

# Tracks

News from The Cleveland Museum of Natural History

Volume 38, Number 7



November/December 2010

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# EXTREME MAMMALS

THE  
BIGGEST, SMALLEST, AND MOST  
AMAZING  
MAMMALS OF ALL TIME

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Cleveland Museum of  
NATURAL HISTORY



## Keeping Track with the Director

Over the past few months, I've had the incredible opportunity to explore many of the collections housed here at the Museum, guided by our expert curators and collections managers. There is no question that the over 5 million objects owned by the Museum constitute a unique and fascinating collection.

I recently toured the Hamann-Todd Osteological Collection of human and primate bones, the largest of its kind in the world. The collection is far more than the sum of its parts—it serves as an amazing resource for the scientific community, in ways that may surprise you. Physical anthropologists, including Museum curator Dr. Yohannes Haile-Selassie, utilize the collection to gain a deeper understanding of modern human skeletons. Comparisons of features seen in modern human bones with those found in the ancient hominid fossils uncovered in Ethiopia are crucial for interpreting the appearance and behavior of these pre-human ancestors.

Orthopaedic surgeons and companies that manufacture joint prosthetics also visit the collection to document the variation in the exact shape and sizes of various bones. This allows them to design joint replacements that better accommodate the range of variation found in patients, and thus have the perfect fit at hand in the operating room.

Our Natural Areas constitute a very different type of collection—these are not fossils, but a living collection of more than 5,000 acres of nature preserves, each an example of the rich biodiversity found in this region of the country. Led by curator Dr. Jim Bissell, Museum scientists and student interns serve as curators for the collection—preserving and researching each parcel, documenting the presence and numbers of rare species and ecosystems, and noting the changes in these over decades of time. They also host field trips for Museum members—essentially creating living exhibits that complement the displays of fossils, specimens and



Dr. Evalyn Gates  
Executive Director and CEO

artifacts found within the Museum's exhibit halls.

The *Extreme Mammals* exhibit that opens November 6 includes fossils collected in South America by Museum research associate and paleontologist Dr. Darin Croft, and a special addition that we are able to accommodate because of our in-house expertise with another kind of collection—the living animals in the Perkins Wildlife Center. In mid-September, Wildlife Resources Director Harvey Webster quietly introduced me to our newest guests—a colony of naked mole rats, including two babies. They are the strangest, yet oddly compelling looking creatures, presided over by a queen who produces all the pups for the colony. I invite you all to come down and meet them!

## Exhibition to showcase most extreme mammals of all time

on exhibit  
November 6, 2010 - April 17, 2011



Naked Mole Rat

© National Geographic

A captivating new exhibition, *Extreme Mammals: The Biggest, Smallest, and Most Amazing Mammals of All Time*, explores the surprising and often extraordinary world of extinct and living mammals. Featuring spectacular fossils and other world-class specimens, vivid reconstructions, and live animals, the exhibition examines the ancestry and evolution of numerous species. It showcases the great family tree of mammals ranging from huge to tiny, from speedy to sloth-like, and displays animals with oversized claws, fangs, snouts and horns.

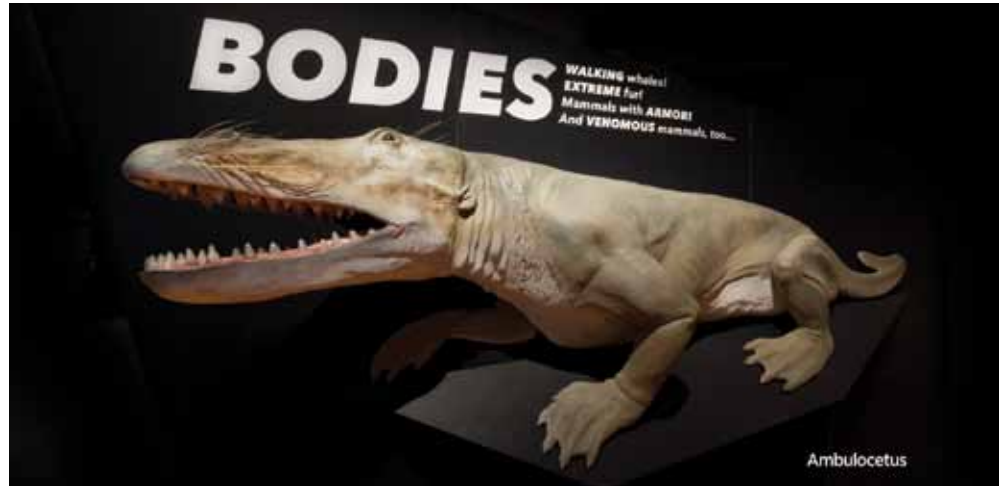
"Despite the amazing diversity of mammals alive today, an even greater diversity went extinct long before humans set eyes on them," said Dr. Darin Croft, associate professor, Department of Anatomy at Case Western Reserve University; and Museum research associate, Department of Vertebrate Paleontology. "Many such examples come from South America, a continent whose mammals evolved in isolation for millions of years. From horned armadillos to saber-toothed marsupials to armor-clad glyptodonts, the extinct mammals of South America are as extreme as they get." Croft's research on South American mammals is highlighted in the exhibit.

*Extreme Mammals* examines how some lineages died out while others diversified to form the groups of well-known mammals living today. Highlights of the exhibition include taxidermy specimens—from the egg-laying platypus to the recently extinct Tasmanian wolf (also known as Tasmanian tiger)—and fleshed-out models of spectacular extinct forms, such as *Ambulocetus*, a "walking whale." Visitors will encounter

an entire skeleton of the giant hoofed plant-eater *Uintatherium*, with its dagger-like teeth and multiple horns; the skeleton model of *Puijila darwini*, a newly discovered extinct "walking seal" from the High Arctic with webbed feet instead of flippers; a 15-foot-tall model of *Indricotherium*, the largest land mammal that ever lived; a life-sized model of the extinct shrew-like mammal ever; one of the oldest fossilized bats ever found; and a diorama featuring the once warm and humid swamps and forests of Ellesmere Island, located in the high Arctic, about 50 million years ago.

