

# Museum Quarterly

LSU Museum of Natural Science

May, 2006

Volume 24, Issue 2

## Museum of Natural Science Curators and Directors

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*Director, George H. Lowery,  
Jr., Professor, and  
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Resources*

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*Curator of  
Herpetology*

**Robb T.  
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Genetic Resources*

**J. Michael  
Fitzsimons**  
*Curator of Fishes*

**Mark S. Hafner**  
*Alumni Professor and  
Curator of  
Mammals*

**James V. Remsen**  
*John Stauffer McIlhenny  
Professor and  
Curator of Birds*

**Rebecca Saunders**  
*Curator of  
Archaeology*

**Judith A.  
Schiebout**  
*Curator of  
Vertebrate  
Paleontology*

**Sophie Bart Warny**  
*Director of  
Education*



### *Letter from the Director...*

It's time for post-Katrina good news. Museum students, staff, and alums have not been sitting idle for the last few months, that's for sure.

If you look at the LSU website, the first photo you are likely to see is of a group of hotshot LSU undergrads, including the Museum's own **Katie Faust**, who recently received an enormously prestigious Goldwater Scholarship (see article on p. 2/3). When Katie visited the LSU Honors College as a high

school senior and voiced an interest in tropical bird biology, we jumped on her like ducks on a June bug. She has been working with curator **Robb Brumfield** on hummingbirds since arriving on campus, and, boy, are we proud of her.

Speaking of Dr. Brumfield, I should reiterate the recent news that he and curator **Van Remsen** received a generous grant from NSF to work on Neotropical treecreeper phylogeny. Their success followed shortly after that of curator **Chris Austin**, who obtained an NSF grant to work on a series of herpetology projects in New Guinea. And Chris's success followed shortly after that of curator **Mark Hafner**, who received an NSF grant to continue his work on the cophylogeny of gophers and their parasites. (Mark has garnered continuous NSF support for his research since 1982—a remarkable feat, given the intense competition for NSF funding.)

Finally, in the last newsletter, I reported that three of our recent grads were candidates for jobs at the Universities of New Mexico and Kansas. Well, that competition is over. **Chris Witt** (Ph.D. 2004) has accepted the job at New Mexico, and **Rob Moyle** (Ph.D. 2002) has accepted the position at Kansas. Since then, the New York State Museum has interviewed candidates for its curator of ornithology position. Interviewees included **Jason Weckstein** (Ph.D. 2003) and **Jeremy Kirchman** (M.S. 1997). That job was offered to Jeremy, who is a doctoral candidate at the University of Florida. In case you are concerned about Jason, not to worry. He recently obtained an NSF grant to work at the Field Museum in Chicago with LSU alum **John Bates**, and his academic momentum is huge.



Jeremy Kirchman

Fred Sheldon

# Museum Undergraduate Researcher Chosen as Goldwater Scholar



## The Issue:

### Can adaptive evolution occur via hybridization between species?

In the field of population genetics, hybridization, or the interbreeding of separate species, has long been a matter of controversy regarding its role in evolution. The traditional outlook on hybrid zones in the field of zoology has been to view them as evolutionary dead ends, leading either to homogenization of the hybridizing species or reinforcement of reproductive isolating mechanisms between the two. This belief has stemmed from evidence of strong selection against hybrids, which often exhibit reduced fitness or sterility. However, research has shown that hybrids may, in some cases, exhibit equal or better fitness than their parents, creating the possibility for formation of a stable hybrid zone where the distributions of two species meet. From an evolutionary standpoint, such hybrid zones are important because they provide conduits for horizontal transfer of adaptive genes across the species boundary.

**Katherine E. Faust**, an undergraduate research student at the Museum of Natural Science at Louisiana State University, learned of her Goldwater Scholarship by checking the organization's Web site, where the winners are posted long before they are actually notified. At first she did not believe what she saw. Then she started shaking and in her words, she has not stopped smiling since.

Not only does the award mean great things for Faust's future endeavors, but it was also an honor to have her research recognized, she said, on a national level. Faust plans to pursue her Ph.D. with a focus in the evolution, ecology, and systematics of birds. Even though that work is some years away, she feels she has already received a head start.

Faust is a sophomore majoring in biological sciences. Her career goal is to obtain a Ph.D. in Ornithology. She would like to conduct field and lab research on the ecology/evolution of birds at a university or other research institution. Faust wrote her Goldwater application essay on hybridization as a mechanism for adaptive evolution. Her scholarship covers her tuition, books and other expenses.

