travelled to LSU to examine the microfossil collections as part of his research on the sexual dimorphism of Coastal Plain ostracodes (small crustaceans sometimes referred to as seed shrimp) from the Cretaceous and Paleogene.



Fig. 2 Above: Dr. Gene Hunt examines ostracodes in the microfossil collections of the section of Fossil Protists and Invertebrates in the Howe-Russell-Kniffen Geoscience Complex.

Fig. 1 Below: Faunal assemblage slides in the stratigraphic collection: Cretaceous ostracodes collected from Arkansas and Eocene ostracodes from Mississippi. Photos and photomicrographs by Lorene Smith.



Visitors from the UL Lafayette Geology Museum

Dr. Jim Martin and Dr. Jennifer Hargrave, Curator and Associate Curator of Paleontology, of the University of Louisiana at Lafayette Geology Museum, visited LSUMNS in early May. They came to see the vertebrate paleontology collection and borrow material for a new exhibit at their museum, “Prehistoric Louisiana: A Journey through Ice Age Acadiana.”



Fig. 3: Dr. Martin (right) and Dr. Hargrave look through Pleistocene specimens in the LSUMNS vertebrate paleontology collection. Dr. Hargrave, Director of the UL Lafayette Geology Museum, holds a tibia of the ground sloth *Paramylodon harlani* from Avery Island, Louisiana.

A Pilot Expedition to Borneo

by Austin Chipps

The Esselstyn Lab has recently started a long-term collaboration with Dr. Melissa Hawkins at the Smithsonian National Museum of Natural History and Dr. Noor Haliza Hasan of the University Malaysia Sabah to better understand the geographic organization of small mammal diversity in Borneo. This new project will require multiple expeditions to Borneo, and we began with our first trip this spring.

I was in Sabah, Malaysia from March 23rd - May 9th where I joined Dr. Hawkins and Smithsonian NMNH postdoctoral fellow Dr. Arlo Hinckley to survey small mammals at Maligan Jungle Reserve in southwest Sabah. As with most expeditions to southeast Asia, we spent one week in Kota Kinabalu prior to leaving for our sampling locality to ensure we had all necessary permits, a logistics plan, and the supplies we would need while living in the forest. We were led through the (at times complex) permit process by Dr. Hasan, without whom this expedition would not have been possible.



Fig. 1: The LSU/Smithsonian/UMS/Maligan team (left to right): Junaidi, Felix, Uncle Balian, Arlo, Austin (back), Uncle Kalua, Melissa, Christopher, and Juliana.



Fig. 2: Austin and Melissa crossing a suspension bridge marking the border of the Maligan Jungle Reserve.

On April 1st, our team arrived in the village of Maligan, a small community of farmers living and working close to the forest. We would remain in Maligan, working out of a forest camp for 18 days while we collected small mammal specimens. Our surveys covered an elevational range of 600 to 1500m. This transect included habitats such as banana and palm oil plantations, bamboo stands, secondary forest, lowland dipterocarp forest, and mossy forest. We ended up collecting 156 mammal specimens from 27 different species that included rats, squirrels, shrews, tree shrews, and bats.

The importance of surveys like that of our Maligan Jungle expedition cannot be understated. Our team was the first to formally survey the mammals of this forest, and our data were shared with Sabah Wildlife and Sabah Forestry to aid in their conservation and forest management efforts. The highlight of this expedition was getting to work with

and learn from the Maligan community. Our hosts were generous with their time, knowledge, and food.

After we concluded our work in Maligan, organized specimens, and curated data back in Kota Kinabalu, our team travelled to Maliau Basin Conservation Area to scout the reserve for our next expedition scheduled for early 2025. Given the reserve's massive size and complex topography, our scouting trip was necessary for planning the logistics. As a bonus, we were able to see some of Borneo's larger mammals like giant flying squirrels, leopard cats, and pygmy elephants.



Fig. 3: A pair of Bornean pygmy elephants pointing their trunks in our direction to smell us.

This expedition to Borneo was a small but critical step toward better understanding the evolutionary and geological processes that have shaped contemporary biodiversity patterns of small mammals. We are grateful to have an excellent team of collaborators working on this project and look forward to our future trips – stay tuned!

“Core on Deck!” LSU Graduate Student Digs Deep into Mediterranean Seabed Secrets

by Bianca Scolaro

Early in her PhD program at LSU’s Department of Geology and Geophysics, Danielle Noto found herself on an extraordinary 60-day adventure. Aboard the JOIDES Resolution, a scientific drilling vessel, she would be part of the NSF-funded International Ocean Discovery Program (IODP) Expedition 401, delving into Earth’s climate history in the Mediterranean Sea.



Fig. 1: LSU Geology & Geophysics PhD student Danielle Noto joined the expedition’s science party as a sedimentologist.

“During my first meeting with my PhD advisor, Dr. Sophie Warny, we discussed potential projects,” Noto recalls. “Dr. Warny had previously worked on the Mediterranean-Atlantic Gateway Exchange during her own PhD at the University of Montpellier in France, and mentioned an upcoming expedition.”

Despite the competitive selection process, Warny encouraged Noto to apply for a spot on the expedition’s science team. “She said I might not get in, but we should try. If successful, that was my PhD project right there.”

Including only 28 scientists from around the world, the expedition was part of the Investigate the Miocene Mediterranean-Atlantic Gateway Exchange (IMMAGE) project, which aims to recover sedimentary and fossil records of the ancient flow of water between the Mediterranean and the Atlantic Ocean, exploring its impact on global climate change.

Millions of years ago, the landscape between Europe and Africa looked completely different. Two narrow seaways connected the Atlantic to the Mediterranean. However, around 6 million years ago, tectonic activity sealed off these connections, isolating the Mediterranean and disrupting global ocean currents.

This isolation not only triggered a significant global cooling period but also cut off the Mediterranean’s supply of Atlantic water. With reduced Atlantic input and high evaporation, the Mediterranean Sea became significantly saltier. This resulted in a massive salt deposit accumulating on the seabed, forming today’s giant salt layer (more than 2 km thick deposits in the deepest parts of the basin).

However, this drastic transformation wasn’t permanent. Around 5 million years ago, a dramatic reflooding event called the Zanclean Flood reshaped the Mediterranean. Atlantic waters surged back into the basin, rapidly refilling it and carving its current configuration as we know it, including the Gibraltar Strait as its single connection to the Atlantic Ocean. This reflooding again influenced the local



Fig. 2: The JOIDES Resolution is a research ship that drills into the ocean floor to collect core samples, helping scientists study climate change, geology, and Earth's history.

and global climate and fostered a new era of biodiversity in the reborn Mediterranean Sea.

To understand these dramatic changes, scientists and technicians aboard the JOIDES Resolution used advanced drilling techniques to retrieve core sediment samples from the seafloor, each 10 meters long. These cores were then analyzed by onboard specialist teams, including sedimentologists, micropaleontologists, paleomagnetists, physical properties specialists, and geochemists.

“My group was in charge of sedimentology,” explains Noto. “We were the first ones to examine the cores as they were retrieved, and we had about an hour to describe them.”



Fig. 3: Some of Danielle's tasks included describing the core's color, grain size, and fossil content, as well as searching for microscopic minerals.

The intensive schedule required 12-hour shifts with a rotating task system. Each day, Noto and her team members switched between four distinct roles. One team member meticulously described the core sample's color, grain size, and fossil content, while another person would input this data into a computer. The third team member prepared smear slides for microscopic analysis of minerals that are invisible to the naked eye. The fourth and final task of her team involved operating instruments to capture core images, measure magnetic susceptibility, and utilize an X-ray scanner. “That person would be running around the lab, getting like 20,000 steps a day,” Noto adds with a laugh.

With no prior experience describing sediment cores, Noto had to learn everything from scratch. “I really liked the data entry job, specifically when working with one of the most experienced sedimentologists on board,” she explained. “I liked sitting at the table and entering all the information they wrote down. I learned a lot.”

Despite the challenge of mastering a new sedimentology vocabulary, Noto's biggest hurdle was adjusting to the long night shifts, which ran from midnight to noon. To meet tight research deadlines, the JOIDES Resolution crew operated around the clock, collecting and analyzing samples from four drilling sites. Two complete research teams alternated shifts to ensure continuous work. Yet, Noto found a silver lining: “One really cool thing about the night shift was that we would all take a break in the middle of our shift to head out on deck and watch the sunrise together.”

Life onboard the JOIDES Resolution had its perks. Laundry magically appeared clean and folded, birthdays were always celebrated with a cake, and there was even someone willing to give a haircut in a pinch. “The crew put



Fig. 4: Danielle worked the night shift and joined the team for their daily ritual of taking a break to watch the sunrise on the deck.

in a big effort to ensure everyone felt at home,” recalled Noto. “We had chefs from the Philippines, and they went all out for Christmas and New Year’s, and even made King Cake for Mardi Gras! The food was delicious. I definitely miss it.”

Although initial observations were made on the ship, most discoveries will come through the post-processing of the samples back at each researcher’s home institution. Noto joined the expedition as a sedimentologist, but at LSU she specializes in palynology — the study of microscopic organic-walled fossils such as pollen, spores, and dinoflagellate cysts (collectively known as palynomorphs). These tiny time capsules hold the key to unlocking secrets about past vegetation and sea-surface conditions.

To decipher these secrets hidden beneath the Mediterranean seabed, Noto collected 145 mud samples and shipped them to a lab in Canada for processing into microscope slides. By examining these slides for palynomorphs, she hopes to unveil the previously unknown history of plant and algal life preserved within the sediments.

“We’re all trying to understand how the changing patterns of oceanic gateways can affect global climate,” Noto adds. “With my samples, I will identify the different pollen and algal species that will tell us what kind of trees or vegetation were growing in the area at the time, and what was the sea-surface salinity and sea-surface temperature

of the water masses. From that, we will know the type of climate and environment and how it was impacted by the opening and closing of the Mediterranean-Atlantic Gateway.”

Back at the lab, Noto began working alongside Dr. Warny to analyze palynomorphs from a specific drilling site. This site had an unclear age model, which needed refinement before a recent post-cruise editorial meeting at the International Ocean Discovery Program Building at Texas A&M in College Station. By studying the palynomorphs in the core samples, they aimed to improve the age estimates for that site and update the reports drafted during the expedition.

“It’s always amazing to be able to meet with my Expedition 401 colleagues, especially in person, since we all live across the world from each other,” says Noto about attending the post-cruise editorial meeting last month. “We have monthly Zoom meetings to discuss our scientific results, but being able to work together again at the meeting – on land – was truly incredible.”

Noto’s initial analysis of sediment cores, though focused on a limited set so far, reveals compelling clues about the history of the Mediterranean-Atlantic gateway. Her findings show a dramatic increase in the abundance of tiny marine phytoplankton called dinoflagellate cysts during a specific period, which coincides with the reflooding of the Mediterranean Sea. “I am eager to see the story that will come from the remainder of my samples.”

Looking ahead, Noto has a busy schedule. She presented her initial findings with Dr. Warny at the AASP-The Palynological Society Conference in Montpellier, France, an international conference organized by Warny herself (who is the current president of that society). The fall semester will see her return to meticulous microscope work, followed by the acquisition of new samples for even higher-resolution analysis in the spring.

Tracing Evolution: A Journey Through Colombia's Hybrid Manakin Zones

by Diego Cueva

This summer, Diego Cueva, a PhD candidate in Brumfield's lab, embarked on his third expedition to Colombia as part of his research project. Diego is fascinated by the evolution of coloration in Neotropical birds and aims to understand how hybridization and introgression influence the evolutionary process. To achieve this, he is studying two hybrid zones between species of manakins: White-bearded Manakin (*Manacus manacus*) and Golden-collared Manakin (*Manacus vitellinus*). One of these zones is located in the Pacific region of Colombia, near Guapi, Cauca, and the other spans the Caribbean region of Colombia, crossing the departments of Córdoba and Antioquia.

In his first two expeditions in 2022 and 2023, Diego traveled through all the departments of the Colombian Pacific, visiting a total of seven locations. From north to south, these were: Nuquí in Chocó; Buenaventura in Valle del Cauca; Timbiquí and Guapi in Cauca; and Santa Bárbara and San Andrés de Tumaco in Nariño. However, in the summer of 2024, Diego focused his efforts on the Caribbean hybrid zone, covering more than 3,000 km (1,864 miles) and visiting five locations: Santa Marta in Magdalena; Los Córdoba and Montería in Córdoba; Tarazá in Antioquia; and Gigante in Huila.

This journey was carried out in collaboration with the Alexander von Humboldt Institute (IAvH), represented by



Fig. 1: Left, white-bearded Manakin (*Manacus manacus abditivus*) spotted in Minca, Santa Marta, Magdalena. Right, golden-collared Manakin (*Manacus vitellinus milleri*) spotted at Hacienda Río Rayo, Tarazá, Antioquia.

Gustavo A. Bravo, an alumnus of LSUMNS, and Socorro Sierra, who accompanied Diego throughout the trip, traveling from the Sierra Nevada de Santa Marta to the highlands of the Magdalena River valley.



Fig. 2: Left to Right, Andrés Sierra (local guide), Socorro Sierra (IAvH), and Diego Cueva (LSUMNS) in Gigante, Huila, searching for the endemic subspecies of the White-bearded Manakin, *Manacus manacus flaveolus*.

The goal of this expedition was to collect high-quality genomic samples from the different subspecies of White-bearded Manakin (*Manacus manacus*) and Golden-collared Manakin (*Manacus vitellinus*), as well as from the contact zones between both species. After two intensive weeks in the field, and with the support of local guides, Diego and Socorro managed to collect genomic samples from 30 individuals across all locations, along with other birds belonging to parallel projects.



The expedition was a resounding success. The team collected genomic data not only from parental populations but also from individuals exhibiting mixed characteristics, at least in plumage color. With these results, Diego has gathered information from most subspecies and established two transects that cross both hybrid zones, the Pacific and the Caribbean. The next step in his research will be to perform DNA extractions, sequencing, and bioinformatic analyses.



Fig. 4: White-bearded Manakin (*Manacus manacus*) with yellow feathers. This bird was captured in the hybrid zone near Montería, Córdoba.

Fig. 3: Golden-collared Manakin (*Manacus vitellinus milleri*) spotted at Hacienda Río Rayo, Tarazá, Antioquia.

MNS NEWS

Fellowships, Grants, and Appointments



Jeremy Brown, PhD

Jeremy was awarded the “POSE: Phase I: Evolving RevBayes into an Open Source Ecosystem for Phylogenetics” grant to lay long-term foundations of sustainability for the RevBayes software environment. RevBayes is used by many evolutionary biologists (including many in the MNS) to reconstruct phylogenies from genetic and morphological data for their species of interest. Congratulations!



Prosanta Chakrabarty, PhD

Prosanta celebrated 15 years at LSU and was recognized for his long-standing dedication to this university with a commemorative golden pin. He was appointed the inaugural Edwin K. Hunter Chair for Communication of Science Research in the Office of Academic Affairs. The Hunter Chair aims to foster critical thinking and effective communication among scientists, technical experts, supporters, and the public. In addition, he was elected fellow of the Linnean Society of London, the world’s oldest scientific society. Congratulations!



Sophie Warny, PhD

Sophie was named a Fellow of the American Association for the Advancement of Science (AAAS), which is the largest general scientific society in the world. Becoming a fellow is an honor only given to members “whose efforts on behalf of the advancement of science or its applications are scientifically or socially distinguished.” The award ceremony was held in Washington D.C. on September 21st, 2024. Congratulations!



Fig. 1: Dr. Sophie Warny in the center, surrounded by her husband Dr. Philip Bart and other College of Science members, including the Dean Dr. Cynthia Peterson, during the AAAS award ceremony in Washington D.C.

Grants and Awards



Spenser Babb-Biernacki

Spenser Babb-Biernacki (Mammalogy - Esselstyn/Doyle Labs) won the LSU Department of Biological Sciences Mary Applewhite Superior Graduate Student Scholarship and the John Taylor Graduate Student Research Prize for Best Oral Presentation at the annual meeting of the Mycological Society of America.



Eamon Corbett

Eamon Corbett (Ornithology - Brumfield/Faircloth Labs) won the LSU Department of Biological Sciences Neal Distinguished Graduate Student Fellowship.



Diego Cueva

Diego Cueva (Ornithology - Brumfield Lab) won the LSU Department of Biological Sciences Thomas and Susan Shirley Superior Graduate Student Scholarship.



Juliana Damasceno

Juliana Damasceno (Ornithology - Thom Lab) was awarded the Virginia Mouw Award by the LSUMNS.



Heru Handika

Heru Handika (Mammalogy - Esselstyn Lab) won the LSU Department of Biological Sciences Ron and Mary Neal Distinguished Graduate Student Fellowship and the Ernst Mayr Award for his wonderful virtual talk in the graduate student symposium at the joint meeting of the Society of Systematic Biologists (SSB), Society for the Study of Evolution, and American Society of Naturalists in Montréal, Quebec.



Andre Moncrieff, PhD

Dr. Andre Moncrieff won the 2024 LSU College of Science Outstanding Dissertation Award and received the American Ornithological Society Kessel Fellowship (\$15K) to fund a research project entitled “How do river rearrangements impact Amazonian biodiversity?”



Darwin Morales-Martínez

Darwin Morales-Martínez (Mammalogy - Esselstyn Lab) received the Mohamed bin Zayed Species Conservation Fund (\$11K) to go in an expedition across the Eastern Cordillera of Colombia as part of the project “Assessing the Conservation Status of the Eastern Cordillera Small-footed Shrew (Soricidae: *Cryptotis brachyonyx*), the rarest shrew of South America.”



Sheila Rodríguez Machado

Sheila Rodríguez Machado (Ichthyology - Chakrabarty Lab) won the LSU Department of Biological Sciences Yoder Graduate Student Scholarship and the John G. Lundberg and Lucinda McDade Dissertation Award in Comparative and Phylogenetic Ichthyology (\$15K) at this year’s Joint Meeting of Ichthyologists and Herpetologists (JMIH).



David Vander Pluym

David Vander Pluym (Ornithology - Mason Lab) won the LSU Department of Biological Sciences T. Vinton Holmes Award and the Louisiana Ornithological Society Cardiff and Dittmann Scholarship for LSU students.

New Grad Students



Juliana Damasceno

Juliana is a Brazilian Biologist with a master’s degree in Zoology. Her previous studies focused on biogeography and speciation of Neotropical birds. In Dr. Thom’s Lab, she investigates the evolutionary underpinnings of the army-ant-following behavior in Neotropical birds, focusing on the genus *Gymnopithys*.



Angela Haggard

Angela earned a B.Sc. in Wildlife and Fisheries Sciences from the Pennsylvania State University and a M.Sc. in Ecology and Evolutionary Biology from Texas A&M University, where she studied *Poeciliopsis* fishes. Angela’s interest in fishes stems from professional and hobby aquarium husbandry. She was previously a professional aquarist in the public aquarium industry, working primarily with elasmobranchs. Her research interests are the systematics of Southeast Asian freshwater catfishes. Angela joined Dr. Chakrabarty’s Lab to study peat-swamp specialist species among the family Bagridae.



Amanda Harvey

Amanda graduated from Texas A&M University with a B.Sc. in Ecology and Conservation Biology. After working within Texas A&M’s Biodiversity Research Teaching Collections, Amanda obtained an NSF post-baccalaureate fellowship to work in Dr. Mason’s Lab, through the LAGNiAppE program. Extending her time in Dr. Mason’s Lab, Amanda now researches the phylogeography of Gulf Coast birds as a PhD student.



Gustavo de Melo Martins

Gustavo is a Brazilian biologist with a Master’s degree in Ecology. He has an extensive background in natural history studies, first conducting research on Neotropical bird species and now applying classical diversity metrics to understand anthropogenic impacts on Amazonian birds. He joined Dr. Thom’s Lab to better understand evolutionary processes such as natural selection associated with adaptations to distinctive habitats.



Luca Micheli

Luca is an ornithologist interested in neotropical birds. His research experience involved the systematics, taxonomy, biogeography, evolutionary biology, and population genomics of South American birds. In Dr. Thom’s Lab, he aims to study the speciation process of neotropical birds with novel genomic techniques.



Zhiyuan ‘Jerry’ Su

Jerry graduated from the University of Connecticut with a B.Sc. in Natural Resources and Conservation. Since his freshman year, Jerry actively sought bird research opportunities to understand the evolution of birds. In Dr. Brumfield’s and Dr. Faircloth’s Labs, Jerry will investigate hybridization among *Plegadis* ibises.



Sara Velasquez

Sara graduated from Universidad EAFIT in Medellín (Colombia) with a B.Sc. in Biology. After working in the EAFIT Biodiversity, Evolution, and Conservation research group, Sara obtained her M.Sc. in Biosciences at the same institution. In 2023, Sara was awarded a Fulbright scholarship to pursue her PhD at LSU. She joined Dr. Brumfield’s Lab to focus her research in different aspects of the ecology and evolution of Manakins.

New LAGNIAppE Scholars



Ellie Bollich

Ellie graduated from Colorado State University with a B.Sc. in Zoology. While at CSU, Ellie worked in the Biology Teaching Collection and C. P. Gillette Museum of Arthropod Diversity. Currently, Ellie is a post-bacc research fellow in the NSF LAGNIAppE program, working in Dr. Jake Esselstyn’s lab researching the diversity of old-world shrews.



Melissa Salazar

Melissa obtained a B.Sc. in Biology with a minor in Public Health from the University of Texas at Arlington. A summer internship with the DOE sparked her interest in studying how biological and ecological systems can serve as indicators for the health of people and the planet. Melissa earned an NSF LAGNIAppE fellowship to work in Dr. Mason’s Lab conducting a comparative genome analysis of two sister species of high Andean birds.

New Staff

Antonia Androski, PhD



Toni is the new mammalogy collections manager. She is a mammalogist and evolutionary biologist who earned her PhD from the University of New Mexico (UNM). As a graduate student at UNM's Museum of Southwestern Biology, she co-led multiple trips to Southeast Alaska and Canada in collaboration with governmental agencies and the University of Kansas. She has also spent time in the field in New Mexico and Panama, and worked on projects to bridge the gap between natural history collections and public health research. Her doctoral research focused on the phylogeography and systematics of shrews in western North America and the conservation of endemic mammals in Southeast Alaska.

Irene Martí Gil, PhD



Irene is the new educational outreach coordinator and anthropology collections manager. She is a Spanish anthropologist whose research is focused on the intersection of archaeology, museum studies, and linguistics. She obtained a B.A. in Archaeology (with a minor in Classic and Medieval Archaeologies) from Universitat Autònoma de Barcelona in partnership with Université Paris-Sorbonne IV in 2015, and a degree in Liberal Arts from Escuela de Liderazgo Universitario-Universidad Francisco de Vitoria. Irene earned her M.A. in Cultural Heritage Studies from University College London in 2017, and her PhD in Anthropology (with a minor in Linguistics) from LSU in 2023, which Fulbright sponsored. From 2020 to 2022, she worked at the LSUMNS as Dr. Rebecca Saunders' curatorial assistant.

Sebastian Pérez-Peña



Sebastian is the new ornithology collections manager. He is a Colombian biologist with a strong background in ornithology and ecological research. He completed his undergraduate studies in Biological Sciences at the Universidad Pedagógica y Tecnológica de Colombia. His research focused on various aspects of bird ecology, including reproductive biology and the spatial segregation of nesting niches. He also has a special interest in taxonomy and bioacoustics of tropical birds, as well as extensive experience in biological collections and scientific research expeditions. Sebastian worked with several research institutions before, including the Instituto de Investigación de Recursos Biológicos Alexander von Humboldt and the National Audubon Society.

Eryn Woernley



Eryn is the new genetic resources collections manager. She is originally from Ithaca, NY, where she developed a strong interest in birds through the vibrant local birding community. She received her B.Sc. at Cornell University in Environment and Sustainability, with a strong focus in ornithology. Eryn spent over four years working at the Cornell University Museum of Vertebrates (CUMV), gaining valuable experience with museum collections. She has also collaborated with national and international institutions, including the Lee Kong Chian Natural History Museum and the Burke Museum, through partnerships with CUMV. Eryn has a strong interest in all aspects of avian ecology, and her research has specifically centered around post-fledgling ecology.

Jazzing Up The Exhibit Area

POET'S CORNER

The Poet's Corner (located in the Lowery Hall of Louisiana Birds) is a space dedicated to nature-inspired literature as part of a larger, arts-oriented project here at the museum. The goals are (1) to reintroduce interdisciplinary approaches to the understanding, valorization, and promotion of the natural sciences; (2) educate the public about the wonders of the natural world; and (3) encourage periodical visits to the Museum as we update the Corner twice a year.

The inaugural LSUMNS Poet is Dr. Brandon Kilbourne with his poem "Our Guilled Forebear," a beautiful ode dedicated to the Tiktaalik. Dr. Brandon Kilbourne is a Louisiana born and raised poet and evolutionary biologist who serves as a research biologist and administrator at the Museum of Natural History in Berlin, Germany. He studied biological engineering at Louisiana State University and evolutionary biology at the University of Chicago, where he earned his PhD. Dr. Kilbourne participated in the 2024 LSU Vet Med Artist-in-Residency Program in April 2024.



Fig. 1: Poet's Corner when it was first installed.



LED PROJECT

The LSU Museum of Natural Science exhibit area went through significant renovations during the summer break. In our attempt to advance toward a cleaner, more eco-friendly, and environmentally responsible institution, the fluorescent lights that used to illuminate our 10 dioramas have been replaced by LEDs! LED lights are not only long-lasting and offer better light quality to appreciate all the exhibit details, but they are safer, cost-efficient, energy-efficient, and fully recyclable. This step forward would have not been possible without the priceless collaboration of the LSU Facility Services, specifically the Division of Carpentry and Electricity, who dedicated three full weeks to this project. Thank you!

Fig. 2 Left: Picture of Mr. Darius smiling after replacing all the bulbs of the Waterfowl diorama. He is an electrician apprentice working with Mr. Phillip and he did an excellent job!

Figs. 3-7 Right: Before-and-after pictures of the Polar Bear (3-4) and Coastal Island dioramas (5-6), and a picture of the Waterfowl exhibit (7) taken during the process of fixture replacement. The left corner shows how the exhibit was originally lit, whereas the right corner fixtures have been replaced by LEDs.





Figs. 8-9: The Louisiana Prairie diorama was originally intended to portray a sunrise scene by the prairie. To achieve the dawn effect, LED bulbs were fit into a colored sleeve. The difference between the before (fig. 8) and after (fig. 9) is remarkable.

ANTARCTICA EXHIBIT FIX-UP

LSU Facility Services brought together an amazing team of carpenters (Mr. Matt and Mr. Jeff) and electricians (Mr. Keith and Mr. Phillip) to fix the Antarctica sections that sunk down over time, and to replace the light fixture that lit up the information panels. Now it looks brand new!



Fig. 10 Left: Mr. Matt removing the protection sheet over the Antarctica exhibit to fix the panel. Fig. 11 Right: Two Antarctica sections with and without LEDs. In the left section, the lighting has been repaired and now the images are brighter and sharper, particularly when compared to section next to it, in its original state.

Foster Hall Renovations

NEW LSUMNS SIGNAGE

In June, the Museum got brand new signage! We worked with a Louisiana-based business to transform our logo into building signs. These ACM signs were installed in the main hall and above two of the entryways to the basement. We also got an etched vinyl sign in the main door. This is part of the beautification and visibilization process that the Museum has been going through in the past few months.



Fig. 12: Collage featuring the new LSUMNS signs.

BRAILLE SIGNAGE IN THE BASEMENT

On August 12th, Ms. Walta Ghebreyessus and her team from the LSU Interior Design Division installed several signs by the doors in the renovated east portion of the Foster Hall basement, in the context of the campus-wide Braille signage project. The LSU Museum of Natural Science is actively working on recognizing the unique needs of our community and is committed to grant accessibility beyond legal accommodations for students, staff, and faculty with disabilities. Stay tuned for upcoming accessibility projects!



Figs. 13-15: Snapshots capturing the installation of Braille signage in the basement, both indoors and outdoors.

2024 LSUMNS PUBLICATIONS

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Ichthyology

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Ornithology

Capurucho, J.M.G., Musher L.J., Lees A., Rego M.A., Del-Rio G., Aleixo A., Luzuriaga-Aveiga V.E., Ferreira M., Ribas C.C., & **Thom G.** (2024). Amazonian Avian Biogeography: Broad-scale Patterns, microevolutionary Processes, and Habitat-Specific Models Revealed by Multidisciplinary Approaches. *Ornithology* 141 (1): ukado51.

Corbett, E.C., **Brumfield, R.T.**, & **Faircloth, B.C.** (2024). The mechanistic, genetic and evolutionary causes of bird eye colour variation. *Ibis*, 166: 560–589. <https://doi.org/10.1111/ibi.13276>

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OUTREACH UPDATES

KIDS' DAY AT THE MUSEUM

On February 24th, the LSU Museum of Natural Science and the College of Science co-hosted the 8th Kids' Day at the Museum. The event gathered 33 kids in grades 4th through 6th, who spent the day exploring the Museum collections and learning about the world of science and what it means to be a scientist. Dan Sinopoli (Chakrabarty Lab) and David Vander Pluym (Mason Lab) gave them behind-the-scenes tours of the fish/herps and birds, respectively. Spenser Babb-Biernacki (Esselstyn Lab) led the Build a Specimen activity. Kids' Day at the Museum also included a "Coaching Your Child for STEM," which is a session for parents to help them encourage their child's interests in math and science.



Fig. 1: David Vander Pluym showing the bird collection. Picture by Camellia Clifford and Heather Perlis.



Figs. 2-3: CCK's four speakers and Irene showing archaeological artifacts to the guests.

LSU CCK EVENT

On May 2nd, the LSU Museum of Natural Science hosted the Center for Collaborative Knowledge (CCK) special event "Hidden Collections," led by Dr. Suzanne Marchand.

Dr. Nick Mason presented the ornithological collection. He talked about the history of our collection, the variety of specimens it contains, the significance it has for the researching community at the national and international levels, and the standards of ethical praxis that LSU Museum of Natural Science enforces for the collection of specimens. Dr. Irene Martí Gil introduced our archaeological and ethnographic collections. She gave an overview of the diverse assembly of artifacts housed in the Anthropology Lab, from prehistoric lithics and pottery from the Southeast to the vast arrangement of Cashinahua feathered apparel from the Amazonian region, the varied collection of baskets and hand-woven artifacts from Louisiana and South Carolina, and the wooden mask collection from Liberia, among others. She also emphasized the strict enforcement of NAGPRA regulations and ethical standards of practice for the management of Native American collections. The event was concluded with an ovation to Dr. Prosanta Chakrabarty for his four successful years as the CCK Director.

TEACH FOR AMERICA STEM DAY

On May 8th, LSU Museum of Natural Science participated in the STEM Demonstration Day at Lowery Elementary School (Donadsonville, LA). Hosted by Teach for America, and in partnership with ten local businesses, this event served to expose over 300 third-, fourth-, and fifth-graders to different STEM careers and engage in 900 STEM-related demonstrations. In representation of the LSU MNS, Dr. Prosanta Chakrabarty and Dr. Irene Martí Gil introduced the opportunities that scientific research has to offer by showcasing two of the foundational disciplines of the Museum: Ichthyology and Anthropology. The students enjoyed learning about Dr. Chakrabarty's travels around the world in his effort to discover new species and were very inquisitive about the scientific process involved in archaeological excavations. They successfully achieved the ultimate goal of this event: to make STEM learning more accessible to students, encourage meaningful connections with LSU, and foster positive change within the broader community.



Fig. 4: Prosanta and Irene at the Lowery Elementary STEM Demonstration Day.

LSU FUTURE SCHOLARS SUMMER CAMP

On June 12th, eighty students from seventh to twelfth grades participating in the LSU Future Scholars (LSUFS) visited the LSU Museum of Natural Science. This event was part of the required summer camp that Future Scholars complete before graduating from the Program, which aims to provide a transformative experience for talented young minds from economically disadvantaged, historically underserved backgrounds. LSUFS also provides support and resources to finish high school and attend and graduate from LSU. The promotion of education is one of the LSUMNS core values, so we were excited to collaborate on this project. Austin Chipps (Esselstyn Lab) taught the LSUFS students about Louisiana mammals, from shrews to dolphins, while George Lambert (Austin Lab) showed them several herp specimens, including a saltwater crocodile skull, a snapping turtle shell, and some snakes! Dr. Irene Martí Gil took the students for a walk around the LSU Campus Mounds to educate them about the Louisiana past and present cultural heritage. She emphasized the significance of our Mounds to understand Native American history in the U.S.



Fig. 5: Left to right, Austin Chipps and George Lambert showing mammal and herp specimens to LSUFS students in the exhibit area. Picture by Camellia Clifford.

DINO DAY

On June 22nd, Mason Kirkland, our paleontology collection manager, represented the LSU Museum of Natural Science in the 2024 Dino Day. This event, organized by the Louisiana Art and Science Museum in collaboration with other institutions, gathered 779 patrons of all ages who enjoyed a day full of geology- and paleontology-themed activities, games, workshops, and shows.



Fig. 6: Mason Kirkland showing some paleontological specimens and stamping the visitors' "activities passport." Picture by LASM.

LSUMNS OUTREACH ON CAMPUS

The LSU Welcome Week (August 19th-23rd) was the perfect opportunity for the Museum to promote our research to newcoming undergraduates and graduate students across disciplines. We also extended an invitation to visit our exhibit area and interact with our current students, staff, and curators. We participated in the Graduate Student Orientation Day (September 21st), the LSU Discover Undergraduate Research Fair (September 22nd), where Amanda Harvey and Sam Rutledge had the opportunity to share their research experience in Dr. Mason's Lab with first-year college students, the Anthropology and Geography Fall Convocation event (August 23rd), the College of Science Block Party (September 3rd), the CC&E's LSU Resource Fair for Academic Success (September 4th), and the LSU Fall Fest (September 20th).



Fig. 7-10: LSUMNS ambassadors at the Graduate Student Orientation Day (fig. 7), LSU Discover fair (fig. 8), CoS Block Party (fig. 9), and CC&E fair (fig. 10), promoting the Museum's mission and research opportunities.

LSU STAFF MUSEUM TOURS

On August 27th, collections managers from all LSU museums got together for the first time! Our LSUMNS collections managers, Dave Boyd (Fish and Herps), Sebastian Pérez-Peña (Birds), Eryn Woernley (Genetic Resources), Toni Androski (Mammals), Mason Kirkland (Vertebrate Paleontology), Lorene Smith (Fossil Protists and Invertebrates), and Irene Martí Gil (Anthropology), along with the Louisiana State Arthropod Museum curator Victoria Bayless, joined Herbaria collections manager Jennifer Kluse and the rest of the Shirley C. Tucker Herbarium staff members for a tour around their state-of-the-art facilities. They showed us some of the most exotic specimens they have, from edible lichens to flora now extinct in the wild, carnivorous plants, and long-misidentified new species. The tour was followed by a lunch where we shared our experience as collection managers and laid the foundations for future partnerships. We are looking forward to hosting the next Museum Staff “Tour and Lunch” event and working with our fellow natural scientists!



Figs. 11-15: Collage of pictures taken during the event. Jennie received us in the luminous herbarium (fig. 11), where she had a spread of some of their most remarkable specimens, including a broad collection of lichens (fig. 13) that we got to examine closely with magnifying glasses (fig. 15). We toured the beautiful space (fig. 12) and peaked in their cabinets full of botanic treasures (fig. 14). Special thanks to Jennie for being such a great host!

BRAS TOUR

The Baton Rouge Audubon Society (BRAS) recently conducted a field trip to the LSUMNS. The primary focus of the visit was to explore the museum's extensive bird collections. Upon arrival, the group was warmly welcomed by Dr. Nick Mason (Ornithology Curator), Diego Ocampo (Postdoc at Mason Lab), and David Vander Pluym (PhD candidate at Mason Lab). They led a guided tour through the various exhibits, providing detailed explanations about the diverse bird species on display. One of the highlights of the tour was the opportunity to examine rare, endangered, and extinct bird specimens from Louisiana and abroad. Overall, the Audubon Society's visit to the Museum of Natural Science was a great success.

Fig. 16: Diego Ocampo showing some specimens to the BRAS members. Picture by Carson Lambert.