Through the use of dynamic media displays, animated computer interactives,

A scientist-at-work video explores the unique mammalian forms that existed while South America was an isolated continent during most of the past 90 million years. The video highlights the fieldwork and research of curator of *Extreme Mammals* John J. Flynn, Frick Curator of the Division of Paleontology at the American Museum of Natural History, Croft and their U.S. and Chilean colleagues in the Andes Mountains of Chile. On display are several of their recent groundbreaking discoveries, on loan from the National Museum of Natural History of Chile, including the earliest known complete monkey skull ever found on that continent, perfectly preserved in volcanic ash.



Ambulocetus

hands-on activities, touchable fossils, casts, taxidermy specimens, and the Museum's new colony of live naked mole rats—subterranean rodents with extreme physical traits—the exhibition will highlight distinctive mammalian qualities and illuminate the shared ancestry that unites these diverse creatures.

*Extreme Mammals* is organized by the American Museum of Natural History, New York ([www.amnh.org](http://www.amnh.org)), in collaboration with the Cleveland Museum of Natural History; California Academy of Sciences, San Francisco; and the Canadian Museum of Nature, Ottawa, Canada. Supporting sponsor is The Lubrizol Foundation. Sponsors are Giant Eagle and Parker Hannifin Foundation. Promotional sponsors are *Cleveland Magazine*, [cleveland.com](http://cleveland.com), Cuyahoga County Public Library, *The Plain Dealer*, WDOK, Western Reserve Television, WQAL and WVIZ/WCPN ideastream.

You're invited to the

# Morning LARK

An Annual Shopping Event at the

## Cleveland Museum of NATURAL HISTORY MUSEUM STORE

### SATURDAY, NOVEMBER 13, 2010

#### EARLY BIRD SAVINGS 8 - 10 AM

Join us for the debut of another fabulous season of unique gift ideas! Arrive between 8 to 10 am to receive a coupon worth 20% off for Museum members good throughout the day. Select from a comprehensive collection of science and nature books, gems and jewels from around the world, new logo wear and special guest artwork, including works by Christopher Smith. Enter for a chance to win

a gift package and handmade decorations made by the Women's Committee. Enjoy complimentary beverages, pastries and free gift wrapping. Reserve your free tickets at 216-231-4600, ext. 3291 or [www.cmnh.org/site/Lark.aspx](http://www.cmnh.org/site/Lark.aspx).



© Christopher Smith

## Making Tracks Museum and staff news

The Museum received a bequest of Ceylon sapphires from the estate of Kathleen Crawford. The



natural gemstones were purchased by Kathleen's husband, Frederick, in Ceylon (now known as Sri Lanka) in 1952. The bequest includes

a 15.75-carat sapphire ring with two triangle-cut diamonds; a pair of sapphire earrings (6 carats each) with triangle-cut diamonds; a 7-carat sapphire pendant with 23 round-cut diamonds and one triangle-cut diamond; and a bracelet with 11 square-cut sapphires, 132 small baguette sapphires and 22 round diamonds. The stunning pieces will be added to the Museum's collection of gems and jewels.

The Museum received a 2009-2010 CILC Pinnacle Award Honorable Mention from the Center for Interactive Learning and Collaboration. The award is presented annually to organizations delivering outstanding K-12 standards based interactive videoconferencing programs.

In September, staff members were recognized for their years of service to the Museum at the annual staff/trustee celebration. In addition, special awards were presented. **Dr. Brian Redmond**, Curator and Head of Archaeology, was honored with the Jared Potter Kirtland Award for outstanding achievement in a field of natural science. Office Manager **Karen Menn** received the Outstanding Staff Achievement Award. Board Vice

President **Nathaniel T. Smith** was the recipient of the Dougan-Newell Award for his contributions to further the mission of the Museum.



The Museum hosted a special guest at this year's Conservation Symposium in September. Mayor Alemayehu Sewagegn of Cleveland's Ethiopian sister city Bahir Dar attended the three-day event. During the symposium, Janett Korb was presented with the Conservation Educator of the Year Award. An educator at Cleveland Heights High School, Korb teaches biology and honors biology and incorporates hands-on experiences and problem solving in the classroom as well as out in the field and community.



Participants of the Museum's Future Scientists program were among the winners of the Second Annual Great Lake Erie Boat Float. With the help of Museum educators, the student team and its "SS Future Scientists" boat constructed of plastic bottles claimed the prize for the Fastest Boat. Other winners were the

Sustainable Water 2010 Group for the Best Use of Recyclable Materials and Sea Scout Ship 41's "Rolling Tide" for the Most Artistic Style. The September event was designed to raise awareness about the impact of plastics on our environment.

### Staff research and presentations



**Dr. Joe Hannibal**, Curator of Invertebrate Paleontology, presented a paper, co-authored by Curator of Mineralogy **Dr. David Saja**, at the meeting of the

International Mineralogical Association held in Budapest in August. The paper was entitled "Stones for a monument: geological aspects of the rehabilitation of the Cuyahoga County Soldiers' and Sailors' Monument in Cleveland, Ohio, USA."



**Dr. Andy Jones**, Curator of Ornithology, co-authored a paper that was recently published in a regional journal, *The Raven*, vol. 79.

Titled "First winter nesting of the Barn Owl (*Tyto alba*) in Virginia," the paper came about after a day of birding by the curator, which resulted in a major find—an active nest of a Barn Owl, the first winter nest known in the state.



**Dr. Michael Ryan**, Curator of Vertebrate Paleontology, presented a lecture titled "Taphonomic Analysis of Late Cretaceous

Dinosaur Bone Beds" on September 28 at Carleton University in Ottawa, Canada.

## Natural Areas program reaches milestone

In September, the Museum's Natural Areas Program held a dedication ceremony at Big Swamp Preserve. The 81-acre acquisition brings the total amount of land protected by the Museum to more than 5,000 acres.

Of its 40 nature preserves, Big Swamp is the Museum's first property in Huron County. The protected area contains part of the largest swamp in Huron County. The preserve encompasses 40 acres of a 60-acre Category 3 (the highest quality) buttonbush swamp and swamp forest wetland complex. The remaining 41 acres of the parcel is mixed woodland of sugar maple, American elm, basswood and burr oak that is recovering after being subject to heavy logging several years ago.

