



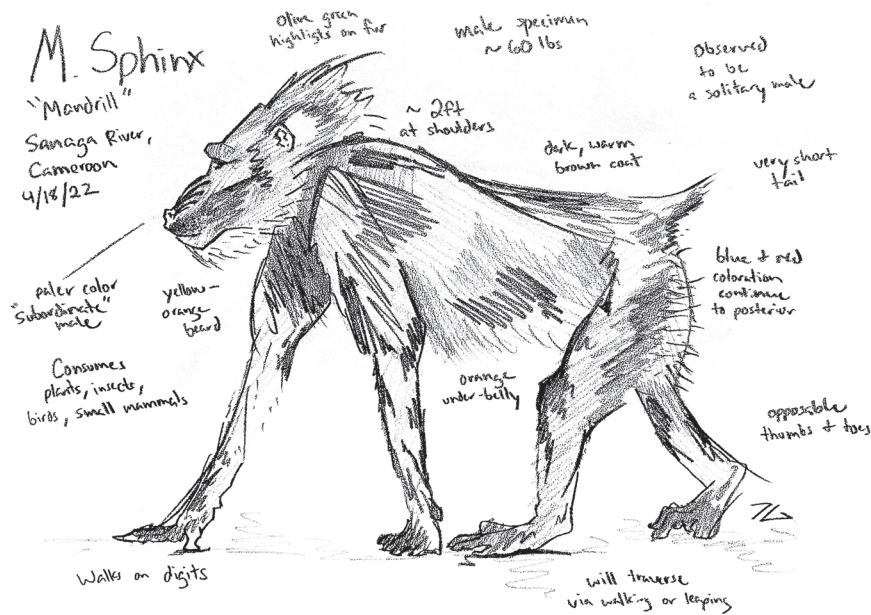
Food Sources:



OU visual arts students meet the intricate world of scientific illustration and a potential new career path.

# Beyond Drawing

BY SUSAN GROSSMAN



Mandrillus sphinx details by artist Jarrett Garza.

Waiting for what can seem like hours in a doctor's examination room, we've all been faced with nothing to look at but the anatomical drawings adorning the walls. It's hard not to stare in ghoulish fascination at the inner workings of the human eye or layers of skin. Likewise, visits to botