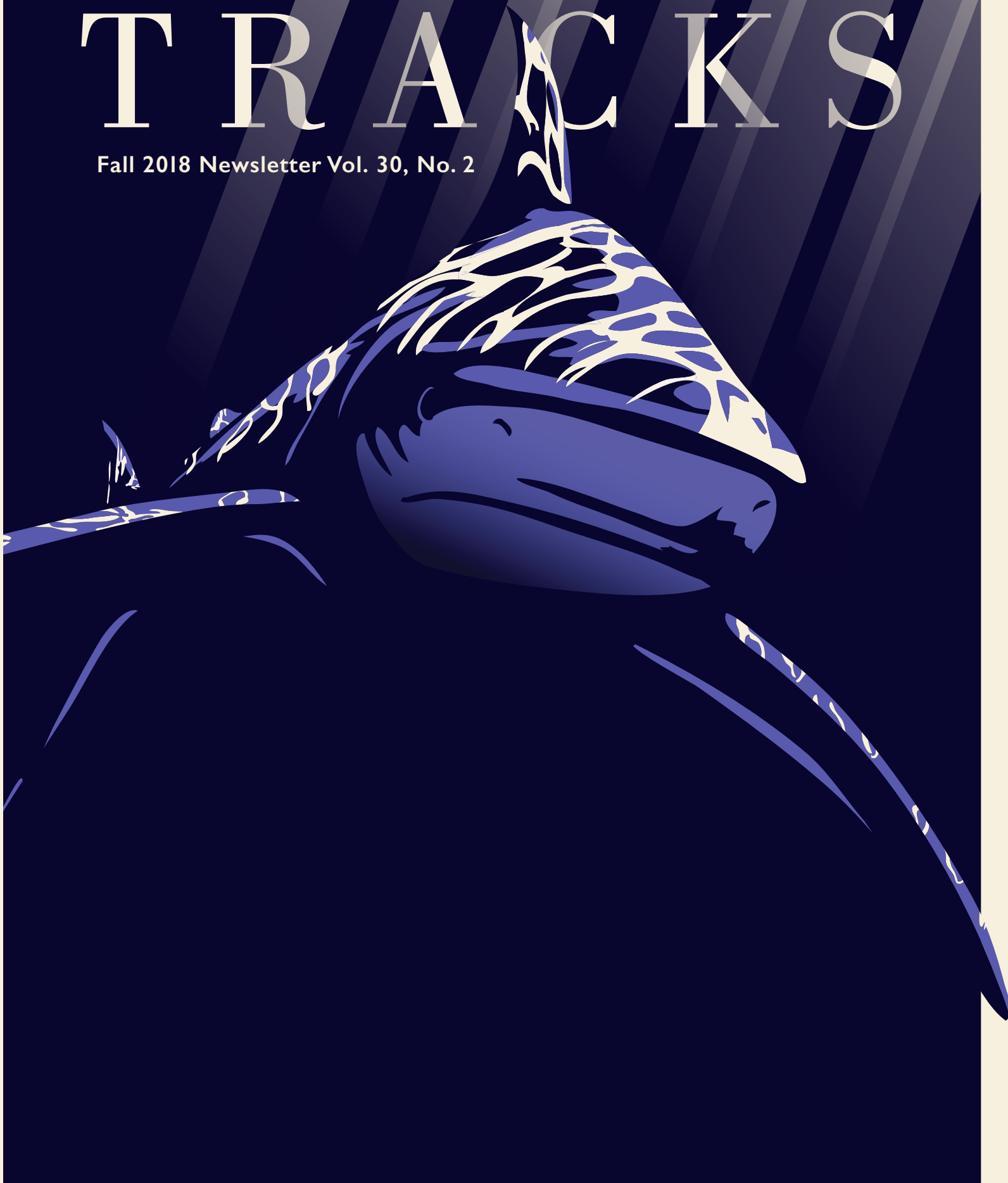


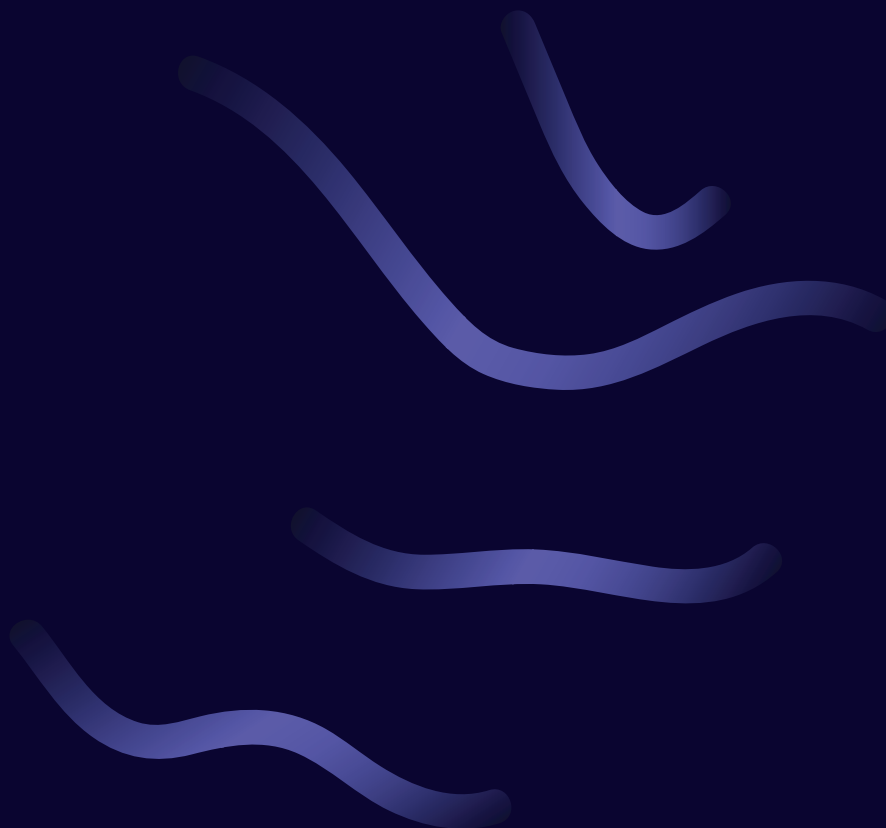


Sam Noble Museum

# TRACKS

Fall 2018 Newsletter Vol. 30, No. 2





TRACKS, SPRING 2018

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#### MUSEUM 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

Editor-in-Chief: Daniel C. Swan

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# FROM THE DIRECTOR

# DEAR MEMBERS,

It is with great pleasure that I share my first letter as interim director of the Sam Noble Museum. I was appointed to a one-year term by the OU Board of Regents in May and assumed the responsibilities of the position on July 1. My first months as your director have been focused on our transition to a new University administration. The museum is well positioned to support President Gallogly's early agenda to expand and enhance graduate education and research training at the University of Oklahoma. This is what we have done for over a century and this is where we excel. Michael Mares, director emeritus, established a solid foundation to elevate our service in these areas to new levels of excellence and innovation. The executive staff of the museum has worked closely with Provost Kyle Harper over the past months to better define future expectations and opportunities at the Sam Noble Museum. I want to express our appreciation to his office for their advocacy for the museum.

I look forward to working with our great Board of Visitors in the coming year and I want to welcome Reggie Whitten to a new term as chairperson. I will benefit from Whitten's experience as a lifetime member of the board and his enduring championship of the museum. We are fortunate to have a board comprised of leaders in education, tribal governance, business, industry and philanthropy. The board works to forward the mission of the museum and provides external guidance and support for institutional development.

