



*Fromia millepora*



*Eriphia scabrícola*



*Chloeia sp.*



*Lybia n. sp.*



*Elysia pusilla*

# FLORIDA MUSEUM of NATURAL HISTORY

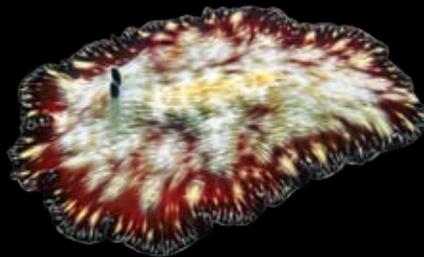
Annual Report 2008-2009



*Chromodoris kuniei ransoni*



*Trapezia lutea*



*Paraplanocera n. sp.*



*Pilodius flavus*



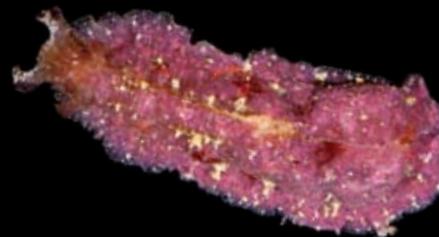
*Fromia sp.*



*Chromodoris tinctoria*



*Thyrolambrus efflorescens*



*Dolabrifera dolabrifera*



*Aniculus aniculus*

*“The Florida Museum of Natural History is Florida’s state museum of natural history, dedicated to understanding, preserving and interpreting biological diversity and cultural heritage.”*

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***This Annual Report features images from the Florida Museum of Natural History Malacology Collection.***

Malacology is devoted to the study of mollusks, the second largest phylum of animals in terms of described species. About 100,000 species of mollusks are known, and the Florida Museum holds more than 30,000 species among 400,000 lots of specimens. More than 300,000 lots are now databased and accessible online ([fimnh.ufl.edu/malacology/collections.htm](http://fimnh.ufl.edu/malacology/collections.htm)). The collection is among the five largest in the U.S., and one of the most rapidly growing. It is the second largest mollusk collection worldwide in online accessibility.



*(left) Marine Malacology Curator Gustav Paulay surveys the biodiversity of Kiritimati Island in the Pacific. Since Paulay’s hire in 2000, the Museum also has added an increasing number of non-molluscan marine invertebrates to its collection.*

# A Message From the Director



In December 2008, the Florida Museum received the most significant gift in its long history from its most generous benefactors. Bill and Nadine McGuire of Minnesota donated a massive collection of more than 2 million butterflies and moths, cash to support curation of the collection, and scientific equipment to outfit the Lepidoptera laboratories. As reported on the front page of *USA Today*, the McGuire gift was valued at more than \$41 million and is the largest gift received by the Museum or the University of Florida to date.

Another major Museum news story was the discovery of the world's largest snake, a fossil unearthed at a coal mine in Colombia. Christened *Titanoboa* by Museum paleontologist Dr. Jonathan Bloch and colleagues in their report in the February 2009 issue of *Nature*, this behemoth was estimated to be longer than a school bus. Be sure to watch for the forthcoming movie...

Despite inspiring philanthropic and scientific stories like these, unsettling economic news seemed to dominate headlines for much of the year. Unfortunately, the Museum also was affected by the financial crisis that struck individuals and institutions alike. Our budget shrank for a second straight year due to state revenue shortfalls and poor endowment earnings. But despite another round of staff layoffs and cuts to our recurring state funding, the news coming out of the Florida Museum wasn't all gloom and doom.

A sampling of notable achievements offers a sense of the excellence and vibrancy across our institution, even in a bad budget year: the Museum received its 10-year reaccreditation from the American Association of Museums; faculty and staff published 171 scientific and technical reports and produced 39 popular publications; Dr. Norris Williams, Keeper of the Herbarium, received the Smithsonian Institution's prestigious José Cuatrecasas Medal for Excellence in Tropical Botany; the Museum secured two new endowed chairs in archaeology and invertebrate paleontology; and the Museum successfully opened its double feature exhibition – *ForEverglades / Alien Attack: Target Everglades* while its traveling giant shark exhibit, *Megalodon*, crossed the country from Hawaii to Miami.

As we prepare to navigate the uncertain waters of the coming year, we do so without the reliable direction offered by longtime Museum Director Dr. J.C. Dickinson, Jr., who passed away in January 2009 at the age of 92. His loyal support and enduring passion for the Florida Museum will be missed, especially by me.

Douglas S. Jones, Ph.D.  
Director, Florida Museum of Natural History



(clockwise from bottom) Cuban tree snail, *Polymita picta*; a pelagic marine snail, *Janthina janthina*; and *Manus green papuina*, *Papustyla pulcherrima*.



Cauliflower coral,  
*Pocillopora woodjonesi*



## Collections and Research

The Florida Museum's curatorial and research programs flourished once again this year. The Museum's Collections and Research facilities at Dickinson Hall and the McGuire Center house more than 28 million irreplaceable specimens along with their associated field notes, photographs, databases, libraries and laboratories. The Florida Museum's Collections and Research programs rank among the best in the world.

The Museum brought in more than \$3.3 million in new and continuing grants to support research, collections curation and education. Biological research focuses on the anatomy, genetic resources, ecology, behavior, paleontology and evolution of plants and animals, and the Museum's anthropological research is concerned with changing human cultures through prehistoric and historic time. While the Museum's primary collections and research strengths are centered in Florida, the southeastern United States and the Caribbean, its programs span the globe. Most of the collections of plants, animals, fossils, and artifacts rank among the top 10 nationally or internationally.



*(left) Malacology student Donya Salmasinia examines a soft coral while working in the collections. (right) Scaeuergus unicolor, a deep water octopus*

## 2008-09 COLLECTIONS AND RESEARCH HIGHLIGHTS

The following highlights are a small sample of the many issues Florida Museum of Natural History scientists investigated during the past year.

### Archaeology and Ethnography

#### CARIBBEAN ARCHAEOLOGY

- Pre-Columbian salt production (Puerto Rico and Lesser Antilles).
- Archaeological faunal remains (Turks and Caicos, St. Lucia).
- Prehistoric ceramic collections from Savanne Suazey (Grenada) and Paradise Park (Jamaica).
- Fishing net weights from Key Marco and Puerto Rico.

#### ENVIRONMENTAL ARCHAEOLOGY

- Prehistoric overhunting and sustainability.
- Ethnographic/ethnohistoric ritual Maya animal caching and its implications for ancient Maya diet in highlands of Guatemala.
- Prehistoric climate seasonality with Florida Museum Invertebrate Paleontology and South Carolina Institute of Archaeology and Anthropology.
- Irvy Quitmyer received Florida Museum Staff Enrichment Award.

#### ETHNOGRAPHY

- Systematic analysis of Seminole/Miccosukee clothing.
- Exhibit at Samuel P. Harn Museum of Art, *Voicing Indigenous ARTifacts - Amazonian Featherwork*, using the indigenous Amazonian collection.
- Donation of an East Florida Seminary uniform, the precursor institution to the University of Florida.
- Ethnographic displays for local agencies' Native American Heritage Day programs.

#### FLORIDA ARCHAEOLOGY

- Completed digital imaging of Bullen Projectile Point Type Collection for publication on the Museum's web site.
- Rehabilitation of Pineland Collection, an internationally significant collection from a major Calusa Indian town site.
- Salvage excavations in response to damage of Brown's Mound at the National Register-listed Pineland Site Complex.
- Upgraded documents from 1960s systematic excavations at the Ft. Center Site archaeological complex to museum-quality standards.
- Hosted International Gator Day, a day of fieldwork at the Pineland Site Complex, for the Southwest Florida Gator Alumni Club.

