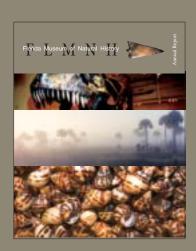
Florida Museum of Natural History





The Florida Museum of Natural History is Florida's state museum of natural history, dedicated to understanding and preserving biological diversity and cultural heritage.



Cover photos:

Projectile point by Scott Mitchell
"A *T. rex* Named Sue" by Jeff Gage
"Morning in Florida" by Steve Vaughn
Florida tree snails, *Liguus fasciatus*, by Jeff Gage

A Message

The Florida Museum of Natural History will remember 2001-2002 for many reasons. After years of planning, we finally began the enormous task of shifting collections to the renovated spaces in Dickinson Hall that were vacated by the exhibits program when it moved to Powell Hall. This process will continue well into next year. In the fall of 2001 we presented the seventh and eighth Carr Medals to Drs. Jay Savage and our own John Eisenberg, two very distinguished scientists.

Our education staff expanded dramatically as Dr. Betty Camp was successful in attracting substantial external funding to develop several exciting educational initiatives. The events of September 11th had a palpable impact on us all, but we found a way to respond as an institution and reached out to support relief operations in New York City. Finally, our programming plans for both the research and education aspects of the McGuire Center for Lepidoptera and Environmental Research accelerated this year with construction of McGuire Hall slated to begin in 2003.



Despite all of these notable occurrences, many will remember 2001-2002 as the year that "A T. rex Named Sue" visited Gainesville. Featuring a replica of the largest, most complete *Tyrannosaurus rex* skeleton ever found, this traveling exhibit from Chicago's Field Museum thrilled audiences at the museum from January-May.

"Sue" came to Gainesville as part of a joint project between the Florida Museum of Natural History and the Gainesville Chamber Orchestra which performed the companion piece "Tyrannosaurus Sue: A Cretaceous Concerto." The Alachua County Commission supported this joint project with a grant from Tourist Development Destination Enhancement funds.

The "Sue" project was a tremendous success. Each concert was well received and 90,529 visitors flocked to see Sue during her four-month visit, shattering all previous museum attendance records. Almost 40,000 of the visitors were children.

Apart from the obvious educational and cultural benefits, the greatest impact of the "Sue" project upon the local community was economic. An independent survey of museum visitors to "Sue" revealed that 44 percent were from Alachua County and 56 percent were tourists. The survey estimates total spending in Alachua County by "Sue" visitors to be \$2.3 million. Considering that the museum's share of county tourist development funds for this project was \$35,000, that's an impressive return on investment!

Admittedly, "Sue" was one of the most successful exhibitions that the Florida Museum of Natural History has presented. But let's not forget that annually the museum provides jobs for about 200 full- and part-time employees and spends more than \$5 million on goods and services, most of it locally.

It is well known that museums across the country are very popular, experiencing record attendance. However, it's a fairly well kept secret that museums are also good for business. In these uncertain economic times, when

> everyone is looking for a good investment, I urge you to invest in the Florida Museum of Natural History. Educationally or economically, our return on investment is hard to beat.

> > Douglas S. Jones, Ph.D.

Director, Florida Museum of Natural History

AND RESEARCH

COLLECTIONS



FLORIDA PROGRAM FOR SHARK RESEARCH

The Florida Program for Shark Research, led by program director and Ichthyology web editor George Burgess, studied shark systematics, conservation, fishery management, life history and shark attacks. The program received federal funding as part of the National Shark Research Consortium, a team of four institutions active in shark research. Funding from the International Union for Conservation of Nature and Natural Resources Shark Specialist Group allowed the research program to place additional emphasis on its webbased educational initiatives.

The Commercial Shark Fishery Program, supported for the ninth consecutive year by the U.S. Department of Commerce, sent observers to sea aboard commercial fishing vessels to gather biological data needed for fishery management and conservation of East Coast sharks.

Burgess organized a Sea Grant-funded national conference, "Sharks in Perspective," and was a featured "expert" at a National Marine Fisheries Service press briefing at the National Press Club.

The International Shark Attack File was extremely active, documenting and studying shark attacks as well as consulting with beach officials and treating physicians.

LATIN AMERICAN ART AND ARCHAEOLOGY

Curator Susan Milbrath completed a three-year project studying archaeological material from Mayapan, Mexico's last Maya capital. The project has resulted in a number of publications co-authored with Carlos Peraza of the Instituto Nacional de Antropologia e Historia, the director of excavations at the site. Activity in the Florida Museum's Latin American collection includes an on-going project to create an electronic database for the public.

Milbrath also is preparing an exhibit on the Pearsall collection, part of the museum's extensive North American ethnographic collection, opening at Powell Hall in March 2003. The museum recently received funding from Massachusetts Institute of Technology to place about 150 objects from the Pearsall collection on its museum loan network site.

Museum Studies

Curator Charlotte Porter is working with the College of Fine Arts to develop the University of Florida's new Museum Studies Program, leading to a three-year master's degree. She and graduate students submitted a proposal to the Getty Museum Research Fund to enhance this effort.

Porter continues to teach in the university's Honors Program. She is developing an international project on William Bartram with UF Library staff, Alecto Historical Editions, England and the Bartram Trail Conference of which she is a Florida director.

After a successful statewide tour, an exhibit on 18th-century naturalist Mark Catesby, which she helped fund and curate, and for which she wrote a catalog essay and served as guest speaker, was in Gainesville at the Thomas Center during spring 2002.

Environmental Archaeology

Kitty Emery, assistant curator of Environmental Archaeology, was hired in July 2001 to replace Elizabeth Wing who retired to become curator emeritus.

Wing's innovative research in zooarchaeology, the study of ancient animal remains from archaeological sites, was a pillar of the museum for nearly 40 years and will be honored in an upcoming volume of the "Bulletin of the Florida Museum of Natural History."

Emery's research combines zooarchaeology with the study of ancient plants and land-scapes. She is investigating the complex relationship between the ancient Maya and their environments at Guatemalan sites such as Piedras Negras, Aguateca and Motul de San Jose.

Collection manager Sylvia Scudder's analyses of soils at archaeological sites in Florida, Puerto Rico and the Turks and Caicos Islands have provided evidence for cultural change, global climatic change and sea-level rise.

Irvy Quitmyer, collection manager and specialist in zooarchaeology, served as the Miami Circle project zooarchaeologist. Miami Circle is located at the mouth of the Miami River near the likely spot where Ponce de Leon first encountered the Tequesta Indians in 1513. Quitmyer and graduate student Erin Thornton have submitted an article on their findings to the "Florida Anthropologist." Their work focused on Native American use of the environment and evidence for anthropogenic change in the local environment.

Donna Ruhl is working with assistant scientist Karen Walker to estimate the ancient environments of South Florida through archaeological and archaeobotanical research at more than 180 sites in Everglades National Park. Ruhl also continues her research on the ancient Newnan's Lake canoes that have been exposed by dropping water levels over the past several years.

FLORIDA ARCHAEOLOGY

The past year has seen considerable work in upgrading the museum's Florida human osteology and Florida archaeology research collections, both of which are the most comprehensive in the world.

Working with curators Jerald Milanich and William Marquardt, collection manager Scott Mitchell's reorganization of the osteology collection has made it more accessible to the many researchers who come to Gainesville from as far away as Italy to study the specimens.

Mitchell also coordinated formation of a Florida archaeology type collection containing examples of pre-Columbian artifacts made of steatite, greenstone, mica, galena, shell, bone, antler and other materials. Together with the Florida ceramic type collection maintained by Ann Cordell in the museum's Ceramic Technology Laboratory, these unique resources enhance the Florida Museum as a research and education center. They provide, for example, important hands-on experience for numerous undergraduate and graduate student interns from the University of Florida, as well as from universities in Massachusetts and Oklahoma.

ALLYN MUSEUM OF ENTOMOLOGY

Curators Jackie and Lee Miller devoted a lot of effort to the development of plans and exhibits for the McGuire Center for Lepidoptera and Environmental Research.

The museum also hosted a number of researchers studying butterflies and moths, including Bernard Hermier (French Guiana), Steve Collins (Kenya), Roger Bristow (England), Andre Freitas (Brazil) and Keith Brown (Brazil).

The Millers continued to work with a number of graduate students worldwide.

The museum also continued its liaison with undergraduate students at New College by providing access to collections to learn and perfect techniques in systematics and curation.

The Millers hosted tours for the two local chapters of the North American Butterfly Association and worked on various projects including butterfly surveys of the Bahamas.

Jackie Miller continued her survey work of the butterfly populations on the Carleton Reserve in southern Sarasota County following the three years of major drought and subsequent burn within the reserve.

CARIBBEAN ARCHAEOLOGY

Between October 2001 and March 2002, curator William Keegan spent nine weeks excavating the Paradise Park sites in southwestern Jamaica, with the assistance of Earthwatch volunteers. The sites provide important new evidence on changes in Jamaica's physical and cultural environments between the ninth and 15th centuries.

In an effort to initiate new fieldwork, Keegan also completed one week of reconnaissance, in collaboration with the University of Indiana, in Parque Nacional del Este, Dominican Republic, in November 2001. Collaborative agreements have been signed with the Museo del Hombre Dominicano, and it is hoped that research will commence in 2003.

In May 2002, the Florida Association of Voluntary Agencies for Caribbean Action, Florida Department of State, sponsored a two-week workshop on cultural heritage management in St. Lucia. The panel was composed of Keegan, Anne Stokes of Southeastern Archaeological Research, Inc. and Florida State Archaeologist Jim Miller. The workshop is the basis for the reorganization of heritage responsibilities on the island. Following the workshop, Keegan completed two weeks of archaeological prospecting in St. Lucia with Drs. Corinne Hofman and Menno Hoogland of Leiden University at the invitation of the St. Lucia Archaeological and Historical Society.

MOLECULAR SYSTEMATICS AND EVOLUTIONARY GENETICS

In February 2002, curator Pamela Soltis and professor
Douglas Soltis, from UF's Botany Department, moved into the new Laboratory of
Molecular Systematics and Evolutionary
Genetics in Dickinson Hall. Their work
focuses on the phylogeny and diversification of
flowering plants.

The Soltises and their collaborators have identified the genus *Amborella*, a shrub restricted to cloud forests on New Caledonia, and water lilies as the basal branches of the evolutionary tree of flowering plants. This information was critical in designing the National Science Foundationsponsored Floral Genome Project, which seeks

to identify the genes responsible for the evolution of the flower and diversification in key floral features such as petal appearance, symmetry and arrangements of floral organs.

Post-doctoral associates Sangtae Kim and Matyas Buzgo are studying patterns of development and gene expression in flowers of basal angiosperms.

With Florida Museum collaborators Steve Manchester, David Dilcher and post-doctoral associate Hongshan Wang, plus colleagues at Duke University, the Soltises have begun integrating living and fossil members of the hickory family into a single phylogenetic tree using both molecular and morphological characters, with an eye to expanding this sort of analysis to all flowering plants.

Post-doctoral associate Jennifer Tate is studying gene expression in two polyploid species of goatsbeard (*Tragopogon*, sunflower family) that formed in the early 1900s.

Collection manager and botany assistant scientist Matt Gitzendanner is measuring genetic diversity in the rare Florida endemic plant *Ziziphus celata*. This information is being used by biologists at Archbold Biological Station to plan re-introductions of the species into natural areas.

Studies by sabbatical visitor Luiz Oliveira from the University of Vicosa in Brazil and graduate student Christy Edwards on the phylogeny and genetic diversity

of rare Florida species also have provided information beneficial to conservation efforts.

MALACOLOGY

Staff research efforts the past year spanned terrestrial, freshwater and marine habitats.

Collection manager John Slapcinsky initiated an expedition-based effort to document the land snails of Papua New Guinea and curator Fred Thompson published several papers on the land and freshwater snails of North and Central America, including a revision of his monograph on Florida's diverse aquatic snails.

Research associate Ken Emberton named about 200 new species of land snails from Madagascar, a hotspot for endangered biodiversity.

Molecular phylogenetic and biodiversity studies continued in the Indo-Pacific by graduate student Lisa Kirkendale, post-doctoral associate Chris Meyer, and assistant curator Gustav Paulay, with field work in Palau, Guam, Fiji, Cook Islands and French Polynesia.

The 30,000 lots added to the collection include material from new field surveys and the Madrid Keeler and Adelaide Davis collections. The Florida Museum collections were expanded to include marine invertebrates other than mollusks, a muchneeded development given that Florida has the longest coastline in the lower 48 states.

PALEOBOTANY

Flowering plants constitute most of the world's plants and are our major food source. Most of the world's agriculture is based upon their products.

An evolutionary mystery involves the early or ancestral group of flowering plants that radiated to produce the great diversity we know today. Graduate Research Professor David Dilcher is studying the earliest flowering plants in the fossil record, about 115 million years old from China and Brazil, and 100 million years old from the midwestern United States. These plants can be identified not by flowers but by the fact that they enclose the ovules, which later become seeds, inside a closed carpel, which later becomes the fruit. These plants also have clustered carpels at the top of upright shoots and have the pollenbearing organs below them, an organization seen in modern flowers. These plants appear to be aquatic and herbaceous. This is particularly interesting because molecular data suggest that the water lilies group may be the most primitive of all living flowering plants today.

Dilcher and colleagues also have been investigating the best way to use fossil plants to estimate paleoclimate.

SOUTH FLORIDA ARCHAEOLOGY

Under the direction of curator William Marquardt, a revised and expanded web site for South Florida Archaeology and Ethnography is now available at www.flmnh.ufl.edu/sflarch/.

The Hall of South Florida People and Environments in Powell Hall neared completion, and opened to the public Oct. 5, 2002. A companion book to the exhibit, authored by Darcie MacMahon and Marquardt, is in press.

Marquardt and assistant scientist Karen Walker are nearly finished with a comprehensive monograph reporting recent archaeological research at the Pineland site complex.

At the Randell Research Center at Pineland, grants from private sources, led by the Stans Foundation, were matched by the State of Florida for construction of a teaching pavilion, public restrooms and parking area, beginning in 2003.

John Worth, the Randell Research Center's new coordinator of research programs and services, did archival research in Spain and Cuba.

A new giving society, the "Friends of the Randell Research Center," began operating in 2002 and already has more than 250 members.

HISTORICAL ARCHAEOLOGY

Historical Archaeology program activities included a fifth field season at the site of St. Augustine's original settlement - Pedro Menéndez's fort and camp of 1565-66. The site is located today on the grounds of the Fountain of Youth Park tourist attraction in St. Augustine. During the 2002 season archaeologists uncovered and are now able to define a very large oval or hexagonal building that is thought to have been the first fort. Nearly 100 feet in diameter, it was originally a Timucua Indian council house, taken over by the Spaniards in 1565 as their fort and burned by the Indians a year later. More than 2,000 new specimens were accessioned as a result of the excavations.

The Historical Archaeology program also launched a major "virtual exhibit" on the people and artifacts of Spanish St. Augustine - more than 1,000 objects, historical images and historical figures are featured in this on-line exhibit, found at www.flmnh.ufl.edu/ staugustine/. It is the culmination of a two-year project by the Historical Archaeology Program in collaboration with the Florida Department of State and the City of St. Augustine, to catalog, curate and exhibit the archaeological remains from St. Augustine.

Historical Archaeology field programs at La Isabela and Concepción de la Vega in the Dominican Republic were concluded in 2002 with the publication of two books on those excavations: "Columbus's Outpost among the Taíno;" and "Archaeology at America's first European town," Yale University Press. These sites were the first two settlements established by Christopher Columbus in America, in 1493 and 1495, respectively. More information can be found at www.flmnh.ufl.edu/histarch/.

Invertebrate Paleontology

Collection manager Roger Portell and his staff continued to curate the large collections received from the Florida Geological Survey and Tulane University, along with invertebrate fossils they collected from Florida and the Caribbean. Nearly 35,000 specimens were cataloged into the collection this year.

In October 2001, Portell and colleagues studied the paleontology and geology of Carriacou, Grenadines and the Lesser Antilles. Funded by the National Geographic Society, their work centered on beautifully exposed but understudied coastal strata, such as the Grand Bay Formation, which yielded many unreported Miocene species of brachiopods, mollusks, echinoderms, crabs and trace fossils.

In February 2002, Portell, assisted by George Hecht and Reed Toomey, concluded excavation of a small chalk pit near Discovery Bay on Jamaica's north coast. Here, 16 soon-to be-published fossil species of coral-associated crabs were collected. All are recorded for the first time as fossils in the Caribbean.

Curator Douglas Jones traveled with museum colleagues and friends to Panama in early January to visit the Smithsonian Tropical Research Institute. He also visited the over-wintering sites of the monarch butterfly in the mountains of Mexico with Tom Emmel and friends of the museum's McGuire Center for Lepidoptera and Environmental Research. Later in the year, Jones taught a course on International Issues in World Museums with the director of the Museum Studies Program at Florida State University. Offered through the Office of International Programs at FSU, participants in this course visited museums in Spain and England during the late spring and summer.

McGuire Center for Lepidoptera and Environmental Research

The McGuire Center for Lepidoptera and Environmental Research was created at the Florida Museum of Natural History by a \$4.2 million gift in December 2000 from the William W. and Nadine M. McGuire Family Foundation of Wayzata, Minn. The State of Florida matched this gift with \$4.2 million in April 2001. An international search resulted in Kha Le-Huu Associates of Orlando and Beers-Skanska being hired as the architect and construction manager, respectively, in June 2001. From January-June 2001, a McGuire Center Planning Committee composed of more than 30 museum and University of Florida staff met regularly to plan for the facility. The committee presented the architects with the desired building-space requirements for the enormous butterfly and moth collections, research laboratories, education and exhibit facilities, and library and office space in the forthcoming McGuire Hall. A central construction site on the west and north sides of Powell Hall was chosen to best meet the needs of the visiting public.

HERPETOLOGY

Researchers are striving to complete the cataloging of specimens and entry of catalog data into the Master Herpetology Database. A total of 110,000 specimens, of an estimated 190,000, now are in the online database. The museum is part of a collaborative grant from the National Science Foundation to establish HerpNet, a database of 36 herpetology collections in North America with geographic information system search capability.

In April 2002, Herpetology began moving its collection of reptiles and amphibians, and associated offices and laboratories, from the west wing to a new compacterized space in the east wing of Dickinson Hall.

