

DARWIN'S INSPIRED VISION OF A GRAND TREE OF LIFE —
WITH ITS EVER-BRANCHING AND BEAUTIFUL RAMIFICATIONS —
HAS CHALLENGED SCIENTISTS FOR GENERATIONS.
HE SPECULATED THAT ALL LIFE FORMS — FROM THE SMALLEST
MICRO-ORGANISM TO THE LARGEST VERTEBRATE —
ARE GENETICALLY RELATED IN A VAST
EVOLUTIONARY TREE.

FRIENDS OF THE MUSEUM



The Field Museum is a complex institution — a public museum focused on educating our visitors in the complexity of the world; a scientific institution focused on creating new knowledge across molecular, morphological and conservation dimensions; a financial institution dependent on multiple and growing sources of revenue to enable fulfillment of our educational and scientific missions; a public institution governed by trustees committed to the ongoing growth of the Museum.

By any measure, 2005 was an excellent year for The Field Museum. Nine new trustees were elected and three of our distinguished, long-serving trustees were elected as life trustees. Overall, annual support increased to XX, an XX increase over 2004. We also saw a robust performance by the capital campaign in 2005. By year-end, we had raised \$117 million, well on the way to our goal of \$176 million.

The strategic plan to improve our facilities moved forward. The new Collections Resource Center, the *Elizabeth Hubert Malott Hall of Jades*, the new John G. Searle Herbarium — slowly we

are building the infrastructure for an academic natural history museum for the 21st century. The Museum's collections and research staff conducted fieldwork on six continents and published over 260 scientific articles and papers. And, our outstanding exhibitions and public programming further supported our mission to explore the Earth and its people.

Thank you for your enthusiasm, guidance and support for this most international of Chicago institutions dedicated to great science and to communicating scientific discovery to the public.

Marshall Field
Chairman, Board of Trustees

A handwritten signature in black ink that reads "John W. McCarter, Jr." in a cursive style.

John W. McCarter, Jr.
President and Chief Executive Officer

WE INVITE YOU TO MEET A FEW INDIVIDUALS WHO
LED OUR COLLECTIVE EFFORT IN MAKING THIS PAST YEAR
A GREAT SUCCESS.



EXPLORING THE TREE OF LIFE —
BRANCH BY BRANCH

To further our understanding of the Earth's biodiversity and to obtain knowledge crucial for protecting it, Field Museum scientists are collectively transforming evolutionary and systematic biology. No other institution has more scientists participating in the program, *Assembling the Tree of Life* (ATOL) funded by the National Science Foundation. ATOL's multidisciplinary teams are constructing an organizational framework for the Earth's 1.7 million described species, using new information from molecular genetics, fieldwork discoveries, and inventories of the Earth's biota. The information generated by ATOL will help scientists conduct future biological research, track the origin and spread of diseases, develop new medicines and agrochemical products, conserve species, control invasive species biologically, and restore ecosystems.

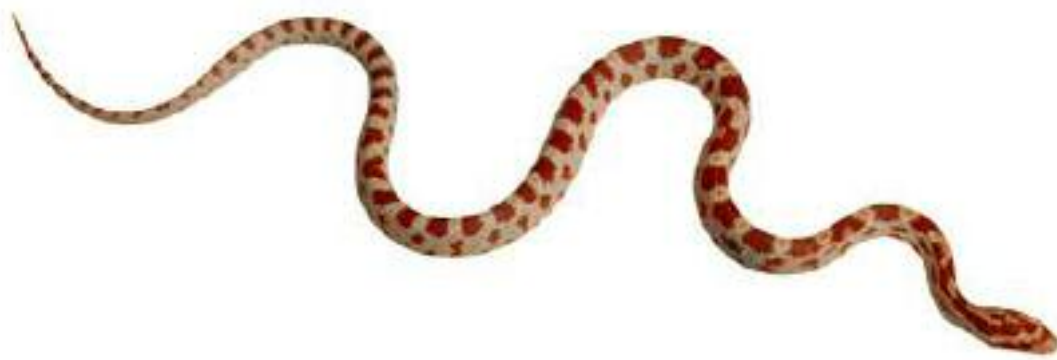
Our PhD scientists are Principal Investigators on six ATOL projects. (Left to right) Margaret Thayer investigates beetles, John Engel and Matt Von Konrat study liverworts, Olivier Rieppel and Maureen Kearney (far right) specialize in snakes and lizards, Shannon Hackett tracks the evolutionary pathways of birds, Petra Sierwald researches spiders, and Peter Makovicky is building an evolutionary tree for archosaurs, dinosaurs closely related to today's birds and crocodiles.