In this issue of *Tracks* we highlight the fieldwork undertaken by our curatorial departments over the summer of 2018. The collections and research staff engage in research opportunities both here in Oklahoma and around the globe. Fieldwork is at the core of our mission to enhance our understanding of the physical and cultural world that we inhabit. As a university museum, this process of knowledge production and circulation is anchored in the work of our curators as scholars, professors and student mentors. In addition to the production of scientific data, fieldwork expands collections and fosters institutional collaboration.

In an effort to reduce expenses and control membership fees we are moving to digital editions of *Tracks* and other museum publications. The transition to a digital format will provide exciting opportunities to incorporate video, active links and other interactive elements in our future publications.

I want to close with a note of sincere appreciation to you, our museum members. We value your consistent support for our special exhibition, education, volunteer and public programs. I hope to have the opportunity to visit with each of you over the coming year.

Sincerely,



Daniel C. Swan

Interim Director

October 2018



# MEGALODON

## Largest Shark that Ever Lived

The Megalodon: Largest Shark that Ever Lived exhibit has been turning heads and dropping jaws since May. The 5,000-square-foot exhibit takes visitors back in time to when the prehistoric predator roamed the oceans. At nearly 60-feet in length, the Megalodon ruled the seas for 15 million years before it vanished 2 million years ago.

"I think it's been a fun and exciting exhibit for us to have," says Kyle Davies, fossil preparator for vertebrate paleontology. "You want something that generates public

interaction, and Megalodon definitely catches the public's interest."

Just the sheer size of the Megalodon is enough to draw people to the exhibit.

"The idea that a shark of that size lived on Earth at one time is amazing and mysterious," says Jes Cole, head of education. "It was one of the largest predators and nothing quite like it exists today."

In the exhibit, visitors can walk through the jaws of a full-scale Megalodon framework sculpture to learn about the shark's history, evolution and biology, as well as any misconceptions related to the species.

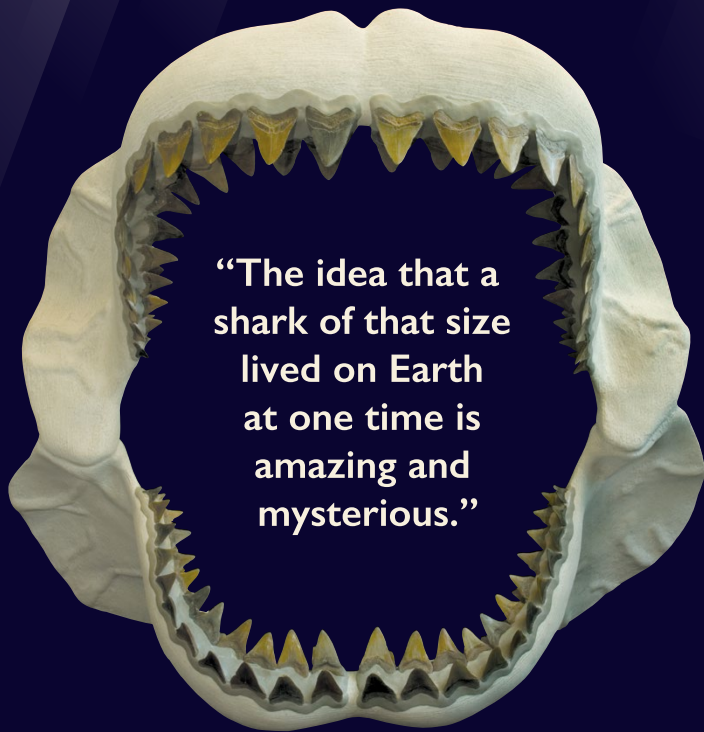
"The displays about the Megalodon's relatives and other fossils sharks really offer visitors a sense of size and relation to the colossal shark," says Davies.

Additional fossils, full-scale models and hands-on components allow visitors to fully immerse themselves in the exhibit while learning about the Megalodon's diet, lifespan, relatives and shark conservation.



*Above: Display of different Megalodon jaw sizes*

*Right: Full-scale metal framework sculpture inside the Megalodon exhibit*



**“The idea that a shark of that size lived on Earth at one time is amazing and mysterious.”**

“The exhibit does a good job of explaining why modern shark conservation is important, and why animals go extinct in the first place,” says Davies. “It emphasizes that once you’ve lost these animals, you’ve lost them permanently.”

The exhibit also debunks Hollywood myths about the threat sharks pose to humans.

“The Megalodon is just like any other predator,” says Cole. “We have this idea that sharks are scary and the Megalodon’s size doesn’t help that, but it was really just another animal doing the best it could to survive at the time.”

Even though the Megalodon is now extinct, its presence in the past tells a fascinating story to all who visit the exhibit.

“My hope is that people walk away with the understanding that sharks are incredible creatures,” says Cole. “By studying the Megalodon and its ecosystem, we can understand what the Earth was like in the past and apply that information to the animals and environments that we study today.”

“Megalodon: Largest Shark that Ever Lived” was produced by the Florida Museum of Natural History, Gainesville, with support from the National Science Foundation. The exhibit is sponsored by Fowler Honda. The exhibit will be on display at the Sam Noble Museum through Jan. 6, 2019.



# NO LIMITS TO LEARNING

At certain times of the day, visitors of the Sam Noble Museum can enhance their experience by interacting with docents. Docent, derived from the Latin word, “Docere,” means “to teach.” Docents are one of the driving forces behind the museum’s mission to inspire minds and to better understand the natural and cultural world.

“The docents are in the museum galleries to interpret the information and facts to make it meaningful for our guests, so they can better relate to it,” says Lindsay Kaib, volunteer coordinator.

The majority of docents at the Sam Noble Museum are retired, and include former educators and scientists.

“One thing that they have in common is that they all have a love of learning, and a love of teaching people,” says Kaib. “I think those characteristics go hand-in-hand in making a great docent.”

Docents have been around since the museum first opened, before a full gallery was even set up. To become a docent, those interested must attend an introductory training, tour all the galleries and shadow a current docent.

Bill Miller and Karen Hooten are two of the very first docents to volunteer at the museum. Miller, a retired manufacturing and welding engineer, began volunteering in the fall of 2001, and became a docent in the Ancient Life gallery in 2002.

“I love having the chance to pass on information that I’ve learned to families and children as a docent,” says Miller. “It has really made me grow from an introvert to an extrovert. It’s changed my life.”

Hooten is also retired. As a docent, she spends her time visiting with guests in the Hall of the People of Oklahoma gallery.





*Above: Bill Miller, docent, talks with visitors in the Hall of the People of Oklahoma gallery  
Left: A docent interacts with a child visitor*

“My favorite part about being a docent is the people,” says Hooten. “I almost always learn something new, whether it’s from the guests with whom I talk, or other volunteers.”

Both Hooten and Miller love the exchange of knowledge that occurs between docents and museum visitors.

“You get to meet all kinds of people, and if you listen, you can learn from them,” says Hooten. “Or, you can plant a seed in a child to help them learn more.”

Docents can be found in each permanent exhibit at the museum, offering detailed and in-depth information about the displays, as well as operating a cart full of artifacts that visitors can touch.

“They interact a lot with the guests and that really adds to the experience,” says Kaib. “Communication is an art form, and the docents are very good at it. It takes practice and skill, and they’re committed to that.”

The Sam Noble Museum currently has 40 active docents. Over the last year, docents have volunteered approximately 8,025 hours of their time.

“Docents add a very personal touch to the museum,” says Kaib. “They definitely have a huge impact on the visitor experience.”

# NATIVE AMERICAN LANGUAGES

The Native American Languages department is one of 12 research divisions at the Sam Noble Museum. Nine of the divisions involve life sciences such as mammals, birds and fish. The remaining three are social sciences: ethnology, sociology and Native American languages.