The possibility of adaptive evolution via hybridization is particularly interesting in bird species. Approximately one tenth of bird species in the world are known to hybridize. Because mate choice in birds is often associated with specific morphological and behavioral characteristics, reproductive isolation between species depends on these prezygotic mechanisms. When these mechanisms are incomplete and the resulting hybrids both viable and fertile, any morphological or genetic character that increases mating success may introgress quickly across a hybrid zone. Corroborating evidence of this process would demonstrate that hybridization is not merely an evolutionary "dead end," but instead an important mechanism for rapid adaptive evolution. Although adaptive evolution by horizontal transfer of genes has been demonstrated in laboratory studies, convincing evidence from natural populations of organisms remains elusive.

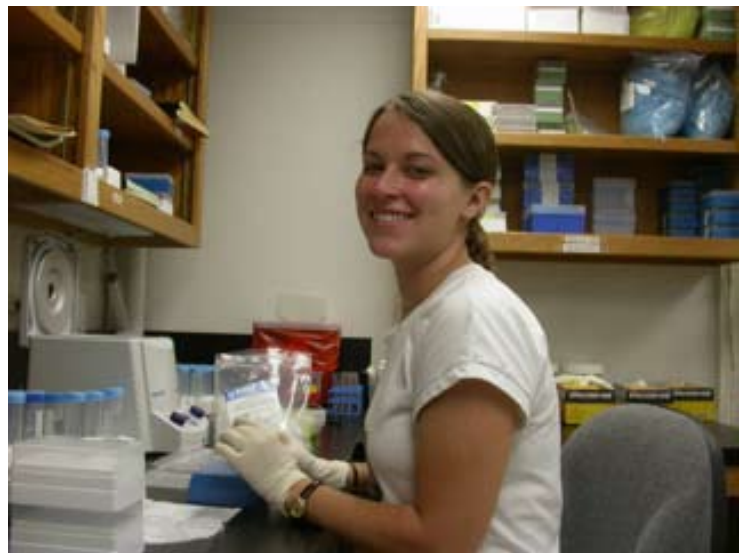
## An experiment using Jamaican hummingbirds

Two hybridizing species of streamertail hummingbirds endemic to the island of Jamaica present a possible example of adaptive evolution via hybridization. One of these species, *Trochilus polytmus*, is widely distributed across the western part of the island, and is identified by its distinctive bright red bill. The other, *Trochilus scitulus*, is confined to the very easternmost tip of the island, and exhibits a completely black bill. These two species most likely diverged in allopatry with the uplift of the Blue Mountains during the Pliocene (5-1.8 million years ago), and have come into secondary contact with one another relatively recently. Where their distributions meet, a narrow hybrid zone exists in which the two species interbreed. Birds within this transect display varying degrees of red and black in their bills.



## The research idea:

My proposed research is to test the hypothesis that the bright red bill of *T. polytmus* is introgressing unidirectionally into populations of *T. scitulus*. This research is part of a larger study that I am performing in collaboration with **Dr. Robb Brumfield** of the LSU Museum of Natural Science and LSU alum **Dr. Gary Graves** of the Smithsonian Institution. In order to measure the amount of genetic introgression that is occurring between the two species, I have collected preliminary sequence data from three nuclear introns ( $\beta$  fibrinogen intron 7,  $\beta$ -actin intron 3, GADPH intron 11) and the mitochondrial control region in 100 hummingbirds sampled from a transect in eastern Jamaica spanning the transition from red to black-billed birds. All of these genes exhibited a very high degree of variation. However, there were no fixed differences



between pure red-billed and pure black-billed populations at any of the loci, and the steep transition in bill color evidenced by the hybrid birds was not reflected in allele frequencies at any of these genes. This implies that the forces maintaining the differing bill colors are not acting as strongly on the rest of the genome. If one bill color held selective advantage over the other, it could cause the genes controlling this trait to introgress more swiftly across the hybrid zone than those that do not exhibit any adaptive advantage. It seems probable that the bright red bill of *T. polytmus* may be more effective in attracting females of both species than the black bill of *T. scitulus*, and is thus moving more quickly across the hybrid zone through positive selection.

To test this hypothesis, I am sequencing these same loci in red-billed birds collected from across the western part of the island of Jamaica, far from the visible hybrid zone. If these birds differ in allele frequencies from red-billed birds sampled near the zone, it will confirm that the red-billed trait is, in fact, introgressing more quickly than other parts of the genome. I will also screen red and black-billed birds on either side of the visible hybrid zone for fixed differences in the melanocortin-1 receptor, a gene shown to control melanism in many bird species (10). Finally, I will screen the same birds using AFLP markers in order to locate candidate genes that may control bill color. With all of this evidence, it will be possible to determine whether the theory of unidirectional introgression of the red-billed trait across the hybrid zone is correct. Such one-way introgression of selectively favorable alleles would demonstrate that hybridization can serve the important function of facilitating adaptive evolution, and that its role in the evolutionary process has been severely underestimated.

## American Universities with the Most Goldwater Scholars in 2006

The **Barry M. Goldwater Scholarship** provides up to \$7,500 per year for educational expenses to sophomores and juniors who intend to pursue careers in mathematics, the natural sciences, or engineering. The Goldwater Foundation seeks students who demonstrate a strong commitment to a career in mathematics or the sciences, display intellectual curiosity and intensity, and possess potential for significant future contributions in their chosen field.

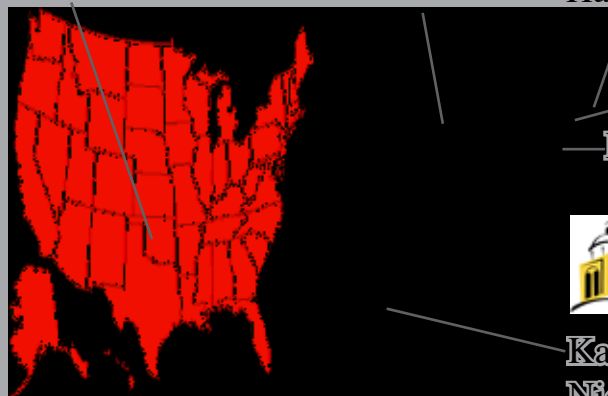
Arizona State (4)

UMichigan (2)

Harvard (2)

Yale (3)

Princeton (4)



Katie Faust  
Nickolas Vanmeter  
Jacquelyn Zimmerman



# Louisiana Bird Resource Center



Full approval of the Bird Resource Center, which is located in Room 208 of Foster Hall, is now in the hands of the LSU Board of Supervisors. We submitted the application earlier this semester to the board. Our proposal began with the executive summary as follows:

More than 70 million people in America watch birds, and Louisiana--because of its vast marshes and swamps and remarkable concentrations of birds during migration--is a particularly desirable destination for bird-watchers and other ecotourists. However, Louisiana lags far behind other states in the development of its infrastructure for bird-watchers. Our state bird book, *Louisiana Birds* by George Lowery, was last printed in 1974 and is woefully out of date, and we have no tourist guide to bird-watching in Louisiana. Virtually every other state has a comprehensive Guide to Birding that describes, with detailed maps, where visiting bird-watchers can find birds as well as where to eat and sleep when looking for birds. Such guides facilitate bird-watching and undoubtedly promote ecotourism in those states that have them. On the other hand, Louisiana leads most other states in ornithology--

the scientific study of birds. LSU, Tulane, the University of Louisiana at Lafayette, and the State Department of Wildlife & Fisheries have excellent bird research programs. Indeed, LSU's bird program is second only to Cornell University's in productivity, and it is well ahead of Cornell's in graduate student training. Moreover, in Louisiana, many clubs, societies, and non-governmental organizations exist to promote bird-watching, conservation, and other natural history endeavors. These include the Louisiana Ornithological Society (LOS), the state's two Audubon chapters (Baton Rouge Audubon and Orleans Audubon), the Nature Conservancy, and several birding clubs.

Despite this large number of knowledgeable and interested stakeholders, communication and coordination is minimal among the state's professional and volunteer bird organizations. As a result, cooperative interaction in Louisiana between academic ornithologists, amateur natural historians ("citizen scientists"), wildlife managers, conservationists, and the tourism industry does not approach its potential. Consequently, despite its natural gifts, Louisiana has failed to capitalize on hundreds of millions in tourist dollars and to assume its rightful position as the national leader in bird research and conservation.

To improve the infrastructure for bird research and tourism in Louisiana, we established the Louisiana Bird Resource Center at LSU's Museum of Natural Science in 2004. This Center coordinates research on birds by providing a conduit for information for bird interest groups in the state. Its goal is to be an information clearinghouse for data on birds from all available sources and to make those data available online and through publications to researchers, conservationists, developers, bird-watchers, and other interested parties. The Museum was the logical location for this Center because of its large and productive research program and its experience in collecting and storing data. We traditionally gather information on birds, ranging from observations of nests and rare species by bird-watchers, to basic life-history data inherent in bird collections and obtained during bird surveys, to molecular genetic information produced from the Museum's world-renowned Collection of Genetic Resources.

The Bird Resource Center is up and running smoothly. We have raised funds for five years of operation through private donors and the State Wildlife Grant program. It is manned by two employees and a student worker. Current projects include the establishment of an interactive web site for data storage, final touches on a state birding guide, identification of "Important Bird Areas" for conservation and birding, and the compilation of a new Birds of Louisiana handbook.

# Museum of Natural Science Welcomes Melanie Driscoll



As a result of Hurricanes Katrina and Rita, the necessity for protecting Louisiana's habitats and resources have never been so clear. Habitat fragmentation and loss were recognized years ago to be a primary threat to birds worldwide. In response, the Important Bird Areas (IBA) Program was designed to identify a network of sites that provide critical migration stopover, breeding, and wintering habitat for birds globally.

As part of its efforts to become more involved in the natural history and conservation planning in Louisiana, the LSUMNS is pleased to welcome Melanie Driscoll to its newly founded Bird Resource Center. Melanie is the new IBA Program Coordinator for Louisiana. Funding for the position was secured by the Baton Rouge Audubon and Orleans Audubon Societies, with a matching State Wildlife Grant for this 3 year position. The IBA Program is one of the primary conservation projects of the National Audubon Society.

As the IBA Program Coordinator, Melanie will be responsible for designating a Technical Committee, which will help to draft site selection criteria. She will develop a site nomination form to send out to stakeholder groups, such as the local bird clubs, Audubon Societies, and the Louisiana Ornithological Society. Then, based on scientific criteria, the Technical Committee will evaluate nominated sites and prioritize those that are considered important habitat for populations of birds.

Based on the prioritizations, which will include threats to sites, ownership issues, and opportunities for conservation action, the IBA Program will then begin to pursue conservation actions at some of the sites. Finding local groups to adopt IBAs and help to manage the sites is one viable option. Additionally, the IBA designation may help decision-makers to prioritize areas to receive funding for monitoring or conservation action.



Melanie came to LSU from the Cornell Lab of Ornithology, where she most recently worked on a nocturnal flight call monitoring project performed at military bases. Previously, Melanie had worked for two and a half years as the supervisor of field research and project leader for the House Finch Disease Survey, a project examining the ecology and transmission of mycoplasmal conjunctivitis in House Finches. Melanie got her Master's in Biology from the State University of New York College of Environmental Science & Forestry, studying how landscape composition moderates edge effects on the nesting success of Wood Thrushes in central New York. Prior to her work in New York, she spent three years as a community forestry Peace Corps volunteer in Suphanburi, Thailand.





Image: Antarctica, P. Bart geophysics campaign 2003

**SUGGESTED WALKING TOUR:**

**LSU MUSEUM OF NATURAL SCIENCE(MNS)/ 119 FOSTER HALL**

A trip to the South Pole... Discover Antarctica through our brand new 40-ft long interactive exhibit and animations and through the Ice Cube traveling exhibit.

**LSU SCHOOL OF ART GALLERY/111 FOSTER HALL Morgan Harris – The Social Ape: MFA Graphic Design Thesis Exhibition**

This exhibit will feature work from graduate level master's candidate Morgan Harris.

**STAR LAB/ BETWEEN MIDDLETON LIBRARY, FOSTER HALL, & THOMAS BOYD HALL**

Visit this portable planetarium complete with special media presentations and telescopes to see the sun and the flares on its surface.

**M.A.R.S. VAN/ WEST END OF THE THOMAS BOYD PARKING LOT ADJACENT TO FOSTER HALL**

Visit the Mobile Astronomy Resource System (M.A.R.S.).

**MIDDLETON LIBRARY/ LOBBY**

Stop by the LSU Libraries to learn about the services and resources provided to the LSU community. Learn about government publications, education resources, and much more.

**LSU PRESS AT MIDDLETON LIBRARY/ LOBBY**

Don't pass up the LSU Press sales table where *Tales of Mike the Tiger* will be available for purchase.

**MIDDLETON LIBRARY/ ROOM 227 – EDUCATION RESOURCES (2ND FLOOR)**

**The Giverny Book Award: Best Children's Science Picture Book**  
Browse the children's books which have won this highly respected award established by LSU professor, James Wandersee. Meet Jean Cassels, New Orleans artist and illustrator of one of the award-winning titles, who will have books for sale and signing.

**LSU LIBRARIES SPECIAL COLLECTIONS/ HILL MEMORIAL LIBRARY**

**Special Delivery: A Showcase of LSU Libraries Special Collections** exhibits library treasures. A special program highlights the T. Harry Williams Center for Oral History and its work documenting civil rights, LSU Home Economics, Vietnamese refugees, and more.

Kate Barton	Ginger Guttner	Pam Rabalais
Victoria Bayless	Tom Harang	Brad Schaefer
Tanya Chapman	Leah Jewett	Julie Tessier
Buddy Ehrhridge	Malia Krolak	Sophie Warny
Senhil S. Ganesh	Jessica McKelvie	Judi Stahl, Chairperson

Hosted by LSU GEMS Committee (Galleries, Exhibitions, Museums, and Special Sites) with the support of the National Science Foundation through the Ice Cube Project of the Antarctica Astronomy and Astrophysics Research Institution at the University of Wisconsin, Madison.

**LSU DEPARTMENT OF PHYSICS AND ASTRONOMY/ 202 NICHOLSON HALL**

Come see the sun and moon in the daytime through various telescopes, including an 11.5-inch Clark refractor, on the roof of Nicholson Hall at the Landolt Astronomical Observatory.

**LSU DEPARTMENT OF GEOLOGY AND GEOPHYSICS/ ATRIUM HOWE-RUSSELL BLDG**

Discover the dinosaur *Allosaurus* and learn with hands-on activities on rock and mineral collections. Children will have the opportunity to excavate and identify fossils.

**LSU TEXTILE AND COSTUME MUSEUM/ 140 HUMAN ECOLOGY BLDG**

**Converting Commodity Bags: Recycling Circa 1940**  
See an exhibition of apparel and textile artifacts fashioned from flour, sugar, and animal feed sacks half a century ago. Children will enjoy their own recycling project.

**LSU DAIRY STORE/111 DAIRY SCIENCES BLDG, SOUTH STADIUM DR**

Purchase dairy products including ice cream (cup or cone), milk shakes, old-fashioned malts, coffee, cheddar, and processed cheese.

**LOUISIANA STATE ARTHROPOD MUSEUM/ 575 LIFE SCIENCES BLDG (5TH FLOOR)**

As a component of the LSU AgCenter and the Department of Entomology, the Louisiana State Arthropod Museum houses over 600,000 insect specimens. Visitors can expect to see glass drawers containing dried specimens, and a "behind the scenes" tour will be given to show how museums preserve insects for future studies.

**LSU UNION ART GALLERY/216 UNION**

**LSU Juried Student Art Show**  
View the best work by LSU undergraduate students as selected by professional jurors.

**AFRICAN AMERICAN CULTURAL CENTER/ RAPHAEL SEMMES RD**

The cultural center will present information about its programs and showcase a review of previous programming. Artifacts will on display while visitors listen to jazz music. Keepsakes will be available and will serve as a reminder that Black history is American history.

**WOMEN'S CENTER/HELEN CARTER HOUSE, RAPHAEL SEMMES RD**

A representative of the Women's Center will provide visitors with a tour of the facilities, and a special program will be available for children.

**SUGGESTED DRIVING TOUR:**

**LSU SCHOOL OF VETERINARY MEDICINE LIBRARY/ SKIP BERTMAN DR**

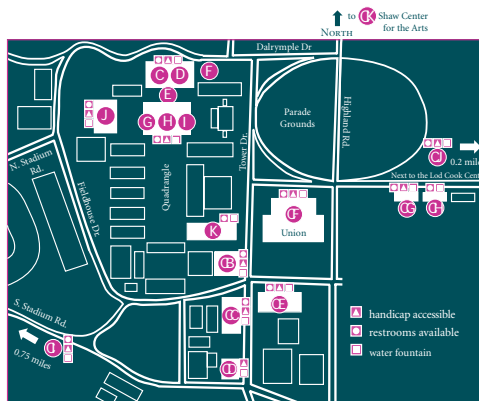
**19th Annual International Exhibition on Animals in Art**  
View works from across the country and around the world focusing on animals in art. Driving directions from north of campus: Take Nicholson to South Stadium, turn right at Alex Box Stadium. Vet School is on the right before River Road.

**ANDONIE MUSEUM/3828 WEST LAKESHORE DR, ADJACENT TO THE LOD COOK CONFERENCE CENTER**  
Celebrate LSU Athletes! See autographed sports memorabilia and tributes to famous athletes, including the shoes of Shaquille O'Neal!

**LSU SCHOOL OF ART GALLERY/ALFRED C. GLASSSELL JR. EXHIBITION GALLERY, SHAW CENTER FOR THE ARTS, LAFAYETTE AT CONVENTION STREET**

**8 Fluid Ounces: A National Juried/Invitational Ceramic Cup Exhibition**  
Cups of every description will be on display in the gallery at the Shaw Center. These works are for sale, and a gallery representative will be available to answer any questions you may have concerning the exhibit and LSU School of Art Gallery membership.

**SUGGESTED WALKING & DRIVING TOUR**



More info: Go to [www.lib.lsu.edu/special/isugems](http://www.lib.lsu.edu/special/isugems) for the LSU GEMS/Museums Day map/brochure.

# GEMS/MNS Museum Day



The Museum of Natural Science and other LSU museums and galleries hosted the annual GEMS/Museum Day on Saturday, April 1st, from 2:00 pm to 5:00 pm at Louisiana State University. Museum day showcases the exhibits and dioramas of campus museums by incorporating educational activities that are interesting for children and adults.



This year, Museum Day was presented with the support of the National Science Foundation and the Antarctica Astronomy and Astrophysics Research Institution at the University of Wisconsin,

Madison, in conjunction with the IceCube Project. The IceCube Project, an international collaboration of scientists from more than 30 scientific organizations and 13 universities, is a high energy neutrino observatory being built and installed in the ice below the South Pole Station.

Museum activities included experiments explaining the importance of ocean circulation and stratification, and blubber for animals in colder climates. Each of the other nineteen sites featured special exhibits including the Mobile Astronomy Resource System (M.A.R.S. van), the T. Harry Williams Center for Oral History, the works of Morgan Harris, apparel and textile artifacts, rocks and minerals, wave erosion, astronomy, animals in art and other juried art exhibitions.





# The Birds of Malaysia

The Museum's research program on the birds of Malaysia is going great guns. Eight years ago, the door to Malaysia was opened by graduate students **Rob Moyle** and **Alison Styring**. Rob studied the distribution and phylogeny of birds in the Malaysian state of Sabah in north Borneo, and Alison studied the ecological effects of logging on woodpeckers in peninsular Malaysia. These former students have now moved on to prestigious professorial jobs (Rob at the University of Kansas, and Alison at Evergreen State College), but their legacy lives on! In each of the last three years, the Museum has sent multiple expeditions to Malaysia to study bird ecology and population genetics.

Ph.D. student **Haw-chuan Lim**, a Malaysian citizen from Johor Baru (a suburb of Singapore), is studying the effects of logging on the ecological and genetic health of bird communities on the Malay peninsula. He has selected a series of "indicator" bird species distributed in remnant patches of forest left from logging. Each of these forest patches amounts to an island (usually surrounded by agricultural plantations or heavily degraded forest), and each island varies in size, quality of habitat, and distance from large, undisturbed forest. By comparing the feathers, parasite loads, and genes of the indicator birds in each forest island, he hopes to determine habitat factors that influence bird community health and, thus, conservation management decisions.



In 2004 and 2005, the Museum sent four expeditions to Sabah. LSU participants in these trips were undergraduate **Julia Raddatz**, M.S. student **Cheryl Haines**, Ph.D. student Ben Marks, Museum Director **Fred Sheldon**, and alumnus **Rob Moyle**. On these trips, they collected birds on mountain peaks and in isolated patches of forest to study the process of species formation, and they surveyed plantations to assess the degree to which native forest birds make use of agricultural and pulp-wood groves. This coming summer Alison, Rob, and Fred will be returning for more work in the mountains and plantations in Sabah and nearby Sarawak.



# Sharks Invade the Museum of Natural Science



Da Dum.  
Da Dum.  
Da Dum.  
Da Dum Da Dum Da Dum Da Dum.



To many this is the sound of doom from the theme song of the movie *Jaws*. However, in an attempt to break away from shark stereotyping, the Museum presented a Special Saturday program entitled “Sharks: to Fear or Not to Fear” to children and their parents on February 18.

Dr. Bruce Thompson, our guest scientist for the event, said he has been studying sharks since he was seven.



“I tell children to think of sharks as the lions and tigers of the sea,” said Thompson.

Thompson talked to the children about the common misconceptions and errors of judgement associated with these aquatic creatures.

“Did you know that in the year 2005 there were a whopping four shark attacks worldwide,” said Thompson.

Thompson explained to the children that there are some common things to avoid when dealing with sharks:

- Do not swim at dusk or dawn when sharks are feeding.
- Do not swim in schools of fish because sharks eat fish.
- Do not dangle your feet in deep water, because it attracts them.
- Do not disguise yourself as a seal by wearing a dark wet suit and ride a surf board.
- Do not wiggle around in the ocean because sharks think you are a fish in distress.

“Sharks take test bites before they eat to get the taste. It is just bad luck for humans that we usually do not survive the test bite,” said Thompson.

Thompson went on further to explain the dangers of shark teeth.