2



1



5



4



6

COLLECTIONS AND RESEARCH



3

1 Liverworts are a species-rich group of small green plants, remarkably diverse in structure. The antiquity of liverworts and their rich biodiversity at all taxonomic levels provide an unparalleled window into early land plant diversification. 2 Early Bird is a large-scale, cooperative effort to determine the evolutionary relationships among all major groups of birds. The project will make it possible to organize and understand information on avian ecology, evolution, physiology and behavior. A high position in many food chains and great mobility make birds sensitive indicators of environmental quality, and monitoring of bird populations is widely used to set conservation and management priorities. 3 With 350,000 described species, beetles comprise a huge fraction of the world's biota and are dominant in every terrestrial ecosystem. Collectively, beetles represent nearly every feeding habit among insects, eating plants, fungi, decaying matter, live prey, and host animals. Study of their evolutionary history provides insight into the role of feeding habits in species diversity. 4 Among the few mega-diverse groups that comprise large branches of the Tree of Life, spiders stand out because of their ecological importance. Without spiders, human populations

would be greatly affected, as insect pests would devour even more than the one-third of our crops they already destroy. Spiders in many ways "replicate" the evolutionary experiment insects represent. The evolution of spider silk, web design, and web spinning behaviors in spiders is closely linked to the evolution of flying insects. 5 With over 7,700 species, squamates (lizards and snakes) are the second largest group of terrestrial vertebrates and are the subject of much research in ecology and evolution. But many critical questions remain unresolved—identification of the most primitive lineage of squamates, the origin of snakes, and the relationships of venomous snakes to other snake lineages. 6 Archosaur phylogeny builds on recent conclusive demonstrations that birds are nested within theropod dinosaurs. Fossils of some of these groups display a number of features that have previously been thought of as avian (such as feathers, and brooding behavior). This project examines the relationships of theropod dinosaurs, including birds.

UNDERSTANDING
AN EARLY CIVILIZATION—
ONE ARTIFACT AT A TIME

The ancient Wari state arose 1500 years ago, and maintained South America's largest empire prior to the Inca. Peoples of the Wari empire recorded their deeds on knotted ropes called *quipu*. Because we have not yet deciphered the *quipu*, archaeological research is our only means of collecting information about these civilizations.

Ryan Williams, PhD, led a team that discovered one of the earliest large-scale breweries in the Andes mountains of Peru in 2004, and began to write the history of the Wari people based on the artifacts he unearthed. His findings were published in the *Proceedings of the National Academy of Sciences* in 2005. Atop a mesa, the entire kilometer-long summit of the city of Cerro Baul was searched with gradient magnetometry. The manufacture of metals and ceramics through intense heating can create anomalies in the Earth's magnetic field. Dr. Williams and his team excavated areas where enhanced magnetic signatures reflected a probability of human activity. Once the floor of the ancient brewery was exposed, Dr. Williams used Ground Penetrating Radar to search even deeper, bouncing electromagnetic pulses off buried objects to locate structures and artifacts. His finds are contextualized by Global Positioning Systems technology.