From January 2001 through January 2002, curator Wayne King surveyed the vertebrates of the Moccasin Island Marsh Restoration Property on the St. Johns River, immediately west of Melbourne, for the St. Johns River Water Management District.

King, along with collection manager Kenneth Krysko, initiated a program to document the distribution of exotic reptiles and amphibians in Florida and to develop a management plan that can be adopted by the Florida Fish and Wildlife Conservation Commission to control exotic introductions.

Curator Max Nickerson is studying hellbender larval biology in the Great Smoky Mountains and turtle populations in an Ozark spring-fed river and a cypresstupelo swamp. Nickerson also is a member of a NASA-funded scientific group looking at the effects of snake venom components on tissue and cell types and cell organelles.

Associate Scientist Richard Franz is revising the fossil history of tortoises in North America and the Caribbean, and has accumulated a large collection of Oligocene fossil tortoises from Nebraska.



Vertebrate Paleontology

Vertebrate Paleontology's most exciting venture this year was to continue excavations at a new middle Miocene site northwest of Newberry. The Tyner Farm Site, dubbed "The Rhino Dig," was visited by more than 300 volunteers from across Florida who took turns excavating under the tutelage of the museum's

students and Vertebrate Paleontology staff, Richard Hulbert, Russell McCarty and Arthur Poyer. More than 36 species have been discovered. Many of them are not large, such as a new species of rabbit found from screen-washing fine sediments bagged in bulk. Students in the fall class registered both in zoology and in geology also gained valuable field experience excavating at the Rhino Dig.

Researchers continued to work at the TriBritton Site in Hendry County, which produced an exhibit for the Lee County Museum.

David Webb and graduate students Julie Meachen and Diana Hallman researched fossil llama systematics and niche partitioning.

Bruce MacFadden and post-doctoral researcher Pennilyn Higgins continue studies of fossil tooth chemistry to reconstruct ancient diets and habitats of extinct mammals, including land herbivores (e.g., horses and bison) and manatees and their extinct relatives from Florida. Along with graduate student Joann Labs, he has been studying the growth of giant fossil sharks like *Megalodon*. MacFadden also has been studying a 15-million-year-old collection of Miocene mammals from the former U.S. Canal Zone. Under the auspices of the Pony Express, specimens were added to the VP collections resulting from the spring digs at Thomas Farm and the summer western adventure to the Nebraska badlands.

ORNITHOLOGY

The offices, laboratories and specimen collections of the ornithology program moved from the second floor of Dickinson Hall to renovated space on the third floor. The new quarters are much improved and readily accommodate the growing collection and library.

In August 2001, curator David Steadman surveyed birds on Ata, a remote, uninhabited volcanic island in the Kingdom of Tonga in the South Pacific. In October 2001, he joined graduate students Patrick and Shryn O'Day in an archaeological survey of several islands in Fiji.

Steadman and collection manager Andrew Kratter studied birds in the savannahs and swamps of Trinidad in March 2002, discovering a very rare species of rail known as the Yellowbreasted Crake. From Trinidad Steadman went to the neighboring island of Tobago to complete an archaeological excavation at the Golden Grove site.

Collection manager Thomas Webber continued to upgrade the museum's large collection of sound recordings of birds.

An especially important event was the donation by Dr. Joe T. Marshall of a digital audiospectrograph, digital recording equipment, hundreds of original animal sound recordings from three continents and \$3,000 for their care.

ICHTHYOLOGY

Assistant curator James Albert is revising the phylogeny of Neotropical electric fish using morphological and molecular data, including describing 11 new species, and analyzing the evolution of electric organ discharges with research associate William Crampton.

Field collections include a threeyear interdiscipli-

nary biodiversity inventory of the Pacaya-Samiria National Reserve, a megadiverse, vulnerable and poorly known region in the Peruvian Amazon. Researchers also are building a complete reprint/ photocopy library of about 1,600 citations of all taxonomic papers on Amazonian freshwater fishes.

Adjunct curator Larry Page is developing the "All Catfishes" proposal for the National Science Foundation, a five-year multi-investigator project to document up to 1,000 new species. Page also is describing two new species of darters using morphological and molecular data, analyzing body size evolution in North American fishes and revising the Peterson Field Guide to Freshwater Fishes of North America.

The collections grant from the National Science Foundation is a three-year project to catalog about 79,000 scientifically valuable lots, especially from marine collections previously archived at the University of Miami. From the onset of this project in June 2002, collection manager Rob Robins and his workers have been cataloging about 230 lots per week compared with 75 lots per week in 2000-2001.

HERBARIUM

The Herbarium has diverse programs in research, teaching, extension and collection management. The research focus this past year has been on molecular and morphological systematics of Orchidaceae, Melanthiaceae, Apocynaceae, Melastomataceae and Polygalaceae. In addition, researchers are conducting floristic surveys of Kanapaha Botanical Gardens and Morningside Nature Center. Herbarium staff published more than 50 scientific publications this year. The Herbarium's plant identification and information service provided identifications for county agents, faculty and student researchers and the general public. In collection management more than 2,800 specimens were added to the collection and staff coordinated loans for systematic research throughout the world and to support research of faculty and students at the University of Florida. The Herbarium web site was enhanced to provide additional specimen records and digital images in the on-line collection catalog. Staff members conducted tours for a wide variety of classes and public groups, and are imaging invasive plants for the State of Florida Department of Environmental Protection in order to provide a web-based instructional module for field personnel, agricultural interests and land managers.



MUSEUM AWARDS SEVENTH, EIGHTH CARR MEDALS

In October, the museum honored its seventh and eighth recipients of the Archie F. Carr Medal with a dinner and awards presentation at Powell Hall.

Dr. John F. Eisenberg, of the University of Florida, and Dr. Jay M. Savage, of the University of Miami, received the award which honors the late Archie F. Carr, Jr., University of Florida zoology professor and world authority on sea turtles.

The Carr medal recognizes outstanding national and international contributions to the knowledge, understanding and appreciation of our natural heritage. Recipients are chosen by a sevenmember jury appointed by the director of the Florida Museum of Natural History.