“When you go to a natural history museum, it’s common to see dinosaur bones, fossils and other species and relics that tell the story of natural science,” says Nicholas Wojcik, Native American languages collection manager. “It’s rare that you go to a museum that has an emphasis on languages, which is an integral part of natural history. It’s how we communicate.”

With more than 39 federally recognized tribes in the state, Oklahoma is a prime place to record, preserve and revitalize Native American languages. A large part of the NAL collection is dedicated to languages of tribes in Oklahoma; however, that doesn’t make up the entire space. At last count, the collection represents over 175 different languages from all over the world.

“Every language is the entire history of a people – you know things about what they ate, the places they lived, how they survived and the way their society was structured,” says Raina Heaton, Ph.D., assistant curator of Native American Languages, assistant professor of Native American studies. “The idea of losing that information is

scary! We want to do everything we can do to preserve that.”

The NAL department collects and preserves languages in three main forms: texts, audio recordings and video recordings. Since the collection’s inception in 2002, documenting languages in the form of audio and video recordings have transitioned from older formats such as cassette and VHS tapes to more modernized, digital files.

“The collection archive is considered one of the smallest in the museum in terms of physical space,” says Wojcik. “But we occupy the most digital space with about 14 terabytes of data.”

In addition to the collection archive, the NAL department also has a reference library and an audio/video lab. The reference library focuses exclusively on published materials, such as books and journals, while unpublished materials, such as field notes, remain in the archive.

In the audio lab, Wojcik digitizes recordings captured on obsolete media formats, preserves the originals and makes the new digital files accessible to others. Currently, all NAL material is only accessible to the general public via appointment, but the department is working on a grant that will eventually make much of it available online.

“It’s essential for students, researchers, teachers and others to be able to use these resources,” says Wojcik. “Without making these materials discoverable, all they do is just sit on the shelf.”

The audio/visual lab can also function as an on-site recording studio.

“We’ve had individuals and groups from nearly two dozen Oklahoma tribes come in and tell folktales, sing songs and tell stories,” says Wojcik. “The recordings then become part of our archive, and it’s one of the various ways we grow our collection.”

The NAL department also works to revitalize languages through public programs, such as the Oklahoma Native American Youth Language Fair and workshops that teach students how to record their own oral history.

Now in its 17th year, the language fair offers students in grades pre-K through 12 a chance to demonstrate how they’re learning Native American languages. The students perform dances, skits and songs, as well as submit original poster artwork, books, comics and cartoons, essays, poems and films.

“The language fair is fantastic, and one of the best public programs I’ve been involved in,” says Heaton. “I think nearly everyone in the state of Oklahoma knows about it, and I think its longevity is a testimony to its excellence.”

The language fair has been the largest public program at the museum for a number of years. Last year’s fair had over 1,000 participants and 3,000 attendees.

While the Sam Noble Museum has made strides in preserving and revitalizing Native American languages through documentation and community outreach efforts, it’s only one piece in a larger puzzle.

“Having languages documented and affixed to some sort of media is a start, but you have to take into consideration other sorts of opportunities for languages to be revitalized,” says Wojcik. “Events like the language fair and other outreach programs tie in together to help us revitalize languages, as well as celebrate them.”



*Above: Inside the Native American Languages library  
Left: Equipment inside the audio/visual lab*

