Sam Noble Museum

Tracks

Fall 2017 Newsletter Vol. 29, No. 4

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To celebrate our 30th anniversary, please consider a gift to the museum's endowment fund and become a part of the Oklahoma Heritage Walkway.

Please contact Pam McIntosh, (405) 325-5020 or pjmcintosh@ou.edu for more information.

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OUR MISSION
The Sam Noble Museum at the University of Oklahoma inspires minds to understand the world through collection-based research, interpretation and education.

OUR VISION
As one of the finest museums, we are at the heart of our community, collectively working to inspire understanding, appreciation and stewardship of the earth and its peoples.

TRACKS
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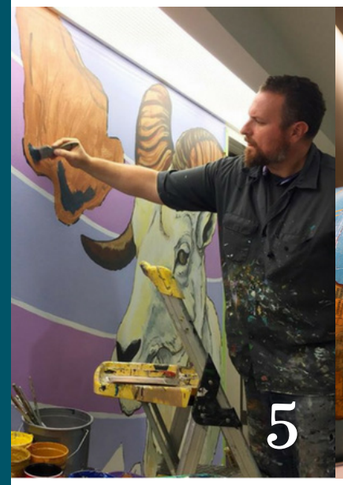

FEATURES AND DEPARTMENTS

ON THE FRONT COVER:
"Explore Evolution"

ON THE BACK COVER:
"Fluent Generations: The Art of Anita, Tom and Yatika Fields"

Thanks to our 2017 Corporate Sponsors and partners: Love's Travel Stops and Country Stores, Arvest Bank, Republic Bank & Trust, 2 Green Chicks, Visit Norman, Banc*First*, Sam's Club of Norman and the Adventure Road.

From the Director

Museums are about preserving collections, conducting research and educating students and visitors over the very long term. The heart of the museum, the driving intellectural force of research, exhibits, education and programs, comes from the curators. Great museums have great curators.

Since 2011 we said farewell to five outstanding curators. Drs. Don Wyckoff (archaeology), Laurie Vitt and Jan Caldwell (both in herpetology) retired in 2011, Gary Schnell (ornithology) retired in 2012 and Mary Linn (Native languages) moved to the Smithsonian in 2014. Edie Marsh-Matthews (ichthyology) took a position on campus in 2014 and retired from OU last year. Each played an important role in research, collections, exhibits and programs. Their research was known worldwide. Now – five years later – we are completing the long process of having a full curatorial team in place once again.

Dr. Marc Levine came on board as archaeology curator, followed by Dr. Cameron Siler in herpetology in 2013 and Dr. Matthew Miller in ornithology in 2016. In 2017, we added Drs. Hayley Lanier and Raina Heaton, in mammalogy and Native American languages, respectively. The life science curators hired recently are all trained in sophisticated genetic research that is perhaps the most powerful tool for understanding the evolutionary relationships of living organisms. I decided, when faced with so many retirements, to move the museum in this new direction because it is so important in modern cutting-edge research in evolutionary biology.

The museum is a research unit of the University of Oklahoma, and with the excellent curators we have hired, our contributions to understanding how organisms developed should continue far into the future. By next year we should have an ichthyologist in place as well, completing the group that is responsible for caring for 10 million objects and specimens.

I include a photo of my wonderful granddaughter (an unbiased view for any grandfather), Abigail Elena Mares, who loves "her" museum that Pop Pop has directed for more than 30 years. The Sam Noble Museum will continue to serve the people of Oklahoma far into the future through challenges that we cannot imagine at this time.

The museum is now 118 years old. Think of the changes that have occurred since shortly after the last Land Run. No one can predict the future, as the Chinese philosopher Lao Tzu said more than 2,500 years ago, "Those who have knowledge don't predict. Those who predict don't have knowledge."

This museum is a treasure trove of knowledge and information traveling through time and will serve generations of adults and children who are yet to be born. I hope that Abby will be a part of the journey, as well as all of you and your families. We can only succeed with your help. We are grateful to you, our members, our board of visitors, and our donors and sponsors who make it possible for us to bring the world to Oklahoma and Oklahoma to the world.