Eisenberg is widely recognized as one of the

world's premier mammalogists. His 35-year career is in the tradition of Archie Carr. His celebrated book, "The Mammalian Radiations," is complemented by a three-volume set, "Mammals of the Neotropics," completed during his tenure at the Florida Museum of Natural History. Despite his outstanding



Eisenberg

scholarly achievements, one of Eisenberg's

greatest contributions has been the teaching and mentoring of students, many of whom have assumed leadership positions in research and scientific administration throughout the United States and Latin America.



Savage

Savage is one of the world's leading herpetologists, field biologists and tropical conservationists. His 50-

year career has added enormously to our knowledge of the classification and biogeography of amphibians and reptiles. His contributions are reflected in many ways, including a long list of important publications and 15 species of vertebrates named "savagei" in his honor by other biologists. A respected teacher and administrator, he has played a key role in establishing many of the most important organizations of present-day

evolutionary biology, such as the Organization for Tropical Studies and the Society of Systematic Biologists.

RESEARCH LOCATIONS

Gadsen Alachua Bradford Brevard Hamilton Hendry Broward Charlotte Hillsborough Citrus Holmes Clay Indian River Jefferson Columbia Dade Lake Lee Leon Levy Flagler Madison



STATES

Nebraska Alabama New York Arkansas Arizona North Carolina District of Columbia Oregon Georgia Pennsylvania Tennessee Kansas Texas Kentucky Virginia West Virginia Michigan Mississippi

Australia

Bahamas Chile Colombia Cook Islands Dominican Republic Ecuador Fiji

France Philippines French Polynesia Germany St. Lucia Guam Trinidad & Tobago Haiti Turks & Caicos Islands

Venezuela Papua New Guinea

Peru

New Grant Awards*

Collections and Research

Albert, J.S., National Science Foundation, \$374,513 Albert, J.S., National Science Foundation, \$325,001

Burgess Jr., G.H., Dept. of Environmental Protection, \$16,000

Burgess Jr., G.H., U.S. Dept. of Commerce, \$168,956

Burgess, Jr., G.H., National Science Foundation, \$49,563

Emery, K.F., Multiple Sponsors, \$6,345

Emery, K.F., University of South Florida, \$2,000

Ross, J.P., Lake County, \$24,362

Ross, J.P. Water Management Districts, \$105,000

Ross, J.P., Lake County, \$23,150

Ruhl, D., Multiple Sponsors, \$4,000

Soltis, P.S., National Science Foundation, \$100,000

Soltis, P.S., National Science Foundation, \$54,500

Williams, N.H., National Science Foundation, \$5,000

Williams, N.H., American Orchid Society Foundation, \$10,802

Camp, B.D., National Science Foundation, \$303,766 Camp, B.D., Institute of Museum & Library Services,

Camp, B.D., ChevronTexaco Foundation \$199,600 Henry-Matus, J., Fla. Department of State, \$19,912 Ramey, P., Fla. Department of State, \$14,885 Roberts, M.M., Fla. Department of State, \$35,000

> List does not include multi-year grant awards received in prior years.

ANG 6905 Individual work, 3 credits

ANT 4907 Individual work, 3 credits

ARH 6938 Museum Studies - Natural History Museums: Changing Paradigms, 3 credits

BOT 6971 Masters Research, 2 credits

BOT 7979 Advanced Research, 4 credits

BOT 7980 Doctoral Research, 4 credits

BOT 7979 Advanced Research, 4 credits

IDH 3931 Honors Program - Florida areas: heritage and responsibility, 3 credits

IDH 4905 Florida Everglades: The economic value of Herpetological habitat, 2 credits

WEC 6971 A study of the effects of lawn fertilizer on tadpole development, 3 credits

WIS 5155 Natural History of Reptiles and Amphibians

ZOO 4905 Ecological factors of arqulid parasitism of Rana heckscheri tadpoles, 2 credits

ZOO 4926/6927, GLY 6932 Vertebrate Macroevolution, 3 credits

ZOO 6905 Fijian Zooarchaeology, 3 credits

ZOO 6905 Comparative Osteology, 1 credit

ZOO 6905 Fijian Field Archaeology, 6 credits

ZOO 7979 Advanced Research, 6 credits

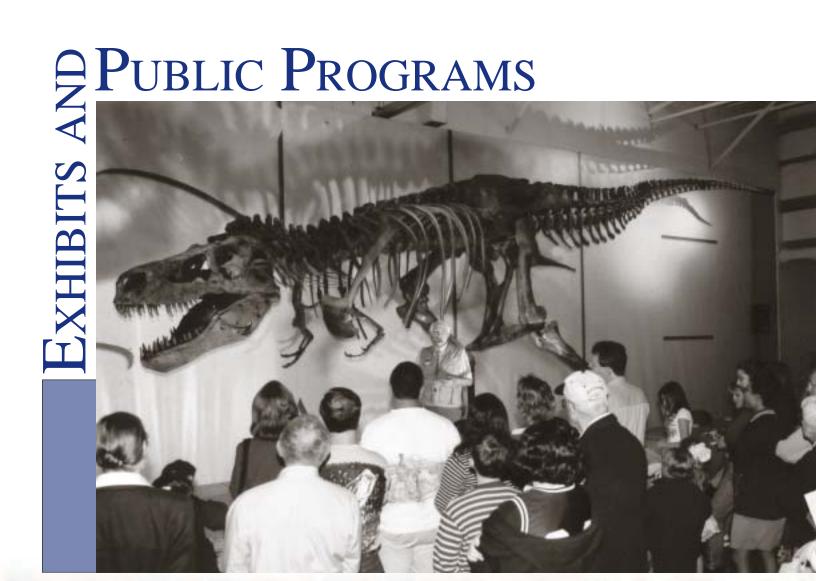
ZOO 7979 Advanced Research, 2 credits

ZOO 7979 Supervised Graduate Research, 6 credits

ZOO 7980 Research for Doctoral, 5 credits

Number of Independent Studies – 35

Number of Chairs of Graduate Committees - 58





The museum dedicated an 18-million-year-old bald cypress tree as part of its fossil plant garden at Powell Hall in November.

The tree was found in the Englehard Company's Midway Fuller's Earth Mine in 1963 in Gadsden County and generously donated to the museum for this exhibit by the Florida Geological Survey in Tallahassee.