“Sharks do not brush their teeth, so residue from everything they have ever eaten is still in their teeth. The teeth never dull because they are replaced as needed.” He said on average a shark loses 25 thousand teeth.

Needless to say the children did not touch the shark teeth after his speech. Who would take the chance of getting a “bacteria - infested cut on the finger from a dead shark.”



# Children Play Hide & Go Seek Bug Style

## Insects Abound

Scientists have discovered and named over 920,000 species of insects throughout the world. Children at the Special Saturday program on March 25 (entitled "Insects Abound") learned about the camouflage that makes bugs invisible to the human eye.



Step One: Paint and color the bugs that are to be hidden.



Step Two: Scout outside the museum for the hidden, camouflaged bugs.



Step Three: Find the hidden bugs.



# MNS and Local Centers Host Sun-Earth Day

Five local groups commemorated international Sun-Earth Day on Saturday, March 25, from 10:00 AM to 2:00 PM with a day of special activities at the Mall of Louisiana's guest services area. Members of the LSU Museum of Natural Science, Louisiana Art & Science Museum's Irene W. Pennington Planetarium, the Louisiana Space Consortium, LSU's Cain Center, and the BREC Observatory teamed up to offer activities and demonstrations relating to the solar eclipse that was viewed in the Middle East on March 29. Mall visitors explored the Discovery Dome portable planetarium, participated in art and science projects and viewed special NASA displays. Telescope viewing of the sun with special solar filters took place in the LSU MARS van outside the mall's main entrance.

Sun-Earth Day consists of a series of programs and events that occur throughout the year culminating with a celebration on or near the Spring Equinox. However, in 2006 a total solar eclipse occurred just nine short days after the equinox. In response to this celestial event, the official date for Sun-Earth Day 2006 was moved to March 29, 2006.

Over the past six years, the NASA's Sun-Earth Connection Education Forum has sponsored and coordinated education and public outreach events to highlight NASA's Sun-Earth Connection research and discoveries. Its strategy involves using celestial events, such as total solar eclipses and the Transit of Venus, as well as Sun-Earth Day during the March Equinox, to engage K-12 schools and the general public in space science activities and demonstrations.

The Museum of Natural Science manned a booth at the event to promote its education programs. Rebecca Tedford and Theresa Douglas helped the children to make sun-dials.



## Event Sponsors



*Thank You!*



# Archaeology News



In January, 2006, working in conjunction with the National Park Service and the South Carolina Department of Natural Resources, Dr. Rebecca Saunders and undergraduate students Cynthia Speers, Richard Simmons, and Patrick Berrigan mapped and tested five archaeological sites on Daws Island, South Carolina. At least one of these sites was thought to be an Archaic period (ca. 4000 B.P.) shell ring, which Saunders and colleagues from Florida and South Carolina believe to be the earliest monumental architecture on the lower Atlantic coast.

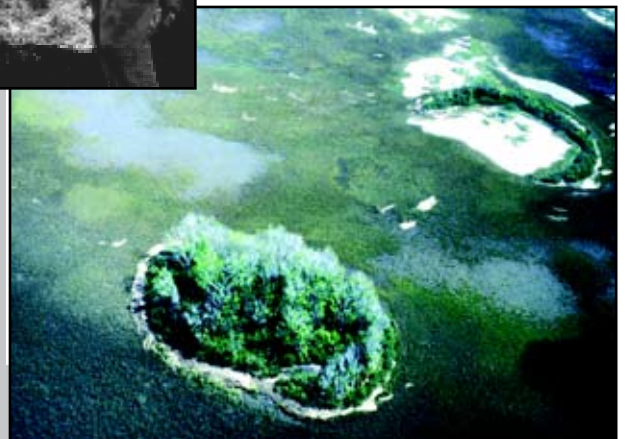
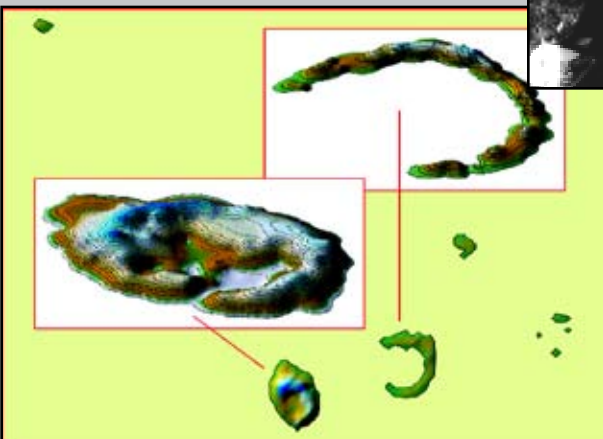


Today, Daws Island is mostly marsh; sea level has risen approximately one meter since the island was inhabited. The only high ground is where the sites—containing oyster shell, abundant small fish bone, and pottery sherds—have been built up. No small part of the reason the sites have not been investigated previously is logistics. Fast moving, eight-foot tides prohibit long-term mooring of boats; we assigned one crew member permanently to preventing the boat from grounding while maintaining it within reach at the end of the day. We only had to be rescued once, when

high January winds whipped up waves too vicious for our small launch to carry us the four miles back to the mainland.