M. Mares

Michael A. Mares, Ph.D.
Director

NEWS

Mural Welcomes Visitors at Will Rogers World Airport

What does a bighorn sheep, ammonite, Monarch butterfly, Columbian mammoth and crystal quartz all have in common? They all harken back to Oklahoma's rich natural history, and they're painted larger than life on a 44-foot-long wall in the Will Rogers World Airport.

The museum has partnered with the airport to install a natural history-inspired mural, "Hidden Treasures," in the airport's baggage claim area. The mural, ideated and painted by local artist Nick Bayer, is a gift from the museum and found its temporary home in the airport in mid-June. It will be on display through May 2018. The mural features museum objects and specimens originating from all over the world as well as objects that highlight Oklahoma's rich cultural and historical past.

"We opened the opportunity up to several local artists, but we were particularly taken by Nick's use of objects and specimens that tell the story of Oklahoma, like the Monarch butterflies that use Oklahoma as their center of migration, the Columbian mammoth found in North America for about a half million years whose last specimens in Oklahoma were from 10,000 years ago, and the bivalves and ammonites that represent the early Cretaceous period in the southern part of the state," said museum spokesperson Morgan Day.

Bayer compared a trip to the museum to going on a treasure hunt.

"Around every corner are little bits of our treasured world, and I am always finding new things to marvel over," he said. "More than 10 million natural and cultural history objects and artifacts can be found there. The work I created is full of hidden treasures that are tucked away at the museum. I hope the mural sparks the interest of the viewer and that they will try to find their own hidden treasures when they visit the Sam Noble Museum."

The museum celebrates 30 years as the state's natural history museum this year, and the mural helped kick off a year-long celebration that featured vintage editions of Tracks and a month-long look back on museum history on the museum's social channels.

The museum became the Sam Noble Oklahoma Museum of Natural History when it opened its doors at its current location on May 1, 2000.

EXHIBITION

"Explore Evolution"

Explore the evolution of life and learn all about Earth's organisms, from rapidly evolving viruses to whales that walked, in "Explore Evolution," a new exhibit on display at the Sam Noble Oklahoma Museum of Natural History Sept. 23 through Dec. 31.

"'Explore Evolution' focuses on seven types of organisms on our planet today, the researchers studying them and making leading discoveries about the evolution of life, and why these organisms have had such a profound impact on our understanding of evolution," said Cameron Siler, Ph.D., curator of herpetology at the Sam Noble Museum.

The seven interpretive areas listed spotlight cutting-edge scientific research and illustrate how the evolutionary principles of variation, inheritance, selection and time are at work in different organisms.

- "HIV: Tracking an Evolving Target" explores how scientists study the mutation and evolution of the HIV virus in order to develop treatments that can block it.
- "Diatoms: A Species Is Born" looks at the most rapid evolution of any species in the fossil record: a one-celled diatom from Yellowstone Lake that evolved over a relatively brief 4,000-year period.
- "Ants and Fungus, Coevolving Partners" follows research into the coevolution of leaf-cutter ants and the fungus they farm.
- "Fly, Evolution of Mating Songs and Dances" shows how a researcher in Hawaii has found more than 800 species of fruit fly that evolved from a single species over millions of years.
- "Finch, Evolution in Action" takes a look at modern research into Charles Darwin's Galapagos finches to examine how changes in the size and shape of their bills can occur quickly in response to dramatic changes in the environment.
- "Human Family Ties" illustrates recent genetic research that shows how the DNA of chimpanzees and humans differs by only 2 percent of their genetic makeup.
- "Whales, Walking Into the Past" shows fossil discoveries in Pakistan that illustrate the evolution of modern whales from ancient four-footed land mammals.

The exhibit was developed by a consortium of six partner museums: the University of Nebraska State Museum at the University of Nebraska-Lincoln (lead institution), the Exhibit Museum of Natural History at the University of Michigan, the Kansas Biodiversity Institute at the University of Kansas, the Sam Noble Museum at the University of Oklahoma, the Texas Memorial Museum at the University of Texas at Austin and the Science Museum of Minnesota.

"Explore Evolution" was made possible by a $2.8 million, three-year grant from the National Science Foundation's Informal Science Education program. The project was begun partly in response to recent studies that show widespread misconceptions about evolution among Americans.

"We know that many people think of evolutionary theory as a series of static ideas," said Judy Diamond, professor and curator at the University of Nebraska State Museum and principal investigator of the NSF grant.

"The concept of the project is to show the public that research on evolution, like research in all areas of science, continuously changes our ideas of how we think about the natural world."

The exhibit presents basic evolutionary principles from a scientific point of view, using current ongoing research, intended to provide the public with information and clarification on a subject that is complex and often incompletely understood.

This exhibit is sponsored locally by Love's Travel Stops & Country Stores.

Left page: The "Explore Evolution" exhibit includes a model explaining the evolution of the HIV virus.

Bottom: The Yellowstone diatom from Yellowstone Lake stands apart from other diatoms because of its pattern of spiny projections and ribs (known as costae).

Monarch Butterfly Waystation

Top: Several OUr Earth and OU Biology Club members participated in the University of Oklahoma's Big Event philanthropy day and pitched in to ready the museum's back prairie and transform it into a certified Monarch Butterfly Waystation.

Bottom: Kyle Davies, museum preparator at the Sam Noble Museum, and Katrina Menard, curator of recent invertebrates, ready the museum's Centennial Prairie for a batch of native milkweed plants.

Museum researchers hope Monarch butterflies found the museum grounds a little more accommodating when they made their annual Oklahoma pit stop as they migrated from Canada to Mexico this fall.

Conservationists turned their attention to the museum's Centennial Prairie as they planted native milkweed in a small section of the land located behind the museum. They intend to increase the monarch butterfly population by turning the field into an official Monarch Waystation — a native plant-rich plot of land (certified by MonarchWatch.org) that's perfect for a lepidoptera layover.

Founded by the University of Kansas, the nationwide monarch butterfly waystation program aims to provide shelter and increase nectar sources for butterflies as well as the native milkweed plants on which the larvae hatch and that caterpillars use for sustenance.

Museum researchers hope that continual efforts to build up the waystation, or increase the number of milkweed plants and flowering nectar sources year by year, will help bolster the monarch population, which has taken a nosedive in the past decade. The U.S. Fish and Wildlife Service currently is evaluating the species for protection under the Endangered Species Act.

Top: Kyle Davies digs holes for the root system of the milkweed plants in the Sam Noble Museum's Centennial Prairie.

Right: University of Oklahoma student volunteers help water additional plants in the background of another native plant, the blue wild indigo. The field also is home to Penstemon oklahomensis, an species of flower endemic to Oklahoma.

"The population is only a 10th of what it used to be and the numbers continue to drop for several reasons," said Katrina Menard, Ph.D., the museum's curator of recent invertebrates. "The biggest reason is habitat loss, both in Mexico, where they winter, and here in the U.S. There just isn't enough milkweed here and trees for them to roost in Mexico."

A butterfly garden, located at the front of the museum, beckons adult butterflies and provides food in the form of flowering nectar plants. Caterpillars, on the other hand, need a host plant such as milkweed for sustenance.

To realize the waystation at the Sam Noble Museum, dozens of volunteers and museum staff spanning multiple disciplines united to ready the Centennial Prairie for this fall's monarch migration. In spring 2017, the group of conservationists spent hours raking the prairie and planting native milkweed. In addition to Menard, others leading the charge are Nicholas Czaplewski, Ph.D., curator of vertebrate paleontology; Priscilla Crawford, Ph.D., conservation specialist for the Natural Areas Registry; and Amy Buthod, botanical specialist for the Oklahoma Biological Survey.

The 18-acre prairie also is registered with the National Areas Registry as it's home to a rare flower, the Oklahoma penstemon.

"Small patches of native prairie like this one in suburban areas can make a big difference, not just to sustain larval monarchs, but native wildflowers like the penstemon and other native pollinators as remnants of prairie ecosystems," Czaplewski said. "They help fill gaps along the migration routes, especially southbound through Oklahoma in fall, where other native plants like goldenrods and asters support the adults along the way."

He commended the group for its efforts to save one of North America's most iconic butterflies, adding it doesn't take a scientific background to take part and become a conservationist.

"Cross-border alliances and ordinary people from Canada to Mexico are doing their best to help protect diminishing wildflowers and pollinators that we all depend on so much," Czaplewski added.

Learn more about the Monarch Waystation program by visiting monarchwatch.org.