#### LATIN AMERICAN ARCHAEOLOGY

- Completed research on Maya calendar for *Past and Future Time on Earth: Mesoamerican Calendar Records of the Natural World*.
- Systematic study and database of Bullard Collection, a major Maya ceramic sherd collection.
- Susan Milbrath appeared in a Discovery Channel special on the Mayan Calendar and the 2012 calendar "roll-over."

#### SPANISH COLONIAL ARCHAEOLOGY

- Synthetic research at En Bas Saline, Haiti.
- Analyzed archaeological data from the Greater Antilles for a synthesis of 16th-century Spanish colonialism in the Caribbean.
- Completed curation upgrade of the pre-1975 collections from St. Augustine; began curation upgrade for the pre-1970s collections from the historic Spanish Caribbean.
- Received Lockwood Professorship in Florida and Caribbean Archaeology.

### Museum Studies

- Investigated the impact of Native American encounters on natural history, using accounts of 16<sup>th</sup>-century Neotropics and management of commercial deer hunting in the 18<sup>th</sup>-century Southeast.
- Researched famous painter Martin Johnson Heade's work in Florida.

*This 20th-century turtle rattle from the Museum's collections, created by the Bororo People of Brazil, was displayed in the Voicing Indigenous ARTifacts - Amazonian Featherwork exhibit at the Harn Museum of Art.*



*Latin American Art and Archaeology Curator Susan Milbrath compares the Mayan Codex Borgia image with a planetarium projection of the solar eclipse that occurred in August 1496.*





Herbarium Curator Norris Williams received the 2009 Jose Cuatrecasas Medal for Excellence in Tropical Botany.

## Botany

### HERBARIUM

- DNA “barcoding” of plant species in Florida, focusing on invasive and poisonous plants of Florida.
- Completed genetic sequencing for study of chloroplast genomics of Orchidaceae.
- Web site *Revealing the Rare: A Virtual Collection of Florida's Endangered Plant Species*.
- Web site for the National Science Foundation *Assembling the Tree of Life* program.
- Williams selected as the 2009 recipient of the Jose Cuatrecasas Medal for Excellence in Tropical Botany, presented by the Smithsonian Institution to a scientist who has contributed significantly to advancing the field of tropical botany.
- High resolution digital imaging of herbarium specimens.

### MOLECULAR SYSTEMATICS AND EVOLUTIONARY GENETICS LABORATORY

- Angiosperm (flowering plants) phylogeny, patterns and genetics of floral evolution, patterns and processes of gene and genome evolution, phylogeography, and conservation genetics of rare Florida plant species.
- Comparative phylogeography of eastern North American tree species and of woody and herbaceous plants from southeastern North America.
- Conservation genetics of *Ziziphus celata*, *Hypericum cumulicola* and *Crotalaria avonensis*.
- Maribeth Latvis received a prestigious 2009 National Science Foundation Graduate Research Fellowship, given to exceptional students working in science, technology and engineering.

### PALEOBOTANY

- A new early angiosperm from northeast China, Eocene fruits and seeds, and low latitude early angiosperm biodiversity of the Lower Cretaceous.
- Lower Cretaceous plant/insect interactions preserved in angiosperm leaves from the Dakota Formation.
- Angiosperm *Assembling the Tree of Life* research, comparing morphological data with molecular characters.
- Floristic exchange between the northern and southern continents by comparing Paleocene and Eocene African and South American floras with those of the Northern Hemisphere.



This fossil flower with two enlarged fruit bodies of *Chaneya tenuis* represents a new genus of winged fruit from the Tertiary of North America and eastern Asia.

## Invertebrate Zoology

### MALACOLOGY

- Systematics of land and freshwater snails of the southeastern United States and tropical America.



Philippine dove snail  
*Obba columbaria*

### MARINE INVERTEBRATES

- Genetic barcoding of marine invertebrates, including biodiversity and DNA survey of marine invertebrates on Moorea Island (French Polynesia) and in the northwestern Hawaiian Islands.
- Biodiversity and diversification of marine invertebrates in the southwest Indian Ocean.

### INVERTEBRATE PALEONTOLOGY

- National Science Foundation-funded curation of Late Pleistocene corals, mollusks and crabs from uplifted islands of Polynesia, representing the most comprehensive fossil collection available from the Niue, Cook and Austral islands.
- Compiled and published diversity and distribution records for all reported Caribbean Neogene crabs and shrimps.
- Paleontological resource surveys on Guantanamo Bay Naval Station, Cuba, documenting Late Pleistocene to Eocene marine deposits.

## Vertebrate Zoology

### ICHTHYOLOGY

- Completed All Catfish Species Inventory research project.
- Completed a major revision of the Peterson Field Guide to Freshwater Fishes of North America.
- Systematics of percid, siluriform and cypriniform fishes.
- Monitored, documented, evaluated and reported on worldwide shark attacks and other shark/human interactions through Florida Museum International Shark Attack File.
- Satellite tracking of endangered sawfish to determine migratory patterns and habitat use for conservation initiatives.
- Project Shark Awareness outreach initiative to educate the public about the myths and realities of shark behavior, biology and conservation.
- Felipe Carvalho won top honor for the Alec Courtelis Scholarship from the UF International Center, and an Outstanding Achievement Award from the UF College of Agriculture and Life Sciences.



Blackbelt Cichlid  
*Vieja maculicauda*

## HERPETOLOGY

- Developed online Atlas of Florida's Amphibians and Reptiles.
- Boa constrictors and pythons in southern and central Florida and their impact on native fauna.
- Conservation and management assessment of critically endangered amphibians in Honduras and Nicaragua.
- Bacteria and microfungi on the skins of non-regenerating amphibians as it relates to their well-being.

## MAMMALOLOGY

- Reconstructed the evolutionary history of bacterial endosymbiosis in obligate blood-feeding lice.
- Genetics of Key Largo woodrats, Florida mice, and Southeastern pocket gophers using skin samples preserved in the Museum's Genetic Resources Repository.
- Parasitic lice of primates and humans to study rates of evolution in human history.
- Florida panthers, including the use of stable isotopes and Harris lines to assess the health and diet of this endangered carnivore.

## ORNITHOLOGY

- Early Miocene bird fossils from the Thomas Farm site, Gilchrist County, Fla.
- Evolution and extinction of birds in the Bahamas, Trinidad & Tobago, Venezuela and Peru.
- Bird and plant community composition in Mexico, the Bahamas and dry forests and deserts in Peru.
- Spring migration of Common Loons across the northern Florida Peninsula.
- Jessica Oswald received a prestigious 2009 National Science Foundation Graduate Research Fellowship, given to exceptional students working in science, technology and engineering.

## THE KATHARINE ORDWAY CHAIR IN ECOSYSTEM CONSERVATION

- Effects of urbanization on bird communities and populations in north Florida, with emphasis on the mockingbird.
- Community dynamics of birds in isolated habitat patches in tropical dry forests, white sands forests and Amazonian river islands in northern Peru.
- Factors governing altitudinal range limits in Andean birds with special emphasis on biotic interactions and physiological limitations, to help predict the consequences of global climate change.
- Jill Jankowski awarded a National Science Foundation Doctoral Dissertation Improvement Grant.

## VERTEBRATE PALEONTOLOGY

- Collaboration on *The Crazy Mountains Basin Project: Composition, Diversity, and Evolution of Paleocene Mammalian Faunas*.
- Mammalian faunas across the Paleocene-Eocene boundary to document biotic change in response to ancient global warming, central Bighorn Basin, Wyoming.
- The origin and early evolution of primates.
- Fossil vertebrates and plants from a Paleocene rainforest in northern Colombia, including discovery of *Titanoboa*, the world's largest snake.
- Development of a new rare earth element dating technique for vertebrate fossils, especially related to Pleistocene humans and extinct megafauna.
- Macroevolution and geochemistry of Cenozoic giant sharks.