FULL-DAY TOUR FOR THE BIOLOGY DEPARTMENT STUDENTS, FACULTY, AND STAFF

On August 28th, we hosted a full-day tour for the LSU Department of Biological Science. Thanks to our volunteers, Spenser Babb-Biernacki (Esselstyn Lab), Dan Sinopoli (Chakrabarty Lab), David Vander Pluym (Mason Lab), George Lambert (Austin Lab), and David Boyd, we were able to offer an in-depth behind-the-scenes tour of the mammal, fish, herps, and bird collections. In the morning, we welcomed a group of undergraduate and graduate students that were very engaged and interested in learning as much as possible from our collections. In the afternoon, we hosted two groups of faculty and staff! They brought up many interesting questions, fun facts, and fieldwork anecdotes. Ms. Danielle Taylor, Academic Coordinator at the Biology Department, was key in the preparation of the tour and she did an excellent job promoting the event in the Department. We are looking forward to strengthening our interdepartmental relationships with all the College of Science departments!



Figs. 17-19: Photographic recap of the Biology Department tour. Left to right, David shows the bird collection to a group of students (fig. 17), some professors check out our wet collection (fig. 18), and Spenser shows some mammal specimens (fig. 19).

LSU MUSEUM STUDIES TOUR

On September 4th, we received the visit of 40 LSU students taking the Museum Studies Course led by Ms. Courtney Taylor, LSU College of Art + Design Director of Galleries. The goal was to teach them about the museological and curatorial practices that we use in the Museum to curate, manage, and preserve our valuable collections. First, in the public exhibition space, Dr. Irene Martí Gil presented the LSUMNS exhibit area and history of the Museum, our educational mission and program, and the career opportunities related to museology and museum education. Behind-the-scenes, PhD candidate Dan Sinopoli (Chakrabarty Lab) and Dr. Nick Mason toured the students around the fish and bird collections, respectively, and talked about relevant topics such as museum collections storage, organization, documentation trail, and the handling and use of loans.



Fig. 20: Courtney discussing the educational value of the Big Splash exhibit.

KICKOFF LSU

The LSU Museum of Natural Science collaborated with the LSU Office of Admissions to offer the LSUMNS as one of the landmarks featured in the campus-wide university tour called Kickoff LSU. Kickoff LSU is an open house event for all high school seniors and juniors, as well as their parents and guardians, and a great opportunity to explore our beautiful campus and state-of-the-art facilities, learn about our amazing range of academic choices, and meet world-renowned professors. The Museum opened its doors for the registered guests (a total of 3,000 participants) from 12:00-3:00 PM on August 2, October 5, October 14, November 16, and November 25.



Fig. 21: Kickoff LSU flyer in front of Mike at the LSU Museum of Natural Science.

2024-2025 SPECIAL SATURDAYS

Our most popular educational program is back! Special Saturdays is a free STEM program that introduces five to ten-year-old children to the amazing world of natural science. One Saturday a month we focus on a specific topic and invite presenters from within the LSU community to give 20-minute talks on their specialty. These talks are accompanied by fun hands-on activities.

This year, our program is themed around our collections. The objective is to approach our core disciplines (mammalogy, ornithology, ichthyology, herpetology, paleontology, archaeology/anthropology, genetic resources, palynology, and science education) and the research conducted at the Museum. You can see our schedule on page 44 of this Newsletter or on our website, at <https://www.lsu.edu/mns/education/special-saturdays.php>, where you can also submit your registration.

FALL 2024 MUSEUM SEMINAR SERIES

Our PhD candidate Dan Sinopoli (Chakrabarty Lab) is our new coordinator of the Museum Seminar Series for the Fall Semester 2024. The Museum Seminar Series is a weekly research talk at the LSU Museum of Natural Science given by invited speakers and LSU personnel that revolves around topics of natural history, ecology, or evolutionary biology. Seminars are open to the public and take place on Fridays at 3:30 PM in the museum exhibits area, unless otherwise noted.

You can find the outstanding program that Dan put together on page 45 of this Newsletter or on our website, at <https://www.lsu.edu/mns/education/museumseminar.php>.



Special Saturday Program 2024-2025: Discover our Collections

This academic year, we want to celebrate the LSU Museum of Natural Science by dedicating our Special Saturday Program to our research and educational mission and our scientific collections. From September to May, we will host FREE STEM lectures and activities (for children ages 5-10) focused on our nine fields of specialization. This program will run from 10:00 a.m.-12:00 p.m on posted Saturdays.

FALL 2024

Ichthyology (fishes)

September 14, 2024

Special Guest: Sheila Rodriguez-Machado

Palynology (pollen)

October 19, 2024

Special Guests: Danielle Noto and Sarah Bancroft

Genetic resources (DNA)

November 16, 2024

Special Guest: Andre Moncrieff, PhD

Herpetology (herps)

December 7, 2024

Special Guest: George Lambert

SPRING 2025

Ornithology (birds)

January 25, 2025

Special Guest: David Vander Pluym

Paleontology (fossils)

February 8, 2025

Special Guest: Gavin Blanchard

Archaeology (human culture)

March 22, 2025

Special Guest: Alex Belanger

Mammalogy (mammals)

April 26th, 2025

Special Guest: Austin Chipps

Science education

May 17, 2025

Special Guest: Irene Marti Gil, PhD

For more information visit us at

lsu.edu/mns or contact Irene Marti Gil at imart23@

lsu.edu or (225) 578-2855

Fall 2024 Museum Seminar Schedule

Seminars begin at **3:30 PM** Central Time in the main gallery of Foster Hall, unless otherwise noted.

September 6	Austin Chipps , LSU Museum of Natural Science <i>Travelogue: Malaysia</i>
September 13	Dr. Iroro Tanshi , Department of Biology, University of Washington <i>Aftrotropical Bat Assembly Structure Along Elevational Gradients and Islands in the Gulf of Guinea Forests</i>
September 20	Dr. Samuel Jones , Georgia Institute of Technology <i>Elevational ranges and elevational changes; mechanisms and processes in Mesoamerican cloud forests</i>
September 27	Dr. Morgan Kelly Department of Biological Sciences, LSU <i>Centimeters to continents: how thermal adaptations are distributed across spatial scales</i>
October 4	Dr. Audrey Lin , American Museum of Natural History <i>The history of Coast Salish woolly dogs</i>
October 11	Dr. Christopher Randle , Sam Houston University <i>Niche modeling of invasives species: a headache worth having?</i>
October 18	No Seminar – Fall Break
October 25	Dr. Yue Liu , Aquatic Germoplasm and Genetic Resources Center, LSU <i>Opportunities and Urgent Needs in Developing a National Framework for Protecting Genetic Resources of Aquatic Species</i>
November 1	No Seminar – Yellow Rails and Rice
November 8	No Seminar – Museum Retreat
November 15	Dr. Brian Sidlauskas , Curator, Royal D. Suttkus Fish Collection, Tulane University <i>TBD</i>
November 22	Zachary Randall , Digital Imaging Division Collection Manager, Florida Museum Imaging Lab <i>Access for All: Capturing Biodiversity Collections in 3D with Photogrammetry</i>
November 29	No Seminar – Thanksgiving Break
December 6	Dr. Nina Therkildsen , Cornell University <i>TBD</i>



For further information, contact Daniel Sinopoli: dsinop1@lsu.edu

MUSEUM RECORDS

Demographics and visitor highlights

This year, the LSU Museum of Natural science welcomed over 1600 visitors from multiple locations across the U.S. and abroad.