Powell Hall's permanent exhibition galleries continued to feature the Northwest Florida: Wildlife and Waterways exhibit. In addition, planning, construction and fabrication continued on two other permanent exhibitions: the 6,000-square-foot South Florida People and Environments exhibit, which opened Oct. 5, 2002, and the 5,000-square-foot Florida Fossils: Evolution of Life and Land exhibit, scheduled to open in spring 2004. In anticipation of the McGuire Center for Lepidoptera and Environmental Research, an exhibits planning committee worked with building architect Kha Le-Huu & Partners and the exhibit's design consultant, Ralph Applebaum and Associates, to create the conceptual design for the public exhibition spaces in McGuire Hall. This design includes a "Wall of Wings," a live butterfly conservatory featuring a rain-forest habitat, and interpretation of the McGuire Center's world-class collections and research programs. The design of the McGuire Center, a 46,400-square-foot wing to be built to the north and west of Powell Hall, will be integrated with the new Samuel P. Harn Museum of Art's Mary Ann Harn Cofrin Pavilion.

Changing exhibits included "Myths & Dreams: Exploring the Cultural Legacies of Florida and the Caribbean" from Aug. 18, 2001 - Jan. 13, 2002, an exhibit that explored Florida and Caribbean cultures and history. The museum hosted "A T. rex Named Sue" Jan. 26 - May 19, 2002. This exhibit was created by The Field Museum, Chicago, and made possible through the generosity of McDonald's Corporation. The exhibit was brought to Gainesville in partnership with the Gainesville Chamber Orchestra and with financial support from the Alachua County Commission and Tourist Development Council. An evaluation of Sue's economic impact shows museum visitors spent more than \$2.3 million in the community.

"Tusks! Ice Age Florida's Mammoths and Mastodons," is a traveling exhibit that features the museum's collections and research on extinct elephants and their relatives. Tusks! opened to the public on June 15 and will run in Powell Hall through May 18, 2003. It was made possible by grants and generous donations from the National Science Foundation, Toomey Foundation for the Natural Sciences, Florida Museum Associates and State of Florida. This project included planning, fabrication, prototype evaluation and graphic text panel design. After Tusks! leaves Powell Hall, it will travel to other museums in the Southeast.

The Galleria featured two exhibits by photographers Steve Vaughn, "Deepest Florida" and Andrei Sourakov, "Portraits of Florida Insects." The Children's Natural History Gallery featured artwork created by students of Alachua County.

The fifth annual "Trashformations," which highlights high school and college student art fabricated from recycled material, was displayed in November 2001.

Traveling exhibits produced by the museum and displayed at other venues included "Orangutan Orphans: Rehabilitating Indonesia's Red Apes" at the Atlanta Zoo and "Down Like Lead: 400 Years of Florida Shipwrecks" at the Brevard Museum in Cocoa and Nauticus - The National Maritime Museum in Norfolk, Va.





Powell Hall hosted more than 228,000 visitors June 30, 2002. Visitors toured permanent and changing exhibitions and attended lectures, meetings, conferences, special events and K-12 school activities. By far the busiest months were January-May when the "A *T. rex* Named Sue" temporary exhibition attracted more than 90,000 visitors.



PROCRAMS FOR STUDENTS

The museum fall tour featured "Myths and Dreams" and the outdoor tours included "Stayin' Alive" for grades 3 and 4 and three new tours, "Sensing Nature" for kindergarten, "Eye on Insects" for grades 1 and 2 during the fall semester, and "Green Machines" for grades 1 and 2 in the spring. The spring tours featured the "Sue" exhibition and were offered for pre-K students and older. All student materials are integrated across the curriculum and correlated with Florida's Sunshine State Standards and Grade Level Expectations.

"Home School Activity Mornings" were offered two days each in the fall and spring, providing self-directed learning experiences that encourage discovery by both the students and their home school teachers. Nearly 1,600 Alachua County 7th-grade students attended "Sensational Science," a program that highlights the diverse areas of science through the interactive exhibits of 27 presenters. Docents made "Inquiry Box" outreach presentations for nearly 1,000 participants.

TEACHER EDUCATION

About 300 educators attended the "Educators Open House," a Cultural Plaza collaborative project also cosponsored by the Alachua County School Board. "2001: A Fossil Odyssey" was a two-part teacher workshop cosponsored by WUFT-TV, Channel 5 that included both activities at the museum and participation in a fossil excavation. Three National Wildlife Federation workshops were offered for teachers, UF students, informal educators and docents. Head Start teachers participated in three workshops offered through the MESS program.



Volunteers

Nearly 70 docents participated in fall and spring training as well as additional training sessions throughout the year, including workshops by the National Wildlife Federation and a three-day field trip to Tallahassee. In addition to working with the K-12 museum tours, docents also worked as "Sue" speakers and ticket takers, and with the pre-school tours and Inquiry Box presentations.

Education coordinator Marilyn Roberts and docents Leslie Klein, Annette Perry and Pat Smart attended the National Docent Symposium in San Antonio, Texas, and presented the poster "Evolution, the Dreaded E Word." Nearly 30 volunteer naturalists participated in training and led tours in the Natural Area Teaching Laboratory and 11 docents worked with the "Sue" preschool tours.

Volunteers were recruited to work throughout the museum, including visitor services, membership, education, exhibits and collections. The December holiday luncheon was coordinated for Powell Hall volunteers and the April annual volunteer luncheon recognized the work of all museum volunteers.

CLASSES

About 850 participant spaces were filled in the six-week summer program, four one-day classes and weeklong spring break classes. Fifteen class scholarships were awarded throughout the year. Photography workshops were scheduled for Girl Scouts and Home School Field School nature classes designed for home-schooled students were offered for the first time.

New External Funding

Grants from state, federal and foundation sources totaling more than \$800,000 were received for new education initiatives.

"Museum on the Move: Science After School" employed at-risk high school students to implement hands-on, inquiry-based science activities during the Alachua County School Board's Extended Day Enrichment Program at eight low-performing elementary schools. This collaborative



program with Santa Fe
Community College's Youth
Employment Start
Program and the school
board was funded by the
State of Florida, Department of State, Division of
Cultural Affairs, the Florida
Arts Council and the
National Endowment for
the Arts for \$19,912.
Additional copies of the
Inquiry Boxes along with
comprehensive teacher

manuals were produced with a \$35,000 grant from the State of Florida, Department of State, Historical Resources, Historical Museums Grants-In-Aid Program for "Museum on the Move: Inquiry Boxes, Phase III." Museum docents use the Inquiry Boxes to present five different object-rich outreach programs that are correlated with Florida's Grade Level Expectations for the Sunshine State Standards and integrated across the curriculum. Each Inquiry Box contains a collection of objects with participatory lessons and activities and may be borrowed by teachers for classroom use.