1, 2

1-4 Dr. Williams recovered *kero*, or drinking mugs, *maca*, or brewing jars, and silver and bronze pins, or *tupu*, worn by elite women who were likely the brewmasters. These Wari artifacts foreshadow important developments in brewing and statecraft in the later Inca empire. In 2005, Dr. Williams inaugurated the Museum's multi-million dollar Elemental Analysis Facility (EAF), funded by the National Science Foundation and Museum donor groups including the Anthropology Alliance. It houses a mass spectrometer that was used to ascertain the atomic composition of the Wari jars and mugs. X-ray fluorescence and mass spectrometry were used to examine the materials in metal brooches and obsidian knives. By determining the precise quantities of elements in these artifacts, Dr. Williams established the geographic origin of the raw materials, tracing the ancient trade routes of Wari imperialism, and deriving insights into the way in which distinct ethnic factions engaged each other.

COLLECTIONS AND RESEARCH



3



4



5

5-6 A career spent protecting Madagascar's endangered, diverse, and previously unknown plants and animals earned Field biologist Steven Goodman, PhD, recognition as one of the 2005 MacArthur Foundation Fellows. Widely known as the "genius" grant, this MacArthur Foundation honor was given for numerous contributions to biodiversity conservation and science in Madagascar, where Dr. Goodman lives. He has devoted nearly two decades to studying the animals of that country, one of the most important conservation hotspots on Earth. He also conducts conservation biology and field inventory courses for Malagasy students. The MacArthur grant gives \$500,000 in "no strings attached" support over the next five years. A large part of this MacArthur award is being used to help fund *Vabatra*, a non-governmental organization whose mandate is to

advance science for Malagasy biologists, particularly in the domain of conservation biology. Colleagues also chose this year for recognizing Dr. Goodman's great accomplishments. When German and Malagasy primatologists discovered two new species of lemurs, they named one *Microcebus lehilahytsara*. Lehilahytsara means "good man" in Malagasy. This arboreal, nocturnal lemur is only a little larger than a big mouse. Lemurs are found exclusively in Madagascar and are considered the most endangered of all primates.



6



APPROACHING CONSERVATION FROM MANY PERSPECTIVES

In 2005, our division of Environment, Culture, and Conservation (ECCo) established a new Bolivian reserve in 182,000 acres of forests, thus safeguarding plant and animal species that have been all but destroyed in adjacent Brazil. This is the latest addition to the 22 million acres (roughly the size of Ohio) now being preserved through the efforts of ECCo and colleagues in Ecuador, Bolivia and Peru. ECCo pursues its collaborative approach to conservation considering both environment and culture.

Through rapid inventories, ECCo collects biological information on wild lands and social information in neighboring villages to establish conservation priorities and create plans that engage local people in the stewardship of their biodiversity-rich homelands. Last year, scientists inventoried the volcanic mountains, Sierra del Divisor, in the Amazonian basin of eastern Peru. Sierra del Divisor could become a model for a new system of protected areas throughout the nation, co-managed by Indigenous Federations and the Peruvian State. Near Peru's Cordillera Azul National Park, communities in the park's buffer zone increasingly adopt and champion park activities. Debra K. Moskovits, PhD, (left) oversees the collective efforts of ECCo's two departments: Environmental and Conservation Programs (ECP) and the Center for Cultural Understanding and Change (CCUC).

1 CCUC was a key partner in developing the Chicago Cultural Alliance to serve as a public voice and convener of community-based ethnic museums, cultural centers, historical societies, and other institutions celebrating cultural diversity. The Alliance is scheduled to be launched in 2006. 2-6 ECP's Chicago team is leading efforts to restore a mosaic of prairie, marshes, and oak woodland at Beaubien Woods Forest Preserve. This 100-acre site is adjacent to the Altgeld Gardens public housing project in Calumet. Using an ambitious ecological management plan, ECP and our collaborators are joining with groups of citizen volunteers and students to begin removing invasive brush and replanting the native flora. Our scientists will also inventory invertebrates, fungi, birds, reptiles and amphibians. 7 As part of a project called, *Tools and Training for Conservation*, ECCo added 6,600 tropical plant images to the web, 4,000 species pages of plants found in the Chicago area, and 835 new plant specimens to the