According to the data collected from September 2023 to September 2024, which was not systematically gathered but volunteered by our visitors, over 50% of our guests were Louisiana residents. In addition to self-guided visitors, we also hosted many school groups, including the Belaire Magnet High School, Westdale Middle Magnet School, Arlington Preparatory Academy, Glen Oaks Magnet High School, Ascension Catholic School, St. Jean Vianney Catholic School, and Gordon Caine Center for STEM Literacy, among others.

In addition to local guests, we had visitors coming from Alabama, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Idaho, Iowa, Maryland, Massachusetts, Mississippi, North Carolina, New York, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Utah,

Virginia, Washington, West Virginia, Wisconsin, and the territory of Puerto Rico.

From abroad, guests representing Bolivia, Canada, Guatemala, Philippines, Spain, and Taiwan also visited the LSU Museum of Natural Science in the 2023-2024 academic year.

Our visitors varied widely in age. Our youngest and brightest visitor was Caspian (2 years old). Over the summer break, he rocked a collection of Hulk t-shirts to visit the Museum on a weekly basis. He loves all animals, but his favorite one is the zebra by the main door. Our most senior (but youthful at heart!) visitor was Dolores (87 years young). She visited us along with other residents of her senior community, and her favorite animal is the pelican in the Coastal Island diorama.

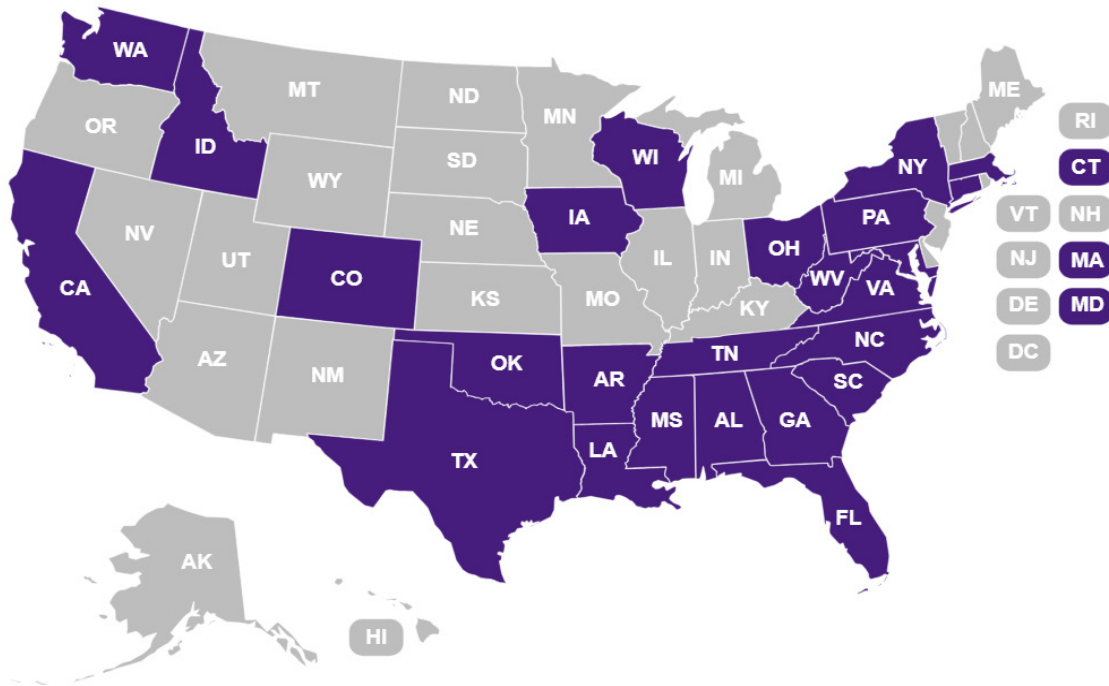


Fig. 1: This U.S. map highlights the states from which the LSUMNS received visitors from September 2023 to September 2024.

Visiting Researchers

In the past year, we had over a dozen visiting researchers coming from institutions across North America, including Universidad Nacional Autónoma de México, University of Chicago and Field Museum of Natural History, the Academy of Natural Sciences of Drexel University, University of Louisiana Monroe, McNeese State University, National Museum of Natural History, University of Louisiana at Lafayette, UL Geology Museum, and our home university – Louisiana State University.

These researchers chose the LSU Museum of Natural Science to conduct their investigation because of the quality and quantity of our collections. Dr. Danny Rhoda is an evolutionary biologist at the University of Chicago and Field Museum of Natural History who visited the LSUMNS in March. He studies the evolution of snake skulls in order to explain differences in phenotypic and functional diversity between groups. He emphasized:

“Few places on earth have as many high-quality dry snake skeletons as the LSU Museum of Natural Science, their collection has over 2600 skeletons whereas most natural history collections have under 200. During my two-week stay at the LSUMNS, I was able to collect a near-comprehensive dataset of jaw morphology of Natricine snakes (garter snakes, water snakes, and their relatives), crucial data for my dissertation research. With the help of this tremendous research collection, I’ll be able to understand how evolvable the snake skull is, and how this has influenced the diversification of snakes.”

Similarly, Dr. Ross Couvillon, Assistant Professor at the University of Louisiana Monroe, expressed his admiration for the scope of the herpetology collection. In

May and late August, Dr. Couvillon and his student Fisher Adams gathered data for his pilot study of copperhead (*Agkistrodon contortrix*) pattern symmetry. His goal is to determine whether asymmetrical color patterns increase the fitness of cryptic reptiles. Dr. Couvillon stated that he “knew LSU would be a great place to carry out this project.”

Jon Merwin (Drexel University PhD candidate), Matthew Soesanto (Drexel University Undergraduate), and Dr. Jason Weckstein (LSU Alumnus and Associate Curator of Ornithology, Academy of Natural Science of Drexel University and Associate Professor at Drexel University) visited the LSUMNS in March to measure and image *Ramphastos* toucan specimens for Merwin’s dissertation and as part of ongoing work on the genus in Weckstein’s lab. Merwin studies plumage coloration and the evolution of mimicry in birds. A large part of his research involves taking photographs of museum specimens and measuring the color of birds from these photographs. His dissertation focuses on toucans to understand how their coloration varies across space and evolutionary time. About the bird collection, Dr. Weckstein said:

“[LSUMNS has] great representations of toucan diversity, especially within populations, with critically important vouchered specimens that will [allow] them to connect genotype and phenotype.”

In fact, some of the specimens in our collection were collected by Dr. Weckstein himself, along with his collaborator Alexandre Aleixo when they were PhD students at LSU. This is one of many examples of specimens serving multiple purposes over time.