As the mapping disclosed, there are actually two shell rings on Daws. As can be seen in the aerial, the configuration of the larger of the two (38BU300) was obscured by trees, but surface topography and probing for subsurface shell revealed an





# Archaeology News



arc-shaped construction some two meters high with a central plaza 50 meters in diameter. A 1-x-2 meter unit in the south arm of the ring indicated that it was built up of what we now recognize as conventional ring fill—large, whole, clean oyster with none of the soil that is commonly incorporated into shell trash piles (middens). A radiocarbon date from the base of the shell in that unit indicates that ring construction began around 3500 years ago. The other ring, 38BU301, was lower, just over a meter high, but had a wider plaza of some 60 meters. This ring has



not been dated yet, but if the team experience at other ring sites holds, it will be contemporaneous with BU300. The other three sites proved to be clam-shell processing sites dating to ca. A.D. 650.

Dr. Saunders and colleagues theorize that shell rings were sacred centers where fishing and gathering bands of Native Americans congregated, yearly or seasonally, for: rituals to ensure good fortune in the coming seasons, information exchange, trade, music and dancing, and mate selection. They did what peoples of all ages have done when they get together—they feasted. The rings are built of those feasting remains, a sort of consumption made conspicuous, to indicate the success of the corporate group. These



are spaced in more or less regular intervals along the coast from northern South Carolina to Jupiter Island, Florida. Our detractors insist that the rings are simply habitation sites; that fisher-gatherers did not have the sociopolitical wherewithal to build monuments. The team is chipping away at this out-dated model. Saunders recently gave a paper in a symposium at the Society for American Archaeology in which coastal sites from all the Americas were compared. It was very well received and we have been asked to submit the subset of papers on rings to an international journal (by an Australian researcher with no preconceived notions). Her ambition is to map, test, and radiocarbon date all 30-odd ring sites known. Researchers still have significant gains to make, but as long as the water is calm, they will continue.



# Congratulations to Barun Sen Gupta



**Barun K. Sen Gupta**, retired curator of fossil protists and invertebrates and H. V. Howe Professor Emeritus of Geology, received the Joseph A. Cushman Award for Excellence in Foraminiferal Research at the 2005 meeting of the Geological Society of America in Salt Lake City.

The Joseph A. Cushman Award was established in 1979 to honor researchers who have made outstanding contributions in the field of foraminiferology. The award consists of recognition of the awardee in the pages of the *Journal of Foraminiferal Research*, and a plaque embossed with the Foundation's seal, the awardee's name and date of the award.



## Gwen's Good-Bye

MNS wishes good luck to former administrative assistant **Gwen Mahon**. After six years of hard work and dedication here at the Museum, Gwen has moved to a position at a printing and graphic design firm in Plaquemine, LA.

*I have been at my new job for a few weeks now, and I really like it. It's a fast-paced job and the printing industry is really interesting. Even though I like my new job, I hated to leave the Museum and all of the great people. I miss all of you already!*

*Take care and keep in touch!*

*Gwen*

## Katherine Ann MacCracken



Congratulations to **Kevin and PJ McCracken** who are now the proud parents of Katherine Ann MacCracken. Kate was born on March 16, 2006, at 11:40 a.m. She weighed 6 lbs. and 20 ounces and measured 20 inches long. Here she is being held by her brother

Kevin and PJ are currently in Fairbanks, Alaska, where Kevin is an assistant professor with the Institute of Arctic Biology and Department of Biology and Wildlife at the University of Alaska -- Fairbanks.



# In Memoriam

We are sorry to report that **Joseph E. Hazel**, retired adjunct curator of fossil protists and invertebrates, died February 9, 2006, from complications following heart surgery. A former branch chief of paleontology and stratigraphy with the United States Geological Survey and a research geologist with Amoco Oil Company, Joe was the Campanile Charities Professor of Geology and Geophysics and chair of his department before retiring from LSU in 2001. While his work involved many areas of geological science, his main research interests were in Ostracoda and Mesozoic-Cenozoic micropaleontology. Joe described over eighty new ostracode taxa, and species have been named in his honor.



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