The large block of forest and wetland habitat are home to several rare plants and animals. Currently, about 375 plant species have been documented here by Museum staff and the Ohio Division of Natural Areas and Preserves. The preserve provides habitat for eight state-listed rare species. These include rock elm, a threatened species, and the globally rare and potentially threatened bog blue grass. The Queen Snake, listed in Ohio as a species of concern was also found, as well as Ribbon Snake and Eastern Tiger Salamander eggs—both records for Huron County. In addition, several amphibians of note, such as Jefferson's Salamander and Wood Frog, inhabit the property.

Funding for Big Swamp was made possible through a grant from the Clean Ohio Conservation Fund and a private donor. The Western Reserve Land Conservancy holds the conservation easement on the property.

The Museum's Natural Areas Program conserves regional biodiversity on properties in northern Ohio and northwestern Pennsylvania. By conducting land inventories, eradicating invasive species and stewarding fragile natural habitats, the efforts of staff and volunteers are improving the health of rare ecosystems and protecting endangered and threatened plants, birds, animals and insects.



## 4 Disease



## Microbial mysteries

Investigate the fascinating world of epidemiology in this exhibition. Become a disease-fighting sleuth to unravel infectious disease mysteries and discover the incredible mechanisms the human body possesses to prevent illness. Disease Detectives was developed by the Science Museum of Minnesota.

On display through January 23, 2011.



## Museum collections are invaluable treasures

As the Museum's 90th anniversary draws to a close, it's an ideal time to shine the spotlight on the institution's vast collections.

### A brief history

Cleveland's first natural history collections were animal specimens housed in a small wooden building known as "the Ark" on Public Square in the 1830s. Soon after the Museum was incorporated in 1920, its collection of specimens began through gifts, purchases and expeditions.

The *Blossom* expedition, commissioned in 1923 to collect birds of the South Atlantic, garnered 12,000 birds, mammals, fish, reptiles and plants. In 1923, the Museum received the Holden mineral collection. Then, in 1924, Jephtha H. Wade II donated the greater part of his exceptional collection of gems and semi-

precious stones.

### A growing collection

The tradition of collecting continues. Today, the Museum's collections encompass more than 5 million artifacts and specimens. As Museum curators and staff work in the field collecting objects and discovering new artifacts and specimens, these items are accessioned into the collection. In instances when specimens are collected through other research institutions or foreign countries, casts of these objects are attained by the Museum.

The Museum's collection is also expanded through the generosity of private donors, museum exchange agreements, acquisitions and contributions from foundations and other funders.

### Beyond the galleries

The visiting public sees less than 40 percent of the Museum's collections on display. Countless other treasures are hidden in the lower level laboratories in storage compactors and cabinets, glass jars and a well-stocked cold room. A behind-the-scenes look reveals millions of objects, including taxidermied animals; study skins; insects and other invertebrates; botanical mountings; human

and primate skulls and bones; fossils of dinosaur bones and prehistoric fish; rocks and minerals; amphibians, reptiles and fish; and ancient human tools, instruments, crafts and art.

### A living collection

In 1956, the Museum acquired its first natural areas property, Fern Lake Bog in Geauga County. The Museum's

Natural Areas Program now protects more than 5,000 acres of rare natural habitats throughout northern Ohio and northwestern Pennsylvania. This living collection provides habitat to threatened plants and animals. It also serves as a living laboratory for Museum researchers.

### Research tools

The Hamman-Todd Osteological Collection is the largest collection of its kind in the world. Acquired in 1951 through a permanent loan agreement with the Western Reserve University (later named Case Western Reserve University), it consists of more than 3,100 modern human and more than 900 non-human primate skeletons. The collection and the Museum's Physical Anthropology Department are world renowned as resources for research into human origins and anatomy. Students and scientists, medical device and orthopedic companies, and government entities study the collection.

The Museum's Harold T. Clark Library consists of more than 20,000 books and a 40,000-plus periodical collection that includes over 3,000 individual titles. The library participates in an institutional exchange program with other libraries, museums and universities. This exchange initiative helps to enrich the library's collection and distribute the Museum's original research to other institutions throughout the world.

The Museum's important and diverse collections are valuable research tools. These specimens provide records that scientists can study as they investigate new questions and test hypotheses. Researchers from around the globe utilize the collections to gain insights that help us better understand our past, the world around us today and what it may be in the future.

## Nature of giving

As a newspaper reporter, columnist, editor and public relations specialist, Carol Jordan always sought knowledge. She has continued that quest for knowledge and new experiences in her retirement, traveling with her husband, Kenneth Horak, taking classes and volunteering at several nonprofit organizations.

As a parent, she stressed the importance of learning and discovery. She often brought her boys to the Museum. As a grandparent, she has enjoyed bringing her grandchildren as well. On one visit, her grandson brought in a box of rocks from Cincinnati. A Museum intern took time to examine them and found that they were from the Ordovician period—about 400 million years old. Jordan was grateful that someone at the Museum had taken time to answer a 10-year-old's questions. Later, on a family trip with her grandson, they discovered that the Falls of Ohio Park in Indiana had vast expanses of Ordovician rock. Also, on an Elderhostel trip out west, she learned more about Ordovician rocks. These experiences made her appreciate how the Museum helps people connect to

science and history.

As her children matured, Jordan began exploring classes and programs for herself, taking several astronomy classes with Museum astronomer Clyde Simpson.

"I became fascinated with the magnificent spectacle of stars and planets and galaxies," said Jordan. When she retired from Southwest General Health Center, she was even given a telescope. Jordan is impressed with the Nathan and Fannye Shafran Planetarium's newly installed Leonard Krieger Visual Effects System: Definiti by Sky-Skan. "Its wonderful capabilities make it even more exciting to study the sky," she said. "There is always so much to learn here—about our past, the present—and it lets us look into the future."

Looking toward the future, Jordan made the decision to include the Museum's Astronomy Department in her estate plans. She wants the Museum to continue to grow and be able to incorporate new technologies and adapt to new ways of learning. She determined that the best way for her to leave a legacy was through a gift in her 403(b) plan.



# BETHEFUTURE

Leaving a legacy gift can be as simple as including the Museum in your will through a bequest or naming the Museum in your life insurance or your retirement assets, such as a 401(k), 403 (b), Keogh, SEP or other qualified plan. To learn more, contact Sheryl Hoffman, Director of Major and Planned Gifts, at (216) 231-4600, ext. 3310 or [shoffman@cmnh.org](mailto:shoffman@cmnh.org).

Use the Museum's Gift Guide tool at [www.cmnh.org/site/giftguide.aspx](http://www.cmnh.org/site/giftguide.aspx).

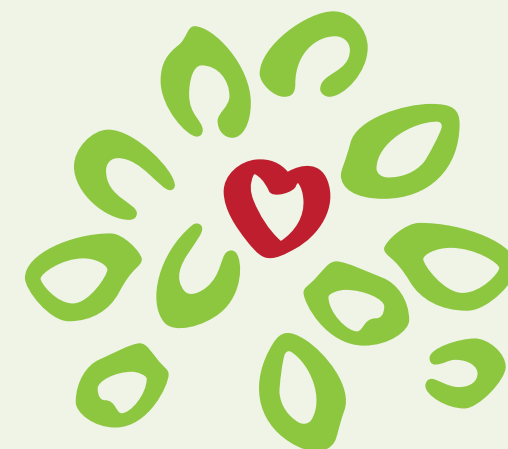
## Wellness@Work 2011

Has your company committed to improving employee health by establishing a workplace wellness program? If so, enter the third annual Wellness@Work Awards and get the healthy praise your company deserves.

Presented by the Museum, the awards recognize Northern Ohio corporations and businesses providing the healthiest work environments for their employees and those that incorporate sustainable

practices into the workplace. COSE, *Inside Business* magazine and Medical Mutual of Ohio are sponsors of the 2011 awards. The winners will be announced in March.

For more information about the Wellness@Work Awards and how to apply, call (216) 231-4600, ext. 3369 or visit [www.cmnh.org/site/WAW.aspx](http://www.cmnh.org/site/WAW.aspx) to access the online application. Deadline for entry is **November 30, 2010**.



precious stones.

By 1925, the Museum's collections were growing substantially. Through its own efforts, the Museum compiled a comprehensive collection of Ohio birds. In addition, excavations uncovered some of the best Devonian Period specimens of plant and animal fossils ever found in the Cleveland Shale. And by the end of 1925,

# Acknowledgments

The Museum gratefully acknowledges the following gifts and grants made from **July 1 through September 3, 2010.**

Grants to the Annual Fund were received from the **Eaton Charitable Fund** (\$10,000) and **The O'Neill Brothers Foundation** (\$2,500).

The **Bicknell Fund** is supporting the remount of the *Allosaurus* in Kirtland Hall with a grant of \$15,000.

Grants in support of educational outreach to Lorain County were awarded by the **Community Foundation of Lorain County** (\$10,080) and the **Nordson Corporation Foundation** (\$5,600). **Newell Rubbermaid, Inc.**'s Investing in Community Program contributed \$14,400 for educational outreach to Summit County.

PNC is supporting *Early Bird Science*, a pilot program to engage pre-K children and adults in the wonders of natural history and science.

The **United Black Fund of Greater Cleveland** provided \$8,000 for Cleveland Metropolitan School District students to participate in instructed programs at the Museum.

The following individuals generously contributed \$1,500 or more to the Museum's Annual Fund and/or to a designated fund and therefore have been named to **The Linnaean Society.**

**Linnaean Kingdom (\$10,000 and above)**  
Dr. Nancy-Clay Marsteller

**Linnaean Class (\$5,000-\$7,499)**  
Anne M. Jones  
Howard and Cara Stirn  
James and Dolores Storer

**Linnaean Order (\$2,500-\$4,999)**  
Linda Butler and Steven Nissen  
Amos and Samantha Crowley  
William and Katherine O'Neill

**Linnaean Family (\$1,500-\$2,499)**  
William and Phyllis Gunton  
Donald and Lynda Insul  
R. Douglas and Laurie McCreery  
Dan and Marjorie Moore  
C. W. Eliot and Linda Paine  
Dickson Whitney



The Museum gratefully acknowledges the citizens of Cuyahoga County for their support through Cuyahoga Arts and Culture.

The following organizations generously contributed \$1,000 or more to the Museum's Annual Fund and/or to a designated fund and therefore have been named to **The Corporate Partners Program.**

**Corporate Heron (\$10,000-\$24,999)**  
Eaton Charitable Fund  
Newell Rubbermaid, Inc.

**Corporate Fellow (\$5,000-\$9,999)**  
The Nordson Corporation Foundation

**Corporate Benefactor (\$2,500-\$4,999)**  
Kaiser Permanente  
KeyCorp  
W & O Events Ltd.

**Corporate Contributor (\$1,000-\$1,499)**  
Brush Engineered Materials Inc.  
RPM International, Inc.

The Museum has made every effort to include all appropriate names. If you are aware of any gifts not honored, please contact Jeffrey Gueulette, Director of Annual Giving, at (216) 231-4600, ext. 3287.

# Museum Events and Programs

Join us for an exciting season of the **Explorer Series**. Each evening begins at 5:30 pm with live music, Museum exhibitions and galleries, shopping and raffle sign up in the Museum Store, and food and beverages for purchase. All presentations begin at 7:30 pm in Murch Auditorium. Following each program, there will be time for questions and answers. Afterward, select speakers will sign their books and, on clear nights, the Ralph Mueller Observatory will be open.

## BE CURIOUS

**Tree Dynamics in Ancient Forests and the Influence of Global Change Processes**  
Dr. Ryan W. McEwan,  
environmental ecologist  
Friday, November 19, 7:30 pm



Forests in eastern North America are dynamic. Understanding how they are changing, and why, is important because these forests provide an array of services to human societies.

Dr. Ryan McEwan will explain these changes and highlight three powerful drivers of forest change that are linked to forests we see today: fire, human disturbances and drought. He will draw from his studies, many of which use tree-ring analysis, in the forests of Ohio and Kentucky. *Co-sponsored by The Native Plant Society of Northeastern Ohio*

*Presentation of the Conservation Awards will precede this program.*

**Teeth, Toes and Tales of Mammals Extreme**  
Dr. Darin Croft,  
paleontologist  
Friday, December 17, 7:30 pm



What's the difference between *Thylacoleo* and *Thylacosmilus*? How do you weigh something that's been dead for 25 million years? Are those horns or antlers on that

untatthere's head? Join Dr. Darin Croft, associate professor in the Department of Anatomy at Case Western Reserve University and research associate in the Museum's Department of Vertebrate Paleontology, as he answers these and other questions while taking you through the top 10 list of intriguing animals past and present. Croft is a collaborator of the *Extreme Mammals* exhibition.

## EXPLORER Series

For the full *Explorer Series* schedule, visit [www.cmnh.org](http://www.cmnh.org).

**Tickets: Member adults \$8; member students and seniors \$7; nonmember adults \$10; nonmember students and seniors \$9. For tickets, call (216) 231-1177, ext. 3279 or visit [www.cmnh.org](http://www.cmnh.org).**

The Explorer Series is generously supported by the Museum's Women's Committee.



This season's promotional sponsors are *Cleveland Magazine*, Cuyahoga County Public Library and WVIZ/WCPN ideastream.

# Leading the way

For 90 years, the Museum has been a dynamic leader in research, education and conservation. The institution is positioned to carry forth this leadership role into the future.

In celebration of the Museum's 90<sup>th</sup> anniversary, the Museum's Development Division embarked on a "90 Years of Leadership" Annual Fund campaign in October. The special 90-day campaign runs through December 31. The goal is to raise \$90,000 by year's end, marking the midpoint toward the Museum's Annual Fund goal of \$1 million.

A charitable donation to the Annual Fund supports the Museum's important work. Every gift contributes to the initiatives that make the institution the leader it is today and the leader it will be tomorrow.

To contribute to the Annual Fund, call the Development Office at (216) 231-4600, ext. 3286 or visit [www.cmnh.org](http://www.cmnh.org).

# BE OUR GUEST

## Kirtlandia Society Programs

Saturdays, 9:30 am coffee and conversation; 10 am program  
*Rare Book Room — Free and open to the public*

**November 13** - New Dinosaur Discoveries  
Dr. Michael Ryan, Curator and Head of Vertebrate Paleontology

**December 11** - Natural History of Costa Rica: A Tiny Country with Tremendous Biodiversity  
Dr. Andy Jones, Curator of Ornithology



## Lectures

### Frontiers of Astronomy

This free lecture series offers those with an interest in astronomy the chance to learn about the latest research in the field. Lectures are held in Murch Auditorium. No tickets or reservations are required. On clear nights, the Ralph Mueller Observatory will be open afterward.

### The Search for Stellar Origins from Antiquity to the 21<sup>st</sup> Century

Dr. Charles Lada, Harvard-Smithsonian Center for Astrophysics  
**Thursday, November 18, 8 pm**  
 Most of what we know about the origins of stars and planets we have learned in the past quarter century, yet the question of stellar origins is among the oldest in astronomy. Discover ideas and concepts about the nature of stars and stellar origins from the ancient Greeks to Newton and then to William Herschel, who in the 18th century proposed a surprisingly modern picture of star formation. Learn about the “dark ages” of the 19th century when the infusion of new technology and physics set back research in this field for nearly a century. Find out about the advances in physics and astronomy in the early 20<sup>th</sup> century that led to the critical discovery of the true nature of the sun and the stars and set the stage for the renaissance in star formation research that began in mid to late 20<sup>th</sup> century and continues unabated today.

Dr. Stacy S. McGaugh,  
 University of Maryland  
**Thursday, December 9, 8 pm**

The inception of modern cosmology can be traced to Einstein’s General Theory of Relativity. This geometrical theory of gravity provides the fundamental force governing the expansion and ultimate fate of the Universe. Remarkable successes and spectacular failures mark the history of cosmology, which continues to evolve today. The twin modern puzzles of dark matter and dark energy provide clues to new physics that may supplant one or more of the most successful theories of the past century. Dr. Stacy McGaugh will discuss the colorful history and potentially bizarre prospects of a subject that resides at the intersection of science, philosophy and religion.

*Frontiers of Astronomy* is sponsored by the Department of Astronomy at Case Western Reserve University through the support of the Arthur S. Holden, Sr. Endowment; The Cleveland Museum of Natural History; and The Cleveland Astronomical Society.

**Mark your calendar for future Frontiers of Astronomy lectures: March 10 and April 14**

### Cleveland Archaeological Society Lecture Series

The Cleveland Archaeological Society, a local society of the Archaeological Institute of America, holds its annual lecture series in the Museum’s Murch Auditorium. Each lecture is followed by a reception. **Free and open to the public.**

### Opening the Door to the Greek House

Dr. Barbara Tsakirgis,  
 Vanderbilt University  
**Wednesday, November 10, 7:30 pm**  
 As the places where women, children, and slaves spent much of their daily lives, Greek houses provide remarkable evidence for all aspects of Greek life. Religion, social relations and the economy can all be studied through the material recovered from Greek houses. Greek houses were a display of the wealth, status and aspirations of their owners. Dr. Tsakirgis will examine the architecture and interior decoration of Greek houses of the Classical and Hellenistic period both in mainland Greece as well as in the Greek East (Asia Minor) and West (Sicily) to offer a comprehensive view of Greek life.

### Audubon Society of Greater Cleveland Program Series

Ohio’s Gone Hog Wild!  
 Dan Kramer, Ohio Division of Wildlife  
**Wednesday, November 10, 7 pm, Rare Book Room**  
 Wild hogs pose a significant threat to Ohio’s native habitats as well as agricultural crops and livestock. In recent years wild boar and feral hogs have become established in numerous locations in the state. Both “Russian boars” and domestic hogs pose threats from rooting, wallowing and consuming native plants as well as exposing livestock to diseases such as pseudo-rabies and brucellosis. Soil erosion, crop damage and their aggressive behavior are just some of the reasons making wild hogs an unwanted addition to Ohio’s landscape.

For tickets or reservations for Museum events, call (216) 231-1177 or 800-317-9155, ext. 3279, or purchase online at [www.cmnh.org](http://www.cmnh.org).

## Museum Events

### Bed Bugs: A New Approach to an Old Problem

**Thursday, November 4, 9:30 am to 1 pm, Murch Auditorium**  
**Free and open to the public.**  
**Registration required.**

This informative symposium is presented by the Cuyahoga County Board of Health and Cleveland Department of Public Health. The bed bug has made a dramatic resurgence nationwide. Locally, public health officials and pest control operators are responding to a significant increase in bed bug complaints. Although they are not known to transmit disease, bed bugs can cause a variety of physical and mental health concerns to those living with an infestation. They have been found in homes, apartments, office buildings, hospitals, businesses and even movie theaters. Economically, bed bugs can be a challenging and very expensive pest to control. This seminar will feature a panel of experts who will discuss topics including an historical perspective of bed bugs, the basic biology of bed bugs, a pest control operator’s perspective about their control and the multifamily housing management perspective about their control. **Registration is required at (216) 201-2030 or [www.brownpapertickets.com/event/130153](http://www.brownpapertickets.com/event/130153).**

### The Natural History of Pumpkins and Squash

**Saturday, November 6; 6:30 pm reception, 8 pm dinner**  
 References to pumpkins and squash date back thousands of years to various parts of Europe as well as North and South America. Native Americans roasted strips of pumpkin over an open fire and ate them, or dried strips of pumpkin to weave into mats. The origin of pumpkin pie occurred when early American colonists sliced off the pumpkin top, removed the seeds, and filled the insides with milk, spices and honey, then baked the pumpkin in hot ashes. These versatile fruits sustained many cultures in colder climates. Join guest chefs Adam Bostwick and Matt Creighton of Melange

at La Place in Beachwood for a dining adventure celebrating pumpkins and squash. Each of the seven courses will be paired with wine selections presented by Dan Hammer, Director of Marketing, Diageo Chateau and Estates of Ohio.  
**Tickets: \$150 per person.**

### Join us as The Natural History of Food dining series continues:

**February 12:** The Natural History of Chocolate, guest chef John Taylor of Sammy’s  
**April 16:** The Natural History of Sugar, guest chef Eli Kratzert of Fleming’s Prime Steakhouse  
**June 25:** The Natural History of Melons, guest chef Pete Joyce of Bistro on Lincoln Park

### Holiday CircleFest

**Sunday, December 5, 1 to 5:30 pm**  
 Get into the spirit of the season with live music and entertainment, hands-on holiday crafts and holiday shopping in the Museum Store. Tour more than 20 University Circle museums, gardens, churches and schools during this annual event. Shuttle service from site to site will be available. The Cleveland Museum of Art’s Winter Lights Lantern Festival procession will begin at 6 pm on Wade Oval. **Free. For more information, call (216) 791-3900 or visit [www.universitycircle.org](http://www.universitycircle.org).**

### NEW Winter Solstice Celebration Concert

**Wednesday, December 22; concert shows at 6:30 pm and 8:45 pm**  
**Nathan and Fanny Shafran Planetarium**

This unique event combines the thrilling visual effects of a planetarium show with live music performed by the Almeda Trio, the ensemble-in-residence at The Music Settlement. Cellist Ida Mercer, violinist Cara Tweed and pianist Robert Cassidy will premiere special works commissioned by jazz legend Dave Brubeck, local Cleveland composer Paul Ferguson, and local student composer Eden Raiz. The trio will also perform pieces with starry themes as well as Astor Piazzolla’s “Winter” tango from *The Four Seasons of Buenos Aires*, “Red Moon,” by Jamie Sieber and “Pale Yellow” by Jennifer Higdon. The event will begin with a discussion on the science behind the celebration of the winter solstice presented by Museum Astronomer Jason Davis, who will then showcase the Museum’s new Leonard Krieger Visual Effects System: Definiti by Sky-Skan accompanied by the musical performance. **Tickets: \$100 limited seating patron level (\$85 tax-deductible); \$15 general seating. Registration required at (216) 231-4600, ext. 3286.**



## Museum Programs

### In the Shafran Planetarium

An out-of-this-world experience featuring the latest in technology!

Be amazed at our live shows in the new and improved Nathan and Fannye Planetarium. Offering enhanced special effects, full-dome coverage and high-definition imagery, the technology allows Museum astronomers to present more detailed sky shows that take visitors on virtual trips throughout the Universe and beyond.

To guarantee seating, please arrive 20 minutes before show time to claim your tickets with your confirmation number. Unclaimed tickets will be released for purchase on a first-come, first-served basis 10 minutes before show time.  
**Tickets: Members: Free; nonmembers: \$4 per person with Museum admission. Please reserve in advance.**

### Farewell Space Shuttle

Following 134 launches, the Space Shuttle program is scheduled to be retired from service in 2011. We'll bid a fond farewell and highlight the remarkable accomplishments of the program.  
Monday through Friday, 2:30 pm;  
Wednesday, 8 pm; Saturday, 10:30 am\*;  
12:30, 2 and 4 pm; Sunday 12:30, 2 and 4 pm  
\*On **November 6** and **December 4** "Star Babies" will be offered at this time instead. Star Babies gives children 2 and younger a gentle, 15-minute introduction to the planetarium and the wonders of the night sky

### Children's program: "Red Moon"

You **may** have heard of a "Blue Moon". But this year, on the first day of winter, we get to see a reddish Moon during a lunar eclipse. We'll need three things: clear skies, warm clothes and our folks' permission to get up in the middle of the night!  
Saturday, 11:30 am and 3 pm; Sunday, 1:15 and 3 pm



## Smead Discovery Center

Monday through Saturday, 10 am to 4:30 pm; Wednesday, 10 am to 8 pm; Sunday, 1 to 4:30 pm. Free with Museum admission.

Visit the Smead Discovery Center for hands-on fun on the Museum's Lower Level. Visitors of all ages are welcome in this multigenerational space. We have concrete activities for tots and "brain buster" puzzles for teens and adults.

### Sustainable Solutions for Misfit Toys – Plastic Toy Drive

**Donate plastic toys in the Discovery Center November 1 through 30, 2010**  
Bring us your tired, plastic and broken action figures, and we'll send them to Toy Lab in Cincinnati where kids will make them into new toys in an arts and science lab. Last November, we collected nearly 175 pounds of plastic toys; this time our goal is 250 pounds. You can help us reach our goal while keeping toys out of landfills, contributing to a youth arts and science program, and most importantly, sharing an important conservation lesson with your kids. Please limit toy size to 6" x 6" x 6." Toy Lab is a project of Happen Inc. [http://www.happeninc.com/toylab\\_index.html](http://www.happeninc.com/toylab_index.html).

### Extreme Mammals!

**Saturday, November 6; 10 am to 4 pm and Sunday, November 7; 1 to 4 pm**  
Enjoy special activities and crafts that complement the new exhibition *Extreme Mammals*. What will you and your family discover?

### In the Mueller Observatory

View the night skies through our vintage, 10 1/2-inch Warner & Swasey telescope. Wednesday evenings, weather permitting, September through the end of May, 8:30 to 11 pm (arrive before 10 pm; dress for the weather). November and December will be the finest months for checking out magnificent Jupiter. One of its major cloud belts has disappeared—something that happens only about once a decade.

### Cap-it!

**Friday, November 26 through Sunday, November 28**  
Cap off the end of our annual broken toy drive by making crafts from bottle caps, cardboard tubes and other re-usable items.

### Holiday Circlefest

**Sunday, December 5; 12:30 to 5 pm**  
Join us for our yearly festival. All day, children will learn about rocks and minerals and make and take a polished stone necklace. Enjoy all of the hands-on activities and family fun.

### Oh My, Mammals!

**Tuesday, December 28, 1 to 3 pm**  
Meet Dr. Darin Croft, a vertebrate paleontologist. He digs up ancient mammals that once roamed South America. He'll share stories about his fossil-finding expeditions and show you some real fossils. Ask him what his ancient mammal research tells him about today's mammals.

## Live Animal Programs

Staff and volunteers will introduce visitors to Northeast Ohio's wild creatures using live ambassadors from the Museum's Wildlife Resource Center. Saturday and Sunday, 1 pm in the Museum lobby and 3 pm in the Ralph Perkins II Wildlife Center & Woods Garden. Additional programs will be offered at 1:30 pm on November 26 and daily from December 20 to 31, except for the Christmas holiday. **Free with Museum admission.**

### November and December: Extreme Living – Amazing Mammals, Birds and Reptiles from Ohio and their Extreme Adaptations

There are amazing and extreme animals living in our own backyards! Think about it, skunks fighting with chemical warfare, hawks seeing their prey miles away, snakes hearing through their jaws, babies born without legs, and owls who catch prey by hearing alone! And then there are prehensile tails, opposable toes, pouches for babies, flexible necks, silent fliers, stealthy stalkers and many more. Join Museum Wildlife staff and volunteers in an exploration of extreme living in our own backyard.



# BE OUTSIDE



## Carol H. Sweet Nature Center at Mentor Marsh

Mentor Marsh is an interpretive nature preserve of the Museum and the Ohio Division of Natural Areas and Preserves. It is located at 5185 Corduroy Road, Mentor. Trails are open daily, year-round, dawn to dusk. The Nature Center is open to the public the first Sunday of the month November through March, 11 am to 4 pm. **Guided, exploratory family nature hikes are offered from 2 to 3:30 pm every Sunday the Nature Center is open.** There is no charge, and all are welcome. Programs will be held in all but severe weather; so please come prepared for the conditions. Bring your own field guides and binoculars if you have them or we will have some to lend. Reservations are requested. To register or for more information, contact the Nature Center at: (440) 257-0777, by mail at 5185 Corduroy Rd., Mentor, OH 44060, or e-mail [rdonalds@cmnh.org](mailto:rdonalds@cmnh.org).

### Sunday, November 7: Mid-autumn Amble

Join our naturalist on a hike and learn what's going on seasonally around the Marsh.

### Sunday, December 5: The Trees in Our Forest

Can you identify trees without leaves? We'll focus on the trees in our forest and appreciate the beautiful shapes and patterns on the bark at this time of year. Tree identification materials provided.

# November

# 2010

Sunday

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

**Smead Discovery Center,**  
Sustainable Solutions for Misfit  
Toys- Plastic Toy Drive  
(thru 11/30)

1

**Adult Program,** The Science of  
Natural History, 6 pm

2

**Bed Bugs- A New Approach to  
an Old Problem,** 9:30 am;  
**Target Free First Thursday,** 10 am

3

**Adult Field Trip,**  
Hike Sawdust, 10 am;  
**Extreme Mammals! Exhibit  
Opens;**  
**Smead Discovery Center,**  
Extreme Mammals!, 10 am;  
**Natural History of Pumpkins &  
Squash,** 6:30 pm

5

6

**Adult Field Trip,** Wonderful  
Waterfalls & Rigorous Ravines,  
Thompson Ledges, 10 am;  
**Smead Discovery Center,**  
Extreme Mammals!, 1 pm;  
**Mentor Marsh Program,** Mid-  
autumn Amble, 2pm

7

8

**Guild of Nature Artists,** 7 pm;  
**Trout Club Dinner Meeting,** 6 pm;  
**Adult Program,** The Science of  
Natural History, 6 pm;  
**Cleveland Archaeological  
Society,** *Opening the Door to the  
Greek House,* 7:30 pm;  
**Audubon Society of Greater  
Cleveland Program Series,**  
*Ohio's Gone Hog Wild!*, 7 pm

9

10

11

12

13

**The Museum Store's Annual  
Holiday Shopping Event,** 8 am  
**Adult Field Trip,** Fall at the  
Grand River Terraces, 10 am;  
**Kirtlandia Society Meeting,**  
*New Dinosaur Discoveries,*  
Dr. Michael Ryan, 9:30 am

**Program,** Back to Basics:  
Extreme Ohio Mammals, 6 pm;  
**Adult Program,** Special Film  
Screening- *No Impact Man: The  
Documentary,* 7:30 pm  
**Cleveland Geological Society  
Meeting,** 7:30 pm

17

**Adult Field Trip,** Sandhill Crane  
Migration/Indiana Dunes,  
8am (thru 11/20); **Frontiers of  
Astronomy,** *The Search for Stellar  
Origins from Antiquity to the 21<sup>st</sup>  
Century,* 8 pm

18

**Parent & Preschoolers,** A Pod  
of Whales, Tiny Trekkers, 9:30  
am, Young Explorers, 11 am;  
**Explorer Series Lecture,** *Tree  
Dynamics in Ancient Forests &  
the Influence of Global Change  
Processes,* 7:30 pm

19

**Adult Program,** Extreme Kidney  
Lab, 10 am;  
**Youth Program,** Super Science  
Saturdays- Magnificent  
Mammals, Grades 1-4, 10 am;  
**Adult Field Trip,** Falling Out  
at the Cash-Hertrick Preserve,  
10 am;  
**Micromineral Society Meeting,**  
1 pm

20

**Guild of Nature Artists,** 7 pm

**Thanksgiving Day,**  
**MUSEUM CLOSED**

**Smead Discovery Center,** Cap-it  
(thru 11/28)

21

22

23

24

25

26

27

**Adult Field Trip,** Visit the  
National Aviary, 8 am

28

29

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## Exhibits & Shows

**Kahn Hall** – *Extreme Mammals*, November 6 through April 17, 2011

**Fawick Gallery** – *Disease Detectives*, through January 23, 2011

**Lower Level Gallery** – *Fieldwork: The Rare and the Wonderful at Singer Lake Bog*, through November

## Harold Terry Clark Library

Tuesday through Friday, 10 am to 2:30 pm

The Museum's non-lending research library features books and periodicals on science topics. Library hours occasionally vary. Please call ext. 3222 to confirm library staff is on duty.

# December

# 2010

Sunday

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

## Museum Hours

Monday through Saturday, 10 am to 5 pm; Wednesday, 10 am to 10 pm (Observatory open 8:30 am to 11 pm through May, weather permitting); Sunday, Noon to 5 pm

## Museum Store Hours

Monday through Saturday, 10 am to 5 pm; Wednesday, 10 am to 8:30 pm; Sunday, Noon to 5 pm

## For Visitor Information

Call (216) 231-4600 or 800-317-9155 or visit [www.cmnh.org](http://www.cmnh.org)

**Holiday Circfest,** 12:30 pm;  
**Mentor Marsh Program,** The  
Trees in Our Forest, 2 pm

5

6

**Guild of Nature Artists,** 7 pm

7

**Frontiers of Astronomy,**  
*The Driving Role of Gravity in  
Cosmology,* 8 pm

8

9

**Adult Field Trip,** Foray at Floyd  
Preserve, 10 am; **Kirtlandia  
Society Meeting,** *Natural History  
of Costa Rica: A Tiny Country  
with Tremendous Biodiversity,* Dr.  
Andy Jones, 9:30 am

10

11

**Adult Field Trip,** Johnson's  
Woods & Charles Mill Lake, 9 am

12

13

**Trout Club Dinner Meeting,**  
*Red Fishing from Kiawah  
to Hilton Head, SC,* 6 pm;  
**Cleveland Geological Society  
Meeting,** 7:30 pm

14

15

16

**Parent & Preschoolers,** A Pride  
of Lions, Tiny Trekkers, 9:30 am,  
Young Explorers, 11 am;  
**Explorer Series Lecture,** *Teeth,  
Toes and Tales of Extreme  
Mammals,* Dr. Carin Croft  
7:30 pm

17

18

**Adult Field Trip,** Singer Solstice,  
10 am

**Guild of Nature Artists,** 7 pm;  
**Winter Solstice Celebration  
Concert,** 6:30 pm

**MUSEUM CLOSING @ 4 PM**

**MUSEUM CLOSED**

19

20

21

22

23

24

25

**Smead Discovery Center,**  
**Oh My, Mammals!**, 1 pm

**Family Program,** New Year's at  
Noon!, 10 am;  
**MUSEUM CLOSING @ 4 PM**

26

27

28

29

30

31

American Chestnut



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Dr. Evalyn Gates  
Executive Director and CEO

Marie Graf  
Director of  
Marketing and Communications

Glenda Bogar  
Editor

Barbara Rosenbaum  
Graphic Design and Production

Laura Dempsey, Cory Molner  
Staff Photographers

Editorial Assistance  
John Roman  
Kim Gillan-Shafron

# Tracks

THE CLEVELAND MUSEUM OF NATURAL HISTORY  
1 WADE OVAL DRIVE, UNIVERSITY CIRCLE  
CLEVELAND, OHIO 44106  
216.231.4600  
800.317.9155

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## Just for kids



**O**ur new male Barn Owl (pictured above, right) now has a name! Radar was selected by online voters during a naming contest. With 39 percent of the vote, Radar beat out Albus, which was a close second at 32 percent. More than 400 online votes were cast via the Museum's Web site and Facebook page. Other name choices were Apache, Cayuga, Huron and Tytus. Radar is being trained for use in educational programs. To learn more about Radar, visit the Museum's Web site to see a video of the owl with Director of Wildlife Resources Harvey Webster.

### New year's at noon!

Friday, December 31; 10 am to 1 pm

Can't wait until midnight to ring in the New Year? Join us for our second annual *New Years at Noon!* celebration. Explore the *Extreme Mammals* exhibit with Museum educators, participate in a fun, hands-on activity, and make a craft to take home. Count down to noon in the Shafran Planetarium with a special show. Make your reservations early to attend this out-of-this-world party! Visit [www.cmnh.org](http://www.cmnh.org) to register.

### Winter holiday camp - grades 1 through 4

Come spend part of your winter break at the Museum. Each day offers a different theme featuring fun and informative hands-on activities, a make-and-take craft, and a special planetarium program. Sign up for one, two, or all three days.

Monday, December 20 – **It's Easy Being Green**

Tuesday, December 21 – **Explore Your Five Senses**

Wednesday, December 22 – **Extreme Day**

**Members: \$42 per day or \$37 per day for two or more days; nonmembers add \$5. Aftercare is \$8 per day.** For details and to register, visit the Classes and Programs section at [www.cmnh.org](http://www.cmnh.org).