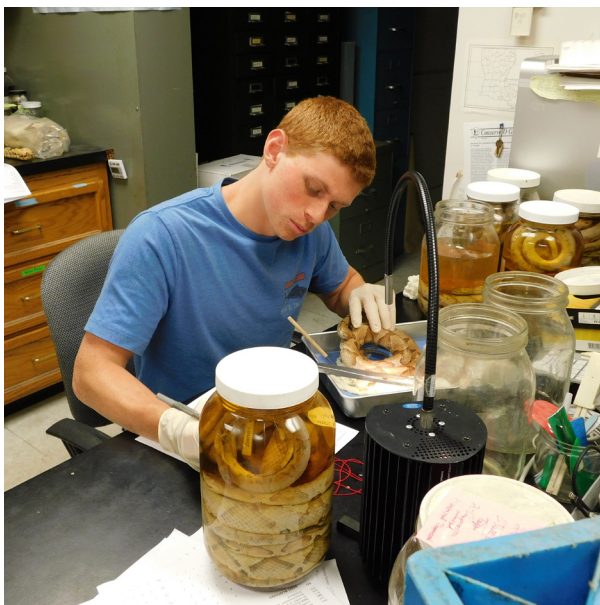
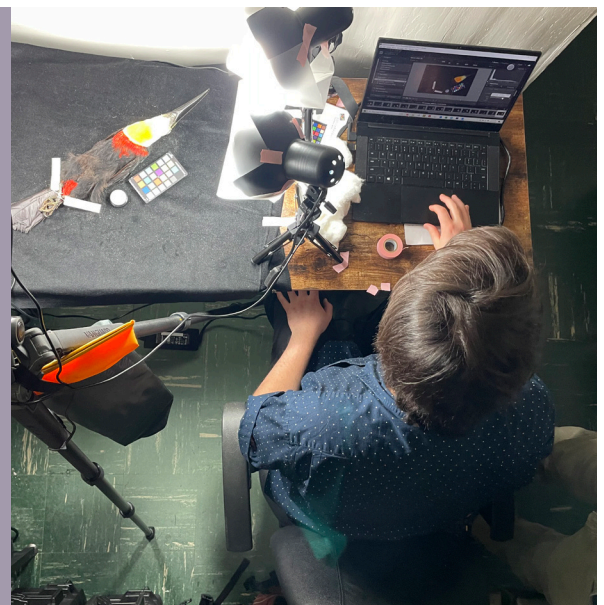


Fig. 2 Left: ULM undergrad student Fisher Adams gathering data at the LSUMNS Herps Lab.

Fig. 3 Right: Drexel University PhD candidate Jon Merwin imaging a *Ramphastos* specimen in the Bird Lab.



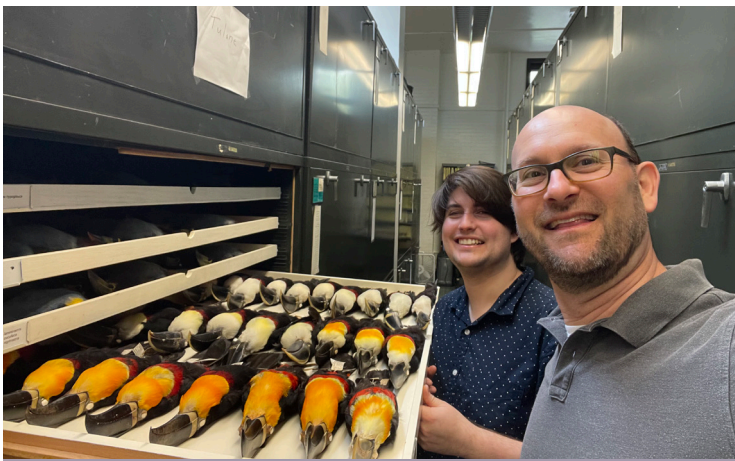


Fig. 3: Dr. Weckstein and Merwin with some *Ramphastos vitellinus* from the LSUMNS collection.

Dr. Bob Tague, a faculty member in the Department of Geography and Anthropology at LSU, said that his research is enhanced by the opportunity to study mammal skeletons in LSU's Museum of Natural Science frequently. To understand human anatomy in terms of functionality and evolutionary biology of our skeleton, he has conducted research of the skeletal anatomy of more than 40 animal species housed at more than 50 departments and institutions in the United States, Canada, and Puerto Rico.

"Based on these many visits, I can attest that the breadth and depth of the mammal collections of MNS secure the Museum's place among the premier institutions in North America."

Research at the LSUMNS has contributed to 7 of Dr. Tague's publications in 5 academic journals. Dr. Tague added that, in addition to our collections, a significant asset that makes the LSU Museum of Natural Science an unmatched hub of cutting-edge scientific research is its members. He said:

"The facilities and collections of MNS are fine, but the renown of MNS is due to its outstanding staff, from the office (thanks, Tammie Jackson), to the collections manager of Mammals (thanks, Steven Cardiff [now retired]), and to the curators of Mammals (thanks, Jacob Esselstyn and Mark Hafner [emeritus]); also, I extend thanks to Rebecca Saunders and Irene Martí Gil (curator [ret.] and collections manager of Anthropology, respectively). All of the staff make my visit, and undoubtedly the visits of other researchers, pleasant and productive. Perhaps a testament to the widespread and high regard of Mammalogy of MNS is that near the end of my visit to almost every institution away from LSU, I am asked by their curator and collections manager to, "Please give my best regards to my good friends, Jake and Mark." LSU is a premier academic institution due, in large part, to the research by MNS' curators and graduate students, and to the opportunities for other scholars to visit LSU and conduct their research with MNS' collections."

Dr. Rhoda, the snake biologist from University of Chicago, admitted that:

"The best part of my trip, however, was going 'herping' with curators, graduate students, and collections managers, where we saw numerous alligators, turtles, shrews and even caught some ribbon snakes. Herping with LSUMNS community was a memory I'll never forget and truly enhanced the wonder I have for the natural world. I hope to have an excuse to visit these collections again, but until then I will be dreaming about Jambalaya."



Fig. 4: A Ribbon snake Dr. Rhoda caught while herping with the LSUMNS members.

About his experience at the LSUMNS, Dr. Couvillon, from ULM, said:

"My experience working in the museum was great. The faculty and staff were friendly and accommodating, and I could always count on Dave for a refill of coffee in the morning. It was interesting chatting with the graduate students and hearing about the research they are undertaking. I am looking forward to future visits to the museum to work on this and new projects."

Likewise, Merwin, Soesanto, and Dr. Weckstein, said they had "a fantastic trip to LSUMNS and photographed hundreds of toucans and collaborated with LSU faculty and students." They also appreciated the opportunity to attend the weekly Friday afternoon seminar and the happy hour afterwards.

"[It] was a wonderful time to network and catch up with LSUMNS colleagues. LSUMNS is such an incredible hub of bird research where visitors can absorb so much knowledge and energy just by visiting."

They also managed to squeeze in "a morning of birding and even got to see some gators and pass on their thanks for the great museum hospitality."



Fig. 5: Merwin and Soesanto birding in the Atchafalaya.

Dr. Giovani Hernández Canchola and Isabela Vivas Toro, from the Universidad Nacional Autónoma de México, shared the same sentiment. He completed his Postdoctoral program in the Esselstyn Lab in 2021 and he stayed at the LSUMNS from July until September this year. His research focuses on evolutionary patterns on diversity and gene flow in Neotropical bat species as a result of the Mesoamerican topography. At the LSUMNS, Dr. Hernández Canchola and Vivas Toro were able to retrieve genomic information from both fresh tissue and old dry-preserved specimens collected in localities that now are difficult to access. They chose the LSUMNS to conduct their research because of the “valuable representation of Neotropical bat specimens” and also because “this place is full of nice and friendly people.” About their experience at the Museum, they said:

“Visiting the Museum is always such a nice experience, we are so grateful to the faculty members, staff and students who were extremely attentive and willing to assist us with anything we needed. We hope to visit LSUMNS soon, for the relevance of its scientific collections, researchers and facilities, but also for the friendly environment it has.”

Giving Form to Support the Museum of Natural Science

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Enclosed is My Gift of:

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Give to Museum of Natural Science through the [LSU Foundation giving page](#).

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Editing by Irene Marti Gil (imart23@lsu.edu)