# FROM THE FIELD

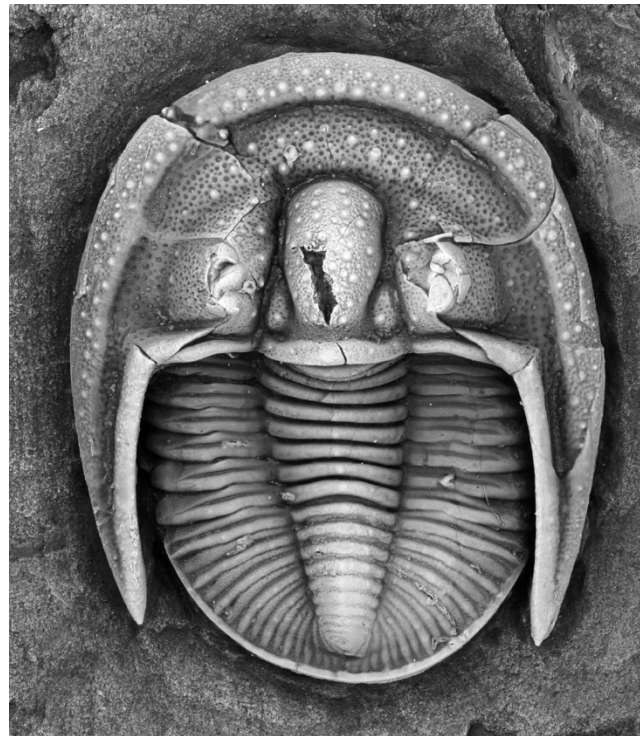
## INVERTEBRATE PALEONTOLOGY

In June, the Department of Invertebrate Paleontology teamed up with the Sam Noble Museum's education department to offer a week-long, field- and lab-based teacher institute that was funded by a National Science Foundation Grant to Steve Westrop, Ph.D., curator of invertebrate paleontology, and the ExplorOlogy® program. The institute focused on changes in marine communities over an interval of more than 250 million years between the Devonian and Cretaceous periods. Over two days of fieldwork, 10 teachers led by Westrop and graduate student Madison Armstrong braved the heat and chiggers to collect invertebrate fossils from a Devonian site in the Arbuckle Mountains, and a Cretaceous site along the Red River.

In the lab, Westrop and Armstrong helped the teachers identify the fossils, reconstruct the communities and determine how they had changed over time. They quickly realized that common groups of Devonian fossils like brachiopods and trilobites were quite different from the important kinds of fossils in the Cretaceous period, which included clams and sea urchins. Westrop and Armstrong then worked with the teachers to develop hypotheses to explain why communities changed, eventually arriving at what is often described as a "marine revolution," caused by a dramatic increase in the number of predators that ate invertebrates with hard shells. Animals like brachiopods, which are mostly unable to move as adults and simply lie on the sea floor, were poorly adapted to this new world order. They became rare, and other groups of mobile, often burrowing animals, like clams, took over.

To help the teachers bring these ideas back to the classroom, Heléna Lucas and the education department developed lesson plans for each of the four standard grade-level groupings, and the teachers tested them and gave feedback for improvement on the final day of the institute. The fossils that were collected in the field are being used by the education department as part of their Discovery Kit program. Sets of fossils that can be used with the lesson plans will be available to teachers across the state.

The institute led teachers from the field to the lab, and then to classroom situations. It gave them a glimpse of what goes into paleontological research, and how paleontologists reconstruct the history of life. The hope is that they will be able to take these experiences to their students, and get them excited about science.



*Complete skeleton of the trilobite Cordania falcata from the Devonian Period (about 415 million years old)*

## NATIVE AMERICAN LANGUAGES

Native American Languages staff spent the month of July doing preliminary fieldwork in the Paraguayan Chaco. The purpose of the trip was to establish connections and lay the groundwork for future work on Enenlhet Apaievoma (literally "Enenlhet person's speech," also in the literature as Toba or Toba-Maskoy (ISO: tmf)), a language spoken by ca. 1,200-2,000 people in the central Chaco. Linguistically, it is a member of a small but closely-related family of six languages (Enlhet-Enenlhet), none of which has any thorough linguistic documentation.

Additionally, the sub-grouping relationships between these languages have not yet been established, which is one important area for further research. According to the 2002 census, Enenlhet Apaievoma is the third-smallest language in the family. The smallest language, Guaná (ISO: gva), reportedly no longer has any native speakers.

The speakers of Enlhet-Enenlhet languages are formerly hunter-gatherer groups whose territory includes part of the modern departments of Presidente Hayes, Boquerón and Alto Paraguay. However, their way of life was drastically altered by the Chaco War and the influx of ranchers and Mennonites in the 1930s (quite recent in terms of colonial contact in the Americas), which re-shaped and fenced off the landscape such that the indigenous peoples who were not murdered or had not died of disease were forced into sedentary relationships where they were dependent on the non-indigenous settlers for their survival. As a result, Enenlhet people are spread across the eastern part of the central Chaco, living in small indigenous villages, in Mennonite centers or in isolated family groups as workers on cattle ranches.

NAL staff visited the Enenlhet communities in Casanillo, Pozo Amarillo and Iettelev, and found support for language documentation and other language-related projects. While children in many of these communities still acquire the language, speakers are aware that the language is under increasing pressure from Spanish and Paraguayan Guaraní. Almost all adults are multilingual, and speaker communities are linguistically diverse due to widespread marriage between linguistic groups, particularly with Guaraní speakers and speakers of other Enlhet-Enenlhet languages.

In addition to conducting fieldwork in Paraguay, the Native American Languages collection also continued to do public outreach, showcasing the collection at the CoLang meeting in June 2018 in Gainesville, Florida. CoLang is an academic summer institute in which linguists, fieldworkers, students, members of indigenous language communities and other individuals interested in community-based language work in language documentation and field linguistics receive training. The slides from the presentation are available on the Native American Languages webpage.

## VERTEBRATE PALEONTOLOGY

Members of the vertebrate paleontology department worked out in western Oklahoma in Miocene sedimentary rocks of the Ogallala Formation. Several years ago, vertebrate paleontology staff from the Sam Noble Museum had worked at a locality north of Cheyenne, where they plaster-jacketed and collected fossils of late Miocene mammals that are still being prepared in the lab, mostly of camels and horses. This summer, the department re-visited the area with native explorers and picked up a partial upper jaw from a camel, and a forearm bone of a small horse.

Staff also looked in some beds that they hope are Pliocene in age, because Oklahoma has no definite Pliocene fossil vertebrates. However, they unfortunately came up empty-handed even though the sediments looked promising.

Vertebrate paleontology personnel also visited an area farther north, in Beaver County, where they visited a local land-owner who kindly donated a Miocene fish skeleton he had found in about 1950 when he was in the seventh or eighth grade. He accompanied the crew as they visited a site near his home where they found a few Miocene fish scales and vertebrae. One of the scales belongs to a gar, which have very characteristic rhomboid scales that are shiny with enamel-like bone on the outside. These fossils are probably about 9 to 11 million years old. It seems gars have been in Oklahoma since at least the medial Cretaceous period, and are still present today.



*Teachers collect fossils from Devonian rocks at White Mound, Murray County, Oklahoma.*

# PESTS? NO PROBLEM!

While most people spend their days at a desk surrounded by coworkers, Andy Estrada spends the majority of his time with a different type of company.

Estrada, Integrated Pest Management technician, takes special care to track, record and study various different pests that have made their way into the Sam Noble Museum.

“I see a variety of insects here – most commonly beetles and spiders,” says Estrada. “But I’ve also seen other things, such as Mediterranean geckos, mice and centipedes.”

When the Sam Noble Museum first opened its doors in 1899, it was known as the Stovall Museum and was located just south of the stadium on the University of Oklahoma campus. In May 2000, the museum moved into a new building off Chautauqua Avenue, where it currently resides.

“Since we moved to a new building, we were able to start with a ‘zero’ point; there were no bugs in May 2000,” says Brandi Coyner, IPM supervisor. “This building was created from the ground up to be a natural history museum, so from the start, we were able to have a full-time IPM position.”

The Sam Noble Museum is the only museum in Oklahoma to have a full-time IPM technician on staff, and the department is extremely well-established. Integrated Pest Management takes a proactive approach, doing its best to prevent pests from ever entering the building.

“The IPM model is a triangle: insects and pests need food, water and shelter to survive and reproduce,” explains Estrada. “If you take away one of those corners, you won’t have bugs.”

In addition to following the triangle model, the IPM department performs bi-annual, building-wide bug sprays and monitors sticky traps that are placed in strategic locations throughout all areas in the museum. Staff members of the museum also adhere to strict policies regarding food, trash and other waste.

“A lot of people assume it’s an environmental thing when we say that we don’t allow corrugated cardboard



*Andy Estrada, IPM technician*

inside the museum,” says Coyner. “It’s actually because corrugated cardboard is a great shelter for bugs.”

Anything coming into the museum that will stay inside the museum may be treated for potential pests. This includes things like new collection items, exhibit displays, donations and even decorations that will be placed in staff offices. There are two main methods of treatment: freezing and the carbon dioxide bubble, or just “the bubble.”

The freezing method is simple: items are logged, double-bagged and placed in a large freezer chest for 10 days, then taken out to acclimate back to room temperature for 24 hours. The bubble is a giant, plastic tent in the shape of a cube with a door in the front. With this type of treatment, the tent is sealed, air is pumped out of one port hole in the side of the tent and pure carbon dioxide is pumped into another port on the other side. The process is repeated until the inside of the tent is at 80 percent carbon dioxide, and items are held inside for a month.

The type of treatment required depends on the type of object.

“Both levels of treatment cause expansion and contraction of objects, but it’s more prominent in the freezing method,” says Coyner. “A great example would be a Native American drum – any expansion or contraction would damage it, so the bubble is a better treatment option.”

While keeping the museum pest-free is a top priority, not everything is considered a pest. The museum specifies pests and non-pests based on the material they can damage, versus their danger to humans.

“A lot of pests aren’t dangerous to humans, but will easily damage collection materials,” says Coyner. “Mice and cockroaches are considered a serious pest because they will eat anything.”

Logging all pest incidents can seem tedious, but it serves an important role. Estrada is able to use that information to anticipate the arrival of certain pests or spikes in pests at certain times.

“Spiders are predatory, so when we see a spike in spiders on the sticky traps, we’ll usually see a spike in other bugs as well,” says Estrada. “Previous data has also shown

that every time someone works on the water or steam pipe system near our building, we’ll see a brief spike in cockroaches in the building.”

Estrada also pays attention to seasonal changes.

“When it gets warmer outside, bugs will become active and may make their way inside,” explains Estrada. “But when it gets cold outside, bugs are moving inside to stay warm.”

Thanks to the dedication of all staff and volunteers, as well as proactive initiatives, museum staff and visitors don’t need to worry much about pests.

“I can’t think of anything that’s come into the museum that’s been infested with pests or insects,” says Coyner. “Honestly, we have treated and inspected thousands and thousands of items and we find relatively few pests.”



*Corrugated cardboard kept outside the museum to avoid pests*



Sam Noble Museum  
THE UNIVERSITY OF OKLAHOMA®

**NOW SHOWING**

# Attack Along the Washita

**NOV. 15-DEC. 15, 2018**

This special exhibition is in commemoration of the 150th anniversary of the 7th Cavalry's attack on Black Kettles encampment. The exhibition features a Southern Cheyenne ledger book that contains drawings by an unknown Cheyenne artist that record important events in the history of the Cheyenne people. The page displayed will feature an image of Chief Roman Nose Thunder as he counts coup (war honors) on soldiers from Major Elliot's detachment from the 7th Cavalry.

On Saturday, December 8, a National Parks Service Ranger from the Fort Washita National Monument will be present in the exhibition to discuss the history of the 7th Cavalry in Oklahoma.