"Marvelous Explorations through Science and Stories," an innovative partnership formed by the museum, Alachua County Library District/

Youth Services, and Alachua County School Board is providing a literature-based science program for more than 1,000 low-income, pre-school children enrolled in nearly 50 Head Start classrooms. The MESS "kits," correlated with the Head Start Child Outcomes Framework and integrated across the curriculum, bring science materials, books and activities to young children. Children may take kit components home, thus both extending and involving their parents in their learning. In addition, parents and Head Start staff participate in workshops that illustrate ways everyday science explorations and books can be used to enhance young children's school readiness. Parents

and their children are invited to "MESS Around," special science and literacy programs featuring exhibition tours, inquiry-based activities, and the Alachua County Library District Book Mobile. MESS is funded by a three-year grant from ChevronTexaco Foundation for \$199,600 and a two-year National Leadership Grant for Library and Museum Collaborations from the Institute of Museum and Library Services for \$244,073. The ChevronTexaco grant is one of seven proposals funded nationally out of 115 applicants.

"SEEK: Science and Engineering Experiences for Knowledge" is a collaborative initiative of the museum, University of Florida's College of Engineering, Howard Bishop Middle School and Gainesville Regional Utilities funded by a three-year grant from the National Science Foundation for \$303,766. SEEK is an after-school program that engages middle school students in investigative projects that explore the program theme, "Florida's Environment: Past, Present and Future" and also promote interest, knowledge and understanding in science, engineering, technology and mathematics. SEEK targets participants who are traditionally under-represented in these fields of study or considered at-risk.



Public Events

Many public programs were scheduled throughout the year including annual favorites like "Something's Fishy," "Animal Fair," "Collectors Day" and "Bats, Bats and More Bats." In addition, several popular collaborative programs were offered including "Buchholz BioTrek" with Buchholz High School, "Dream Weavers and Spinners" with the Gainesville Handweavers Guild and "Evolution: The Science of the Twenty-first Century," a lecture presented by award-winning author Carl Zimmer and cosponsored with WUFT-TV, Channel 5; Alachua County Library District and the UF Genetics Institute. Three "Sue Weekends" were scheduled in collaboration with the Gainesville Chamber Orchestra. They featured performances of "A Cretaceous Concerto" as well as the Dickinson Hall Open House and presentations by Drs. Christopher A. Brochu, "The Science of Sue" and Gregory M. Erickson, "Breathing Life into *T. rex.*." The "Science Sunday" lectures, a new "Science Spooktacular" program and a variety of other programs rounded out the offerings.



Despite a soft economy and the world's attention on relief efforts following September 11, new and long-time friends of the museum provided more than \$3.4 million to support museum programs, research and new initiatives.

"A *T. rex* Named Sue" was certainly a highlight of our year at Powell Hall. "Sue's" visit would not have been possible without almost \$200,000 in support from key businesses and organizations. A special thank you to the Alachua County Board of County Commissioners, City of Gainesville Department of Cultural Affairs, Cox Communications, Doubletree Hotel and Conference Center, Florida Media, Inc., Gainesville Chamber Orchestra, The Gainesville Sun, McDonald's of Gainesville, The Ocala Star-Banner, StorterChilds Printing Co. and WOGK-FM K-Country 93.7 for helping make "Sue's" visit a HUGE success.

THE MUSEUM'S PRIVATE SUPPORT CAME FROM FIVE SOURCES:

Non-alumni \$426,279 12% of total gifts

> Foundations \$402,045 12% of total gifts

Corporations \$205,760 6% of total gifts

Alumni, students, parents of current students, Faculty/Staff \$169,936 5% of total gifts

Organizations \$150,788 4% of total gifts

The state's matching gift program continues to attract donors and provided \$2.1 million (61%) in additional support.

OTHER HIGHLIGHTS FOR FY 2001 - 2002:

Fundraising total as of June 30, 2002: \$3,454,808

Donors contributed more than \$253,000 to Natural History Collections and Research non-endowed funds. Contributions benefited numerous museum programs including the Allyn Museum of Entomology in Sarasota, Ornithology, Aucilla River Project, Caribbean Archaeology, Randell Research Center at Pine Island, Vertebrate Paleontology and the Archie F. Carr Medal fund. Herpetology received \$18,300 from the Disney Conservation Fund to study the habitat use and community conservation of the American Crocodile in Jalisco, Mexico.

Museum endowments grew by more than \$266,000 supporting programs at the Katharine Ordway Preserve and the Randell Research Center; and in Spanish Colonial Archaeology, Invertebrate Paleontology, Ichthyology, Ornithology, and Vertebrate Paleontology.

The Randell Research Center reached \$366,271 or 28 percent of its \$1.3 million endowment goal. As part of a challenge grant from the Maple Hill Foundation, continued endowment fund growth through FY2006 ensures continued annual operational funding from the Maple Hill Foundation.

Gifts totaling more than \$453,000 were designated for Exhibits, Public Programs and Education at Powell Hall. Jon and Beverly Thompson gave a gift of \$100,000, which qualifies for a possible 1:1 renovation match from the state for the Hall of Florida Fossils: Evolution of Life and Land.

The ChevronTexaco Foundation pledged \$199,600 over two years to support the Marvelous Explorations through Science and Stories program. This new education initiative is a groundbreaking partnership between the Florida Museum of Natural History and the Alachua County Library District. This collaboration provides a literature-based science program for more than 1,200 low-income, pre-school children enrolled in Head Start classrooms.

Membership: Paid museum memberships including Founders Society members increased 10 percent to 832 members. The Museum Associates Board held its annual fundraiser, "Passport to the Fifties," in March and raised more than \$17,000 for museum programs. These dollars partially funded Tusks!, the museum-produced exhibit of Florida's prehistoric elephants and their Ice Age relatives; provided much-needed software and hardware upgrades for the growing membership program; enhanced publicity and promotion of exciting museum happenings; and funded cutting-edge research in the collections.

Non-cash gifts including appraised artifacts and specimens to our permanent collections as well as publicity and promotional support associated with "Sue's" visit totaled more than \$285,798.

LOOKING AHEAD

Construction of the McGuire Center for Lepidoptera and Environmental Research is slated to begin soon, thanks to the generous \$4.2 million gift from the William W. and Nadine M. McGuire Family Foundation last year. Exhibit naming opportunities associated with this exciting new facility include interior exhibits, galleries and outdoor gardens. Construction of the two remaining permanent exhibit halls at Powell Hall remains a priority although construction is largely driven by the availability of funds. The museum needs \$1.7 million to complete the Hall of Florida Fossils: Evolution of Life and Land, scheduled for a spring 2004 opening. An exciting, updated version of the popular Object Gallery to be called the Windows into Natural History remains in the concept phase until we find a lead donor for this \$4 million construction project.

With budget ups and downs, endowments are critical to securing the financial future of the museum since they provide a stable, predictable and permanent source of funding. The Randell Research Center endowment campaign is a top priority this coming year as we move closer to its \$1.3 million goal. Other endowment needs include establishing a \$1.5 million chair in Lepidoptera; creating professorships and research funds in many of our collections areas; setting up a lectureship to provide support for honoraria, publicity and expenses for visiting natural history lecturers; and establishing a traveling exhibit endowment to enable the museum to bring exciting, blockbuster exhibitions to our members and visitors each year.

THANK YOU!

On behalf of the faculty, staff and administration at the Florida Museum of Natural History, thank you for your generous support. Your gifts play an important role in our success, especially during these times of limited funding from state and federal sources.

The University of Florida Foundation receives, invests and administers private support for the museum. It is eligible to receive charitable contributions under section 501(c)(3) of the Internal Revenue Code, and the foundation is certified as a direct support organization for the university.

OFFICE OF MUSEUM TECHNOLOGY

The Office of Museum Technology enjoyed another successful year in 2001-2002. The services provided by the team are essential for the day-to-day operation of the museum. Staff completed an Institute of Museum and Library Services grant, purchased a new web database server, two new workstations and hired a programmer.

Three collection databases were loaded to the museum's web site in searchable form: Herpetology, Mammalogy and the Herbarium. Bill Paine supervised the programming and new server installation, as well as acting as liaison with Florida Center for Library Automation for fiscal management. He also installed the web applications on the database server and web server.

The museum's web site under Sarah Brix's leadership saw some new additions and improvements, including the Historical Archaeology St. Augustine virtual exhibit and a database-driven image gallery for the South Florida Archaeology and Historical Archaeology collections.

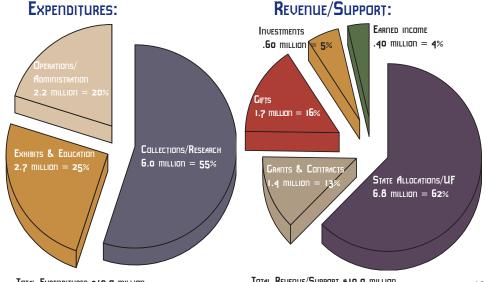
The Fishnet project Ichthyology database became operational in the early part of 2002. This is a project run from the University of Kansas where collections from multiple institutions may be searched simultaneously and a unified record-set returned. The museum received a Dell server to run the software necessary to link to the server at Kansas.

OMT answered more a 1,200 help desk requests from museum staff, with a full-time staff of three people covering both Powell and Dickinson halls. Refinements were made to the museum intranet/accounting database this last year making the system very functional and at the leading edge of museum electronic administration.

Web site visitation user sessions grew from 2,839,911 during fiscal year 2000-2001 to 4,359,575 for fiscal year 2001-2002, averaging eleven minutes and 52 seconds. From Nov. 1, 2001 to June 30, 2002, 15,786 queries were made on our web site collection databases, tracked with new internally designed programs. Upgrades to the code were completed for all of the collection databases on the museum's web site. The improved code provides for easier navigation through returned record-sets and faster searches.

OMT plans to search for a network administrator and a technical support administrator next fiscal year to bring the division to full staffing.

FY 2001-2002 Annual Budget



TOTAL EXPENDITURES \$10.9 MILLION

TOTAL REVENUE/SUPPORT \$10.9 MILLION

<u>S</u>ROLL 2001-2002

GIFTS OF \$100,000 OR MORE

The Lastinger Family Foundation (fs) Jon L. & Beverly A. Thompson (fs)

GIFTS OF \$50,000 OR MORE

Alachua County Board of County Commissioners J. H. Beal (d) The Gainesville Sun (fs) (#) Maple Hill Foundation Texaco Foundation

GIFTS OF \$25,000 OR MORE

Florida Media (#) Anina Hills Glaize (fs) The Museum Collector's Shop The Ocala Star-Banner (#)

GIFTS OF \$10,000 OR MORE

The AEC Charitable Trust
Cox Communications (#)
Doubletree Hotel & Conference Center (#)
Philip I. & Barbara L. Emmer (fs)
The Nature Conservancy
Anna L. Stober (fs)
StorterChilds Printing Co. (#)
The Walt Disney Co. Foundation
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LEGEND

(d) = Deceased

(*) = Museum Associates member (cs) = Curators Society member (fs) = Founders Society member

(#) = Gift-in-Kind



Peer-reviewed scientific publications July 2001- June 2002

Albach, D.C., D.E. Soltis, M.W. Chase and **P.S. Soltis**. 2001. Phylogenetic placement of the enigmatic *Hydrostachys. Taxon* 50:781-805.



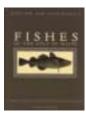
Albach, D.C., **P.S. Soltis** and D.E. Soltis. 2001. Patterns of floral, embryological, and biochemical evolution in the Asteridae s.l. *Systematic Botany* 26:242-262.

Albach, D.C., **P.S. Soltis**, D.E. Soltis and R.G.

Olmstead. 2001. Phylogenetic analysis of the Asteridae s.l. using sequences of four genes. *Annals of the Missouri Botanical Garden* 88:163-212.

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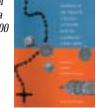


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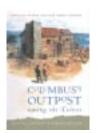


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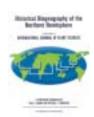


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