Museum's herbarium. In the tropics, 56,000 guides were downloaded for use in the field, and biologists, professionals, teachers, and students were trained in rapid inventories, asset mapping, conservation, and environmental education. 8 More than 650 people shared the celebration of a 2005 world conservation highlight—the rediscovery of the believed-to-be-extinct Ivory-billed Woodpecker in Arkansas. Co-sponsored by The Nature Conservancy and the Cornell Laboratory of Ornithology, the evening program took place in our James Simpson Theatre. The audience saw skins of several species of woodpeckers from the Museum's collection and rare Audubon prints. Two Museum scientists on the woodpecker search team—Douglas Stotz, PhD (ECP) and David Willard, PhD (Zoology)—added their insights. * In 2005, The Field Museum launched the ECCo Initiative to retain ECCo's successful programs and exceptional team of experts. A solid financial base will sustain the Museum's ability to translate science into effective action for conservation.

ENVIRONMENT, CULTURE, AND CONSERVATION



1



2



3



4



5



6



8



7



GATHERING ARTIFACTS AND SPECIMENS

The Museum's encyclopedic collections of biological and geological specimens and cultural objects numbers 23 million items — a crucial part of the world's database for the sciences and humanities, and for the study of environmental and cultural change. In 2005, more than two million items from our collections began the largest move in the history of the Museum — to the new 180,000-square-foot underground Collections Resource Center (CRC).

The \$75 million facility goes beyond traditional collections uses, providing vastly improved access and workspaces for students, scientists, and educators. New information can be gained using technologies such as micro-scanners, x-ray machines, automated DNA sequencing, geochronological dating, and digital imaging. Frozen samples are stored in cryogenic containers. The CRC also meets the highest contemporary standards of collections care and management with its climate-controlled environment and special cabinets. About 300,000 items are added overall to the collections annually; the CRC will accommodate expansion for the next 20 to 30 years. The development of the CRC links the efforts of many Museum team members including Robert D. Martin, PhD, Provost (left) and Scott J. Demel, PhD, Collection Project Coordinator (right).



GEORGE
HERBARIUM
FIELD MUSEUM

PLANTS OF PANAMA
330 *Pteris biformis* Lam.
Loach
Nov 1



3



1

PROJECTS AND EDUCATION



4

1 In December, 2004, we celebrated the opening of the new John G. Searle Herbarium. The herbarium plays a central role in the Museum's research program and in the work of scientists internationally. More than 2.7 million plant specimens are protected in a state-of-the-art compactorized storage system, in which cases are set on rails and easily moved to create aisle space and access. This is an irreplaceable storehouse of information about the world's biodiversity and the evolution of life on Earth. 2 Our new 5,000-square-foot East Entrance opened in 2005, providing ground-level, barrier-free access for our visitors including students arriving on school buses, the elderly, and families with strollers. The scale and appearance of this beautiful entrance is in keeping with our original Daniel Burnham-designed building. 3 The newly renovated *Elizabeth Hubert Malott Hall of Jades* now provides a vastly improved space for our visitors to enjoy 450 outstanding jade objects that span the history of China. 4 In 2005, The Field Museum launched the Environmental Education Initiative for *Underground*



2



5

Adventure, a collaborative program for the exchange of best practices in the teaching of environmental and conservation science. *Underground Adventure* takes visitors on a journey to see how animals and plants live in the soil, and to learn about the importance of soil conservation. 5 Last year's Public Programs appealed to thousands. Our Summer World's Tour Summer Camp (held jointly with the Shedd Aquarium and the Adler Planetarium) guides young children in exploration of the Earth's natural history, the biodiversity of the oceans, and the mysteries of outer space. Summer Teen Volunteers facilitated activities and programs for 30,000 visitors. The National Geographic *Live!* series again presented some of the most engaging explorers of our time. Last year, we included a four-part autumn series, in addition to the spring programs.

REACHING MILLIONS
IN JAPAN AND IN THE U.S.