Museum Welcomes New Curators

Pictured: Hayley Lanier

Hayley Lanier sits in her new office in the Sam Noble Museum, excitedly recounting the time she heard rats chewing and searching for food outside her tent while doing fieldwork on the Aleutian Islands.

Lanier's love of mammalogy has taken her from Kansas, to Wyoming, to the remote wilderness of Alaska and now, to the Sam Noble Museum as the new assistant curator for the mammalogy department. Lanier has done years of fieldwork in Alaska, specifically studying alpine animals such as the pika, which are of particular conservation concern due to climate change.

"Pika are these little rock rabbits, and we've got two species in North America," she said. "They're in particular of conservation concern because these little guys are really temperature-sensitive. One of our concerns with the pika is that we find them on these mountain tops in western North America, and as climate heats up, we find that this space that they're in seems to be diminishing."

Museum Director Michael Mares was eager for Lanier to continue research at Oklahoma's natural history museum.

"She trained as an evolutionary genetics-based mammalogist in Kansas, Alaska and Michigan and works on one of the cutest mammals there is (the pika), although she also studied mice, voles, marmots and tree shrews," he said. "She joins us from the University of Wyoming-Casper, and we look forward to her making major contributions to mammalogy at the Sam Noble Museum."

Lanier's mother worked at the Cleveland Museum of Natural History and often brought her daughter along to work, helping her foster a love for biology, education and curiosity. In fact, curiosity is what helped shape Lanier's career. As an undergrad at the University of Kansas, Lanier applied for a job at the university's natural history museum.

Lanier earned a bachelor's degree in ecology and evolutionary biology from the University of Kansas. She worked her way up in her career by asking questions, and eventually found herself completing her doctorate in biology at the University of Alaska, Fairbanks.

Lanier encourages Oklahomans to never stop asking questions and to get involved at the museum.

"I'd encourage them to keep asking questions. That's the basis of science. Scientists are children who never really grew up."

Raina Heaton hopes to make research on Indigenous languages more accessible in her new position at the Sam Noble Museum.

Heaton's role as curator for the museum's Native American languages collection comes at a crucial moment in history: Almost half the world's languages are in danger of becoming extinct, she said.

"Right now, people come into the collection and work here with us, but the next step is for it to become available online," she said. "Part of what I'm doing right now is trying to figure out how to make that a reality."

Michael Mares, museum director, said Heaton is the ideal person to continue building the museum's Native language collection and continue developing its award-winning language programs.

"Her work fits precisely with the kind of research that has highlighted our collection since it was developed."

Along with managing the Native American languages collection, Heaton is a professor in the Native American studies department at the University of Oklahoma. She teaches one class a semester, with this semester's topic being language documentation and revitalization.

In fact, that's been the subject of much of Heaton's fieldwork, taking her to study the Kaqchikel in Guatemala and Tunica in Marksville, Louisiana. The Tunica Language Project has focused largely on language revitalization, a task made more difficult because Tunica no longer has any Native speakers and it is a linguistic isolate, she said.

A linguistic isolate is a language that is not demonstrably related to any other known languages, which means there are no related languages to look to when it comes

Pictured: Raina Heaton (right)

to addressing gaps in documentation of the language during the revitalization process.

Similarly, many Indigenous languages in Oklahoma are critically endangered, which is why Heaton believes her position at Sam Noble Museum is so unique.

"All of the Native languages of North America are endangered — most of them critically endangered — particularly in Oklahoma, which means you're looking at about 25 or fewer Native fluent speakers. The situation here is really critical. It's a really important place to be doing research right now."

Heaton holds bachelor's and master's degrees in linguistics from Tulane University, and a doctorate in linguistics from the University of Hawaii at Manoa. She's eager to work with local tribes to help preserve their languages.

"Whatever tribes are looking for linguistic help, I would love to work with them," she said.

Sam Noble Museum
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Star Man. Anita Fields
Courtesy: Fred Jones Jr. Museum of Art

Renewal. Yatika Fields
Courtesy: Oklahoma State University Art Collection

Welana Fields with Blanket. Tom Fields
Courtesy: Tom Fields

Coming Soon!

Fluent Generations: The Art of Anita, Tom & Yatika Fields
Saturday, Jan. 20, through Sunday, May 6, 2018