*Vertebrate Paleontology Assistant Curator Jonathan Bloch examines a fossil vertebra from Titanoboa, the world's largest snake, which he and his team discovered in Colombia.*

## Genetic Resources Repository

- Augmented collection with additional samples — currently more than 14,000 samples of plants, birds, amphibians, reptiles, fishes and marine invertebrates.
- Deposited 3,000 angiosperm specimens for research on Florida plant phylogeny.
- Surveyed the status of global genetic resources collections.

## Informatics

- Ongoing development of the web sites for the Tree of Life Knowledge and Information Network, the Erudite Recorder Botanical Information Synthesizer, and Name Registration Database for phylogenetic definitions.
- Managing phylogenetic research data to support long distance systematics collaboration.
- *Digital Florida* initiative to provide museum-based collections information through interactive web resources.



*Student Jessica Oswald received a prestigious 2009 National Science Foundation Graduate Research Fellowship.*



## RESEARCH LOCATIONS

**FLORIDA** – All 67 counties, with special attention to Alachua, Brevard, Broward, Calhoun, Charlotte, Citrus, Collier, Columbia, Dade, DeSoto, Duval, Gadsden, Gilchrist, Hendry, Hillsborough, Holmes, Jackson, Lee, Leon, Levy, Liberty, Manatee, Marion, Martin, Monroe, Nassau, Okeechobee, Okaloosa, Palm Beach, Pinellas, Polk, St. Johns, St. Lucie, Santa Rosa, Sarasota and Volusia.

**OTHER STATES** – Alabama, Arizona, Georgia, Hawaii, Illinois, Maryland, Nebraska, New Mexico, New York, North Carolina, North Dakota, South Carolina, Tennessee, Virginia and Wyoming.

**INTERNATIONAL** – Bahamas, Bolivia, China, Colombia, Costa Rica, Cuba, Ecuador, France, French Polynesia, Greenland, Guatemala, Haiti, Honduras, Indonesia, Jamaica, Madagascar, Mexico, New Guinea, Nicaragua, Pakistan, Panama, Peru, Puerto Rico, St. Lucia, Thailand, Trinidad & Tobago, Turks & Caicos and Venezuela.

## TEACHING

### COURSES

ANG 4905 Individual Research in Anthropology, 22 credits  
 ANG 6115 Problems in Caribbean Prehistory, 3 credits  
 ANG 6186 Zooarchaeology of Central America, 3 credits  
 ANG 6905 Individual Studies in Anthropology, 3 credits  
 ANG 6910 Supervised Research, 6 credits  
 ANG 6910/4875 Material Culture Analysis in Historical Archaeology, 3 credits  
 ANG 6915 Research Projects in Social, Cultural, and Applied Anthropology, 4 credits  
 ANG 6971 Research for Master's Thesis, 15 credits  
 ANG 7979 Advanced Research, 19 credits

ANT 4930 Florida Archaeology, 3 credits

BOT 5625 Plant Geography, 2 credits  
 BOT 6905 Individual Studies in Botany, 3 credits  
 BOT 6910 Individual Studies in Botany, 2 credits  
 BOT 6935 Herbarium Management, 3 credits  
 BOT 6935 Molecular Systematics, 3 credits  
 BOT 6935/WIS6934 Molecular Ecology, 3 credits  
 BOT 7979 Advanced Research, 29 credits  
 BOT 7980 Research for Doctoral Dissertation, 29 credit

GLY 4905 Individual Research, 2 credits  
 GLY 7979 Advanced Research, 13 credits

HIS 3931 Science on the Mall, 3 credits  
 HSC 4905 Individual Research, 4 credits

INT 7979 Advanced Research, 4 credits

PCB 6905 Principles of Systematic Biology, 4 credits

WIS 4905 Individual Problems, 4 credits  
 WIS 4906 Honors Project, 6 credits  
 WIS 6905 Problems in Wildlife and Range Science, 2 credits  
 WIS 6910 Supervised Research, 2 credits  
 WIS 6971 Research for Master's Thesis, 3 credits  
 WIS 7979 Advanced Research, 3 credits

ZOO 2203C Invertebrate Zoology, 4 credits  
 ZOO 4905 Individual Studies in Zoology, 29 credits  
 ZOO 5486C Mammalogy, 4 credits  
 ZOO 6005 Integrated Principles, 3 credits  
 ZOO 6905 Individual Studies in Zoology, 5 credits  
 ZOO 6927 Avian Anatomy and Specimen Preparation, 4 credits  
 ZOO 6927 Behavior and Conservation, 3 credits  
 ZOO 6927/GLY 6932 Vertebrate Paleontology Seminar, 1 credit  
 ZOO 6927/GLY 6932 Broader Impacts of Science on Society, 3 credits  
 ZOO 6927/GLY 6932 Cenozoic Vertebrates of the Neotropics, 3 credits  
 ZOO 6927/GLY 6932 Island Biogeography and Paleontology, 3 credits  
 ZOO 7979 Advanced Research, 31 credits  
 ZOO 7980 Research for Doctoral Dissertation, 39 credits

**Graduate Committees Served:** 90  
**Graduate Committees Chaired:** 59

### University of Florida Scholars:

Alex Nguyen and Cari Sunni, mentored by George Burgess



## GRANTS

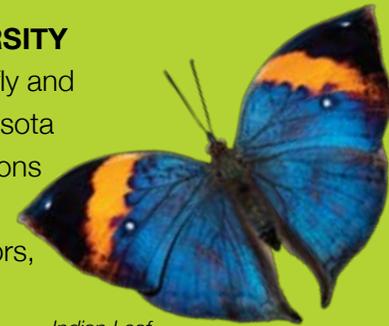
Florida Museum of Natural History faculty and staff managed \$3.3 million in new and ongoing multi-year grants and contracts during 2008-09. Faculty and staff received new grants totaling \$1.2 million from the following institutions:

Alachua County Visitors and Convention Bureau	National 4-H Council
American Museum of Natural History	National Science Foundation
American Orchid Society Foundation	Project Orianna
Evolving Earth Foundation	Southwest Florida Community Foundation
FAO Schwartz Family Foundation	State of Florida, Florida Wildflower Foundation, Inc.
Florida Department of State	State University of New York
Florida Fish and Wildlife Conservation Commission	University of California
Florida Wildlife Foundation	U.S. Department of Commerce
Institute of Museum and Library Services	U.S. Department of Health and Human Services
Lee County	U.S. Department of the Interior
Mote Marine Laboratory	



## MCGUIRE CENTER FOR LEPIDOPTERA AND BIODIVERSITY

The December 2008 donation of more than 2.2 million butterfly and moth specimens by Dr. William and Nadine McGuire of Minnesota highlighted an extraordinary year of private and public collections gifts to the McGuire Center for Lepidoptera and Biodiversity. Together with cash to support curation and student preparators, as well as equipment, the newest McGuire gift was valued at more than \$41 million, the largest gift UF has received to date.



*Indian Leaf,  
Kallima paralekta*



*(above) McGuire Center Collections Coordinator Andrei Sourakov uses a microscope to illustrate the morphology of a butterfly.*

The gift contains a worldwide representation of Lepidoptera species, including the finest collections of exotic birdwing swallowtails, colorful mistletoe-feeding *Delias* butterflies from New Guinea and Indo-China, Arctic butterflies and moths from Europe and Asia, and an extraordinary number of new species of Lepidoptera from throughout Africa and Central Asia. Great rarities from South America will aid students working with Assistant Curator Keith R. Willmott in his surveys of the butterfly fauna of seven Andean countries.

In addition to the McGuire gift, the Museum also received many other major donations of western North American moth and butterfly specimens assembled by leading lepidopterists Ronald Leuschner, Malcolm Douglas and David L. Bauer, through the philanthropic help of Drs. Jon D. and Nancy C. Turner. These donations and others are important in their scientific value of increasing the Museum's representation of the world's Lepidoptera species.

McGuire Center staff and graduate students continued critical work on conservation and restoration of the imperiled Miami Blue butterfly in south Florida and the giant Homerus Swallowtail in Jamaica, and conducted fieldwork from Africa to Asia and New Guinea.

McGuire scientists' laboratory work included a number of projects, such as DNA sequencing, chromosome studies, social nocturnal roosting behavior, caterpillar symbioses with ants, and sound production in *Heliconius* butterflies and Death's-head Sphinx moths, among others.

*(above left) McGuire Center Director Tom Emmel displays butterflies included in the gift of more than 2 million Lepidoptera from Dr. William and Nadine McGuire. (left) Butterflies collected in the field are typically stored in small envelopes until they are prepared for the collections.*



# Exhibits and Public Programs

## EXHIBITS OVERVIEW

In addition to its permanent exhibitions, the Museum hosted a wide variety of temporary exhibits while keeping its own traveling exhibits on the road during the year. The challenges presented by a weakened economy also were reflected in a 10 percent drop in Museum attendance, though visitorship remained strong at 193,893. On a positive note, however, the Museum's temporary and traveling exhibit programs were self-sustaining, and outreach programs reached more than 208,000.

## TRAVELING EXHIBITS PROGRAM – MUSEUM ON THE ROAD!



The Museum's newest traveling exhibit began its tour with a bang – *Megalodon: Largest Shark that Ever Lived* shipped to Hawaii's Bishop Museum. After its three-month stay in Honolulu, the exhibit returned to the mainland for a six-month showing at Miami Museum of Science. This 5,000-square-foot exhibit, based on Florida Museum research and funded in part by the National Science Foundation, has been well-received in these communities and will continue

traveling for the next few years, including stops in Virginia, North Carolina and Mississippi.

Now in its fourth year on tour is the 3,000-square-foot exhibit *TUSKS! Ice Age Mammoths and Mastodons*. Last year *TUSKS!* traveled to four venues: Florida's Silver Springs, the Virginia Museum of Natural History, the Northern Indiana Center for History and the Las Vegas Natural History Museum.

*(left) Justin Tell and Grant Gravely enjoy Grossology: The Impolite Science of the Human Body. (inset) Museum employees Jeff Huber and Kurt Auffenberg load crates in preparation for shipping Megalodon: Largest Shark that Ever Lived to Hawaii.*

## TEMPORARY EXHIBITS

The Florida Museum hosted four major exhibits in its 6,000-square-foot changing gallery last year.

*Inside Africa*, based on a permanent exhibit at the Field Museum of Chicago, explores the cultural and natural history of Africa. The exhibit drew 9,832 visitors, including audiences traditionally underserved by the Museum.

*Grossology: The Impolite Science of the Human Body*, an international block-buster that teaches kids about the human body and the mushy, oozy, crusty, scaly and stinky things bodies do, was extremely popular and drew 20,252 visitors.



A young Museum visitor enjoys opening day activities for the Everglades “double feature.”

In the spring, the Museum opened its own Everglades “double feature.” *ForEverglades* featured large-format landscape photography by Clyde Butcher and Jeff Ripple, and *Alien Attack: Target Everglades* provided a top-10 countdown of the most dangerous invasive species, including some live plants and animals, for 34,758 visitors.

The year closed with *Amazing Butterflies*, an interactive maze exhibit about the butterfly life cycle and unusual relationships between caterpillars, butterflies and their natural surroundings.

## THE MUSEUM PRODUCED AND HOSTED SMALLER TEMPORARY EXHIBITS IN THE GALLERIA:

- Gainesville painter Mary Jane Volkmann captured Namibia's ageless traditions and changes in *Namibia: The Smile of Africa*.
- Jim Harrison's *A Taste of Nature* showcased his unique graphic designs with Gainesville-based natural history themes.
- *Women's Medicine: Traditions of the Florida Creek Indians* featured Margaret and Michael Bogan's photographs of medicinal native plants.
- Drew Fulton's *Everglades Imagery: Intimate Detail of a Vast Landscape* complemented the Everglades double feature in the main gallery.



## TRAVELING EXHIBITS

Florida Museum exhibits traveled across the country this year.

★ Honolulu, HI

## OTHER TEMPORARY EXHIBITIONS INCLUDED:

- The 10th annual *Trashformations* – middle school, high school and college student art made from recycled material.
- The Children's Natural History Gallery featured artwork created by elementary students to complement the *Grossology* and *ForEverglades* exhibitions. The gallery is a collaborative project with the Alachua County Public Schools Elementary Visual Arts Program.

This is an artist's rendering of the Dugout Canoes: Paddling Through the Ancient Americas exhibit the Museum is developing.

## IN DESIGN

Behind the scenes, several new exhibits were under development, including a new permanent Galleria installation featuring current science stories, new permanent additions to the McGuire Center exhibits, and a traveling exhibit titled *Dugout Canoes: Paddling Through the Ancient Americas*.





## EDUCATION

More than 46,000 visitors participated in the Museum's educational programming during 2008-09, including curriculum-based programs for students, teacher workshops and events, weekday and weekend children's classes, summer camps, lectures, school and community outreach programs, and public events ranging from temporary exhibition openings to annual events such as Collectors Day and ButterflyFest.



*Museum scientist Ann Cordell shares information about Native American pottery with children during a Discovery Room program.*

Museum education programs emphasize natural history topics, are designed based on the collection strengths and staff expertise, and developed in response to needs articulated by the Museum's various audiences. The Museum strives to engage diverse audiences and promote understanding of the processes and findings of science with its education initiatives. The education programs bridge the Museum's scientific research, fieldwork and collections to the public's interest and concern for Florida's past and future natural environments and cultural heritage.

## SCHOOL PROGRAMS

More than 16,000 pre-K through 12<sup>th</sup>-grade students, parents and teachers from 33 counties participated in educational programming at the Museum. Education staff and docents developed and implemented four new programs for K-12 students: Butterfly and Moth Explorations; Fossils - No Bones About It!; Trails in Time - Florida's Indian People; and Waterways and Wildlife of Florida. The programs include hands-on classroom activities as well as interactive walks through the Museum's exhibits and outdoor natural areas. Each program meets the new Florida Sunshine State Standards and was designed to be tailored for students of all ages. The Museum also offered three outdoor programs: Eye on

*(left) Educator Juniper DiGiovanni participates in teacher training for the Grossology exhibit.*

Insects, Green Machine and Stayin' Alive in UF's Natural Area Teaching Laboratory as well as self-guided visits in the Museum's permanent and temporary exhibits, including *Grossology: The Impolite Science of the Human Body* and the double feature *ForEverglades: Photos by Clyde Butcher & Jeff Ripple* and *Alien Attack: Target Everglades*.

Through a *Museums for America* grant from the Institute of Museum and Library Services, the Museum developed online educator guides for each of its permanent and temporary exhibitions ([www.flmnh.ufl.edu/education/resources.htm](http://www.flmnh.ufl.edu/education/resources.htm)). Education staff also developed and implemented several teacher workshops and hosted an Educators Open House with more than 20 north central Florida community partners ([www.flmnh.ufl.edu/education/workshops.htm](http://www.flmnh.ufl.edu/education/workshops.htm)).

## PUBLIC PROGRAMS

Nearly 30,000 adults and children participated in the Museum's public programs, including spring and summer camps, lectures, weekend and school holiday classes for kids, family day exhibition openings, and a preschool program for tots and parents. Adult classes ranged from Sunday afternoon lectures to workshops on butterfly photography and field trips to natural areas in north central Florida. The Museum's third year of expanded after-hours programming continued to grow in popularity. The *Can You Dig It?* event produced through a partnership with the UF Department of Geological Sciences drew more than 1,000 visitors. Annual events like Collectors Day, Earth Day, Trashformations and ButterflyFest also saw high attendance ranging from 1,000 to more than 5,000 visitors.

In an effort to make its fee-based programs accessible to all individuals, regardless of socioeconomic status, the Museum actively solicits contributions from individuals, corporations and foundations for its Admission Assistance Program. This program provided admission for 624 children and 310 adults as well as 75 camp and programming scholarships. While general admission to the Museum is free, there is an admission charge for the living Butterfly Rainforest exhibit and most temporary exhibits.

(right) Volunteers George Weems and Judy Lundquist from Lexington, Ky., search for hummingbird fossils during the 18th annual Thomas Farm fossil dig.



The Museum presented the popular after-hours public program *Can You Dig It?* with the UF Department of Geological Sciences.



## VOLUNTEER PROGRAM

More than 700 volunteers provided 31,217 hours to the Museum this past year. All Museum volunteers participate in enrichment programs including training on the permanent and temporary exhibits as well as effective techniques for engaging students in learning through objects and exhibits. From docents who work with visiting school groups to individuals working behind the scenes in Collections and Research, volunteers provide a wealth of knowledge, expertise and time to the institution and its visitors. The Museum's newest program for middle and high school students – Junior Volunteers – reached about 120 students again for the third year. Junior Volunteers are trained to work as interpreters in the Discovery Room, Butterfly Rainforest and temporary exhibitions, at discovery carts stationed throughout the Museum, and as classroom assistants during kids classes and summer camps.



## MARKETING & PUBLIC RELATIONS

The Marketing and Public Relations Department, including Photography and Media Services, continues to increase its assistance to internal and external audiences. This includes media, community and public relations, advertising, photography, audio-visual, media and filming requests for the Museum's Exhibits and Public Programs and Collections and Research divisions.

### HIGHLIGHTS INCLUDE:

- Converted the Museum's temporary press kits from print to electronic format, saving printing and postage costs as well as contributing to the University of Florida's "green" efforts.
- Increased the Museum's online presence by establishing Twitter and Facebook accounts, publishing 22 new "Science Stories" on the Museum's web site and coordinating Museum announcements on the myUFL portal splash page.
- Fulfilled 3,244 work orders and information requests from internal and external audiences, including members of the media.
- Produced 102 science stories, press releases and media advisories and 134 print, broadcast and online advertisements and public service announcements for various Museum programs and research activities.
- Received and tracked 728 media hits for the Museum, with a readership of more than 550 million.
- Coordinated and produced the Museum's four pages for 10 issues of Natural History magazine, completed a new general Museum brochure as well as other support material for various departments.
- Distributed Museum brochures and exhibit rack cards at more than 750 locations on interstates 4, 10, 75 and 275 and on U.S. 19 throughout central and north central Florida as well as in AAA offices across the state and at all Florida Turnpike service plazas and Florida welcome centers.

## AWARD WINNERS

**Gainesville Ad Fed ADDY Awards**  
 Gold - Life on Earth brochure.  
 Silver - Butterfly Rainforest billboard, Grossology TV spot and 2006-07 Annual Report.

**UF Golden Gator Awards**  
 Gold - Life on Earth brochure, *Megalodon: Largest Shark that Ever Lived* Campaign and *Grossology* TV spot.

**Florida Public Relations Association North Central Fla. Image Awards:**  
 Award of Distinction - *Megalodon: Largest Shark that Ever Lived* Campaign.  
 Grand Image Award - *Megalodon: Largest Shark that Ever Lived* Members Preview Invitation.  
 Grand Image Award and Judges Award - 2008 ButterflyFest E-newsletter.

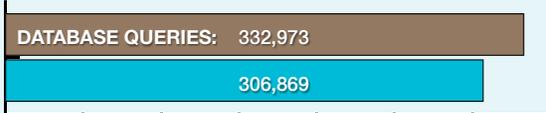
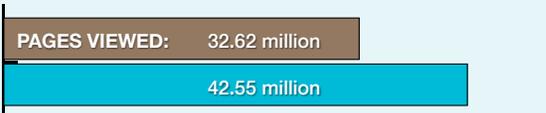
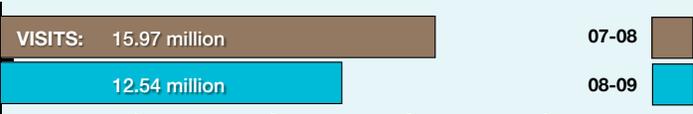
**Florida Public Relations Association Golden Image State Awards**  
 Judges Award - 2008 ButterflyFest.  
 Award of Distinction and Judges Award - *Megalodon: Largest Shark that Ever Lived* Campaign.  
 Award of Distinction and Judges Award - *Megalodon: Largest Shark that Ever Lived* Tuna Pouch.  
 Grand Golden Image Award - 2008 ButterflyFest E-newsletter.

## OFFICE OF MUSEUM TECHNOLOGY

The Office of Museum Technology moved from McGuire Hall into a more spacious office in Powell Hall with better workbench facilities. The new office will allow more efficient operation and provides space for staff to work more regularly in the McGuire/Powell facility.

### MAJOR PROJECTS FOR THE YEAR INCLUDE:

- Established the museum-wide Storage Area Network and backup system and began moving divisions to the central resource.
- Began or completed more than 30 web and database projects in support of nearly every department within the Museum including Collections and Research, Exhibits and Public Programs and the Director's Office.
- Started proactive, twice-daily scans of the Museum domain to search for malicious viruses, worms or other software.
- Completed more than 1,400 help desk requests.



## WEB SITE

The Museum web site contains more than 30,000 pages with more than 40 contributors. The site recorded more than 12.5 million visits last year, and online databases received more than 300,000 queries.

## CENTER FOR INFORMAL SCIENCE EDUCATION

After several years working on the research and development of a variety of science resource materials, 2008-09 efforts were directed to dissemination.

### HIGHLIGHTS:

*Marvelous Explorations through Science and Stories*, an early childhood science curriculum resource, was utilized in Head Start programs in Alachua, Marion and Citrus counties, with Museum staff providing classroom support and training in Marion and Citrus counties. *MESS* training also was offered at a regional early childhood education conference, and Betty Dunckel and Shari Ellis presented a national *MESS* webinar sponsored by the federal Office of Head Start. The resources and webinar will be available on the Museum and Early Childhood Learning and Knowledge Center Office of Head Start web sites, ([www.flmnh.ufl.edu](http://www.flmnh.ufl.edu)) or (<http://eclkc.ohs.acf.hhs.gov/hslc>).

Shari Ellis served as Senior Advisor on Early Childhood for the Office of Head Start in Washington, D.C. During this year-long, half-time appointment, she helped create a webcast series that provides an overview of how children learn science from birth to 5 years of age. The series aired to Head Start programs nationwide and featured Betty Dunckel discussing the importance of museums and other informal learning institutions for science learning, and Florida Museum staff working with Head Start children on field trips to the Museum. The Early Childhood Learning and Knowledge Center web site, (<http://eclkc.ohs.acf.hhs.gov/hslc/resources/cinema/ScienceWebcast.htm>), will include the webcasts and support materials.



*Project Butterfly WINGS: Winning Investigative Network for Great Science* was accepted as only the second National 4-H Science, Engineering, and Technology curriculum. The new initiative seeks to engage



1 million new youth in science, engineering and technology programs over the next few years. *WINGS* engages 4-H youth in investigations of the distribution and population trends of common butterflies and helps develop science inquiry and life skills. The Museum and UF's Institute of Food and Agricultural Sciences Extension developed the program with funding from a National Science Foundation grant.

The National 4-H Afterschool Taskforce Curriculum Sub-committee also recommended *WINGS* as one of 11 suggested afterschool curricula for elementary children.

The popular *Florida Wildflowers and Butterflies* brochure was reprinted a third time with a \$13,872 grant from the State of Florida, Florida Wildflower Foundation, Inc. A collaborative project of the Florida Museum and UF's Institute of Food and Agricultural Sciences, the brochures are available at the Museum and distributed statewide through various organizations. The Museum web site, ([www.flmnh.ufl.edu/wildflower/books.asp](http://www.flmnh.ufl.edu/wildflower/books.asp)), includes a printable PDF of the brochure.

A new three-year 21<sup>st</sup> Century Museums Professionals Grant of \$365,229 from the Institute of Museum and Library Services will provide five Imperiled Butterfly Conservation and Management training workshops for 35 participants. Led by the McGuire Center's Jaret C. Daniels, the program is a collaborative project with the Chicago Academy of Science's Peggy Notebaert Nature Museum, Oregon Zoo, Toledo Zoo, Fairchild Tropical Botanic Garden, Association of Zoos and Aquariums and Butterfly Conservation Initiative.

(above and lower left) Area school children take an active role in learning using the Project Butterfly WINGS curriculum.



The Museum printed the popular *Florida Wildflowers and Butterflies* brochure a third time through a grant from the State of Florida, Florida Wildflower Foundation, Inc.

# Support the Museum

## MUSEUM ASSOCIATES LEVELS:

	Membership:	MembershipPlus:
Student	\$25	
Individual	\$50	\$70
Dual	\$75	\$110
Family	\$100	\$150
Supporting	\$150	\$200
Explorer	\$250	\$300

## CURATORS SOCIETY:

Benefactor	gifts of \$500 and above
Fellow	gifts of \$1,000 and above
Patron	gifts of \$2,500 and above
Director's Circle	gifts of \$5,000 and above

## For additional information please contact:

### Gifts and Corporate Sponsorship:

Josh McCoy, Director of Development, 352-273-2086

**Membership:** ([www.flmnh.ufl.edu/membership](http://www.flmnh.ufl.edu/membership)) Leslie Ladendorf, Membership Coordinator, 352-273-2047

## MEMBERSHIP



Every gift to the Florida Museum of Natural History – whether of time, resources or collections – enhances and expands all of its activities and thus the quality of the visitor experience. There are a variety of ways to contribute to the Museum and its mission, and participation is welcomed at any level.



*The Florida Museum Associates Board presented the Passport to La Florida fundraiser March 6, 2009.*

The Florida Museum's members form the core of its support and are important program participants and community advocates. Museum membership increased 11 percent during 2008-09 due to the success of the MembershipPlus program, which includes unlimited free admission to the Butterfly Rainforest exhibit. Also, for the first time in Museum history, Associates memberships totaled more than 900.

Memberships support all areas of the Museum as well as the members special events and exhibit sneak previews, which included *Grossology: The Impolite Science of the Human Body*, the Everglades double feature of *ForEverglades: Photos by Clyde Butcher & Jeff Ripple* and *Alien Attack: Target Everglades*, as well as *Amazing Butterflies*.

The Museum also offered a **TASTES, tunes & treasures** VIP Open House featuring the Vertebrate Paleontology collections. Guests viewed a selection of the finest specimens of vertebrate fossils from Dickinson Hall and interacted with curators, staff and graduate students.

The Associates Board along with Museum staff produced the annual fundraiser *Passport to La Florida* on March 6, 2009. Board members, community sponsors, host committee members and other attendees raised more than \$45,000 to fund Museum research and programs while enjoying an evening of creative costumes, Florida inspired decorations, dancing and native Florida cuisine.



*Tastes, Tunes & Treasures featured the Vertebrate Paleontology collection.*

## DEVELOPMENT

Private gifts provided the margin for excellence at the Florida Museum of Natural History during the 2008-09 fiscal year. During a difficult time of state budget cuts and in the midst of the worst U.S. economy in more than 50 years, the Museum had a record-breaking fundraising year thanks to the generosity of private donors who believe in the importance of the Museum's mission of understanding and preserving life on earth.

The Florida Museum received a gift from Dr. William and Nadine McGuire valued at more than \$41 million. This gift, which is a combination of more than 2.2 million butterflies from around the world and a cash contribution to help curate the growing Lepidoptera collection, is the highest-valued gift the University of Florida has received to date. The amazing collection greatly expands the Museum's ability to study and represent the biodiversity of life on earth. The gift also catapulted the Museum past its original Florida Tomorrow capital campaign objective of \$30 million, making the Museum the first campus unit to surpass its goal.

The Museum also received a deferred gift from Mrs. Carol A. Crevasse that will establish an endowment to support the Museum's exhibits program. The bequest established Mrs. Crevasse as a charter member of the Museum's Legacy Society – a society established to recognize donors who have made provisions in their estate plans to benefit the Museum.



This fossil from Peru is a new species of white shark.



(above left) Lepidoptera Curator Jackie Miller was named a fellow of the Entomology Society of America. (above right) These Colias sulphur butterflies are included in the gift of more than 2 million Lepidoptera specimens from Dr. William and Nadine McGuire.



Additional notable gifts include a unique fossil shark specimen from Dr. Gordon and Catherine Hubbell, a beautiful addition to the ethnography collection of native American artifacts from I.S.K. and Sara Reeves, a bequest of Lepidoptera from Brad and Rebecca Stirn and various donations to support the Powell Hall expansion and renovation project.

Despite the Museum's success, there is work to be done. The priorities identified at the outset of the capital campaign are needed now more than ever. These include endowments to support faculty, students, research and collections, and exhibits and public programs; and capital to build new facilities.

The Museum's collections continue to grow, intensifying the need for space to house them and the faculty and staff to curate them. Increased competition for outstanding graduate students has produced a need for more scholarships and fellowships, and world-class faculty members require endowments that will enable them to continue their groundbreaking research.

The Florida Museum is extremely thankful for the support of friends, donors and volunteers who believe in the Museum and its mission. The growth experienced during the fiscal downturn is an incredible vote of confidence in the Museum, and private gifts will continue to play a vital role in the Museum's future success and growth.



UF President Bernie Machen, left, and wife Chris enjoy the Museum's Club Aloha friend raiser event with University of Hawaii at Manoa Chancellor Virginia Hinshaw and husband Bill.

**For more information about the new Legacy Society or other ways to support the Florida Museum of Natural History, please contact Josh McCoy in the Museum Development Office, 352-273-2086.**



Philippine woodpecker tree snail, *Chloraea dryope*

# Honor Roll 2008-09

## \$1 MILLION OR MORE

Carol Crevasse  
Lockwood Charitable Foundation, Inc.  
James Lockwood, Jr. (d)  
William & Nadine McGuire  
Jon & Beverly Thompson

## \$500,000 OR MORE

Bradley & Rebecca Stirn

## \$100,000 OR MORE

Anonymous  
Barbara Denno  
Gordon & Catherine Hubbell  
I.S.K. & Sara Reeves  
Carol & Stephen Shey  
Southeastern Funding Partners LLP  
Rick & Aase Thompson

## \$50,000 OR MORE

Anonymous  
William Hamm  
John & Peggy Kirkpatrick  
Barbara & Reed Toomey

## \$25,000 OR MORE

Francis & Miranda Childress  
Foundation, Inc.  
Charles Jeremiah & Marla Moore  
John & Melissa Jeremiah  
Michael Jeremiah & Barbara Moore  
Lewis & Frances Lee  
Annette Perry  
James & Lori Toomey

## \$10,000 OR MORE

AEC Trust  
Anonymous  
David (d) & Mary Ann Cofrin  
Gladys Cofrin  
Darby & Darby PC  
Janis Eiler  
Lois Eiler  
Florida Biodiversity Foundation, Inc.  
Gainesville Community Foundation  
Greathouse Butterfly Farm  
Zane Greathouse  
Maple Hill Foundation  
Josephine Nixon  
Shands at the University of Florida

## \$5,000 OR MORE

Clark & Carolyn Adams Foundation  
John Bowe  
Chris & Gayle Bundschu  
Community Foundation of New Jersey  
Charles & Elizabeth Covell  
John & Gretchen Coyle  
Charles & Wanda Denny  
Charles H. Denny III Charitable Lead Trust  
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Hamilton Upchurch, Sr. (d)  
Susan Upchurch  
Taryn & Tracy Upchurch  
Visit Florida  
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Graig & Kris Shaak  
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Donald Cyzewski  
Nick Davis & Sergio Marentes  
Joshua & Sally Dickinson  
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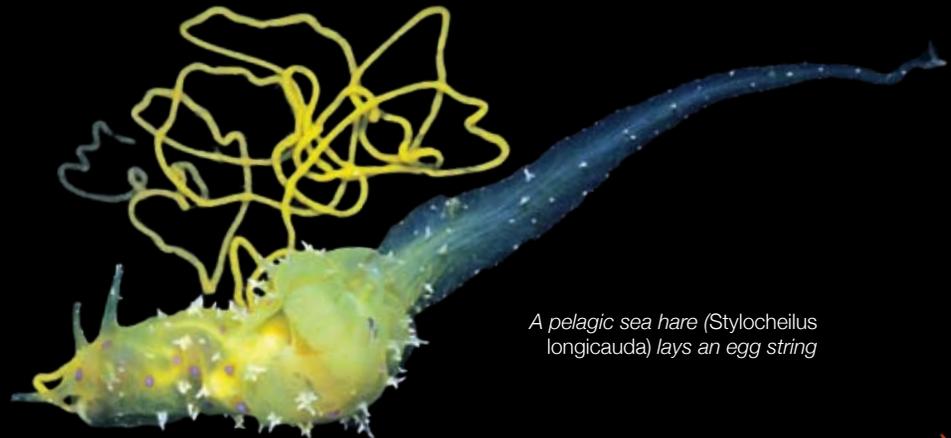
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 J. C. Dickinson, Jr.  
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*A pelagic sea hare (Stylocheilus longicauda) lays an egg string*

# Publications

JULY 1, 2008 THROUGH JUNE 30, 2009

## PEER-REVIEWED AND OTHER SCIENTIFIC PUBLICATIONS:

Allen, J.M., J.E. Light, M.A. Perotti, H.R. Braig, and D.L. Reed. 2009. Mutational meltdown in primary endosymbionts: Selection limits Müller's Ratchet. *PLoS One* 4:e4969.

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Anker, A. 2008. The alpheid shrimp genus *Leptalpheus* Williams, 1965 in the southwestern Caribbean Sea, with description of one new species from Panama (Crustacea: Decapoda). *Zoosystema* 30:781-794.

Anker, A., C. Hurt, and N. Knowlton. 2009. Description of cryptic taxa within the *Alpheus bouvieri* A. Milne-Edwards, 1878 and *A. hebes* Kim and Abele, 1988 species complexes (Crustacea: Decapoda: Alpheidae). *Zootaxa* 2153:1-23.

Anker, A. and I.N. Marin. 2009. The alpheid shrimp genus *Leptalpheus* Williams, 1965 in the tropical western Pacific, with descriptions of two new species (Crustacea: Decapoda: Caridea). *Raffles Bulletin of Zoology* 57:91-107.

Austin, G.T. 2008. Hesperidae of Rondônia, Brazil: A new genus and species of Carcharodini (Pyrginae). *Bulletin of the Allyn Museum* 158:1-7.

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Austin, G.T., B.M. Boyd, and D.D. Murphy. 2008. *Euphilotes ancilla* (Lycaenidae) in the Spring Mountains, Nevada: More than one species? *Journal of the Lepidopterists' Society* 62:148-160.

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Austin, G.T. and A.D. Warren. 2008. An aberrant *Urbanus teleus* (Hübner, 1821) (Hesperiidae: Eudaminae). *News of the Lepidopterists' Society* 50:40-41.

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Banks, R.C., R.T. Chesser, C. Cicero, J.L. Dunn, A.W. Kratter, I.J. Lovette, P.C. Rasmussen, J.V. Remsen, Jr., J. A. Rising, D.F. Stotz, and K. Winker. 2008. Forty-ninth supplement to the American Ornithologists' Union checklist of North American birds. *Auk* 125:758-768.

Beaman, R. and N. Cellinese (project leaders). 2009. Web database and web services: HERBIS. Automated data capture for herbarium specimens, funded by NSF. ([www.herbis.org](http://www.herbis.org)).

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Blanco, M., A.G. Carnevali, W.M. Whitten, R. Singer, S. Koehler, N.H. Williams, I. Ojeda, K. Neubig, and L. Endara. 2008. Generic realignments in Maxillariinae (Orchidaceae): Corrigenda et addenda. *Lankesteriana* 8:15.

Borsch, T. and P.S. Soltis (eds.). 2008. *Biology and Evolution of Nymphaeales*. Special issue of *Taxon*, based on a symposium at the International Botanical Congress, Vienna, 2005.

Boyer, D.M. and J.I. Bloch. 2008. Evaluating the Mitten-Gliding hypothesis for Paromomyidae and Micromomyidae (Mammalia, Plesiadapiformes) using comparative functional morphology of new Paleogene skeletons. pp. 233-284 in E.J. Sargis and M. Dagosto, eds. *Mammalian Evolutionary Morphology: A Tribute to Frederick S. Szalay*. Springer, Dordrecht, Netherlands.

Brockington, S.F., R. Alexandre, J. Ramdial, M.J. Moore, M.A. Gitzendanner, A. Dhingra, D.E. Soltis, and P.S. Soltis. 2009. Phylogeny of the Caryophyllales *sensu lato*: Revisiting hypotheses of pollination biology and perianth differentiation in the core Caryophyllales. *International Journal of Plant Sciences* 170:627-643.

Brockington, S.F., E. Mavrodiev, J. Ramdial, A. Dhingra, P.S. Soltis, and D.E. Soltis. 2008. Keep the DNA rolling: Multiple displacement amplification for the maintenance of archival plant DNA extracts. *Taxon* 57:1-5.



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The orange streaks in this soft coral (*Scleronephthya*) are skeletal rods that support it.

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Executive Secretary – Sharon K. Thomas

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Membership Coordinator – Leslie L. Ladendorf  
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Network Manager – Matthew J. Collins  
Daniel F. Stoner  
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Olusegun Yayi/Timothy J. Talley  
IT Expert – Hilary F. Miller

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Assistant to Chair & Anthropology Registrar –  
Elise V. LeCompte  
Facilities Manager – George D. Hecht  
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Collection Manager – Robert H. Robins  
Biological Scientist – Griffin E. Sheehy  
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Tuuli E. Makinen, Ph.D.

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Assistant Curator – Nicoletta Cellinese, Ph.D.  
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Katarzyna Rachwal  
IT Specialist – Gregory H. Traub  
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Haijun Zhu, Ph.D.

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Museum Operations Specialist – Sean W. Roberts

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WINGS Program Coordinator – Kathy C. Malone  
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MESS Education Coordinator – Domenic J.  
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Photographer – Jeffrey L. Gage

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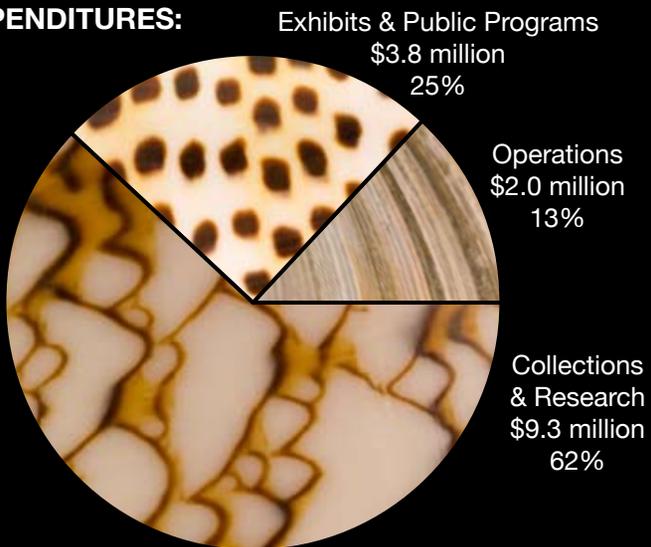
Operations Coordinator – Kurt Auffenberg  
Artisan – Ronald A. Chesser  
Carpenters/Cabinet Makers – J. Patrick Bennett  
Nathan R. Bruce  
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Associate Scientist Emeritus – L. Richard Franz, Jr.  
Curator Emerita – Elizabeth S. Wing, Ph.D., NAS  
Curators Emeriti – Carter R. Gilbert, Ph.D.  
F. Wayne King, Ph.D.  
Jerald T. Milanich, Ph.D.  
Charles A. Woods, Ph.D.  
Distinguished Research Curator Emeritus –  
S. David Webb, Ph.D.

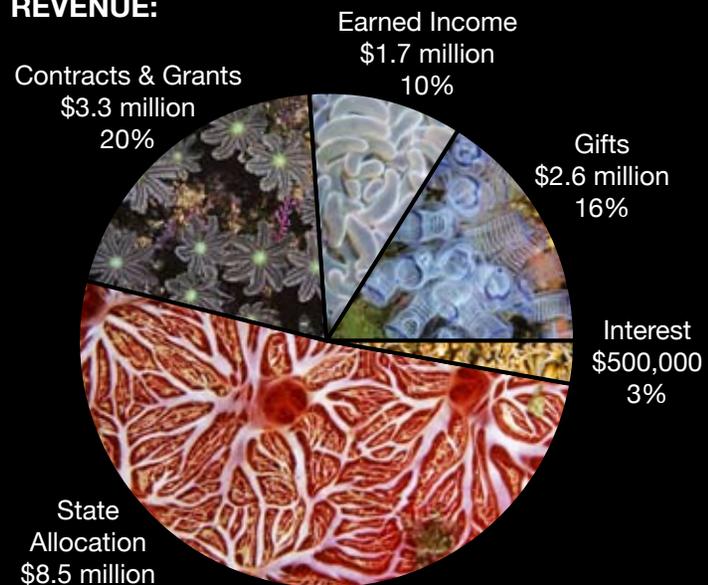
# FY 2008-09 Financials

## EXPENDITURES:



**Total: \$15.1 million**

## REVENUE:



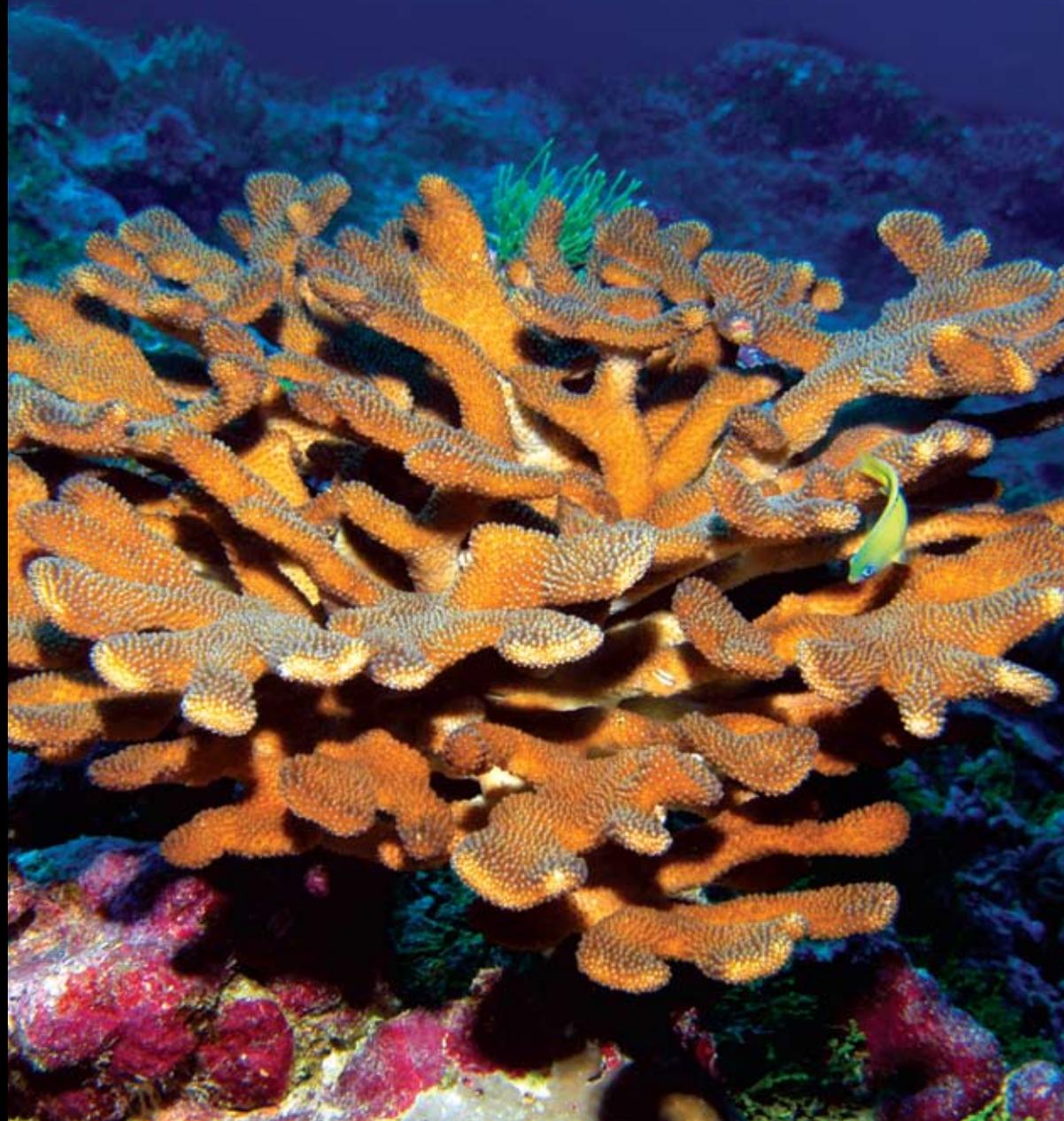
**Total: \$16.6 million\***

\* Includes \$1.5 million in multi-year grant funds and gifts to endowment.

*A cauliflower coral, Pocillopora woodjonesi, in Moorea, French Polynesia.*

*The ocean ... like the air, is the common birth-right of mankind.*

— Thomas Jefferson





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