The collective effort of a Field Museum team, including (from left to right) Robin Groesbeck, Bill Simpson, Whitney Owens, Dan Breems, David Hanke, and Laura Sadler, has made Sue an international star. A spectacular, full-sized cast of her skeleton traveled to Japan as the main attraction of *Dinosaur Expo 2005: The Evolution of Theropods from Dinosaurs to Birds*. The Expo's year-long tour was experienced by more than 1.3 million visitors in Tokyo, Nagoya, Osaka, and Kitakyushu.

Organized by Asahi Shimbun, a Japanese media company specializing in foreign exhibitions, *Dinosaur Expo* marked the first international presentation of a cast of Sue. Her image became the face of the Expo's marketing campaign. The Field Museum partnered with Asahi Shimbun to produce an array of products, from magnets to T-shirts and a comic book. More than 50,000 Sue figurines were sold. A T. rex *Named Sue* has also visited 30 cities in the United States. Besides the awe-inspiring cast skeleton, interactives, touchable replicas, two videos, and colorful graphics set the stage for visitors to share the exciting experience of one of The Field Museum's most famous specimens.





1



5



2



8

EXHIBITIONS AND OUTREACH



4

1-2 *Pompeii: Stories From an Eruption* told the story of a vibrant society that disappeared beneath the ashes of Mount Vesuvius. A total of 340,000 visitors saw the exhibition during its five-month run. The Field's own contributions to the exhibition included a magnificent bronze bathtub from the nearby town of Boscoreale, bronze replicas from the period, and a section about the science of volcanoes. 3-6 In 2005, popular temporary exhibitions explored fashion and self image, paleontology in China, the beauty of fragile ecosystems, a contemporary architectural movement, and the revival of an ancient art form. A host of lectures, symposia, teachers' previews, performances, and special tours helped visitors delve into the exhibitions' themes. The Museum hosted *Jacqueline Kennedy: The White House Years—Selections from the John F. Kennedy Library and Museum*; *Sue Discovery Dig*; *Dinosaur Dynasty: Discoveries from China*; *Arctic National Wildlife Refuge: Seasons of Life and Land*; *Design Innovations in Manufactured Housing*; *Jungles*; and *Transforming Tradition: Pottery from Mata Ortiz*; and *Sneaky Sea Creature: New Fossil Find from China*. 7 Preparations continued for the March 2006 opening of the new permanent exhibition about the history of life on Earth, *Evolving Planet*. Over the course of five years, more than 130 staff members



6



7

contributed to this exhibition of dinosaurs and other fossils, organized to explain the science of evolution. The Exhibitions team spent 2005 finalizing designs, remounting major fossil specimens, building the exhibition's shell, creating engaging labels, graphics and media presentations, and installing cases. 8 Traveling exhibitions, including *A T. rex Named Sue*, extended the reach of the Field's programming and provided almost \$1.4 million in gross revenue for the Museum. *Chocolate* appeared at the San Diego Natural History Museum, the California Academy of Sciences in San Francisco, and the Milwaukee Public Museum. *A Celebration of Souls: Day of the Dead in Southern Mexico* traveled to the Santa Barbara Museum of Natural History, and *Splendors of China's Forbidden City: The Glorious Reign of Emperor Qianlong* drew crowds to the Dallas Museum of Art.



3



9

9 The Field Museum is a leader among Chicago museums in the number of families, students, and teachers we serve off-site. In 2005, we went into communities to reach 228,585 people — a six percent increase over 2004 — with programs such as the Soil Adventure Mobile, Park Voyagers, environmental education outreach, student workshops, and more. During this time of school budget cuts and limited field trips, our educational outreach programs are especially important. Created in 1999, Field Ambassadors is our premier teacher professional

development program. It has equipped more than 333 Field Ambassador teachers to use the objects in our collections and our exhibitions to inspire life-long learning in their students. 10 During the 2005-06 school year, the Museum launched the Core Partners program with 12 Ambassador schools. The program provides teachers with customized field trip planning and offers discounts to professional development programs, helping build bridges to Chicago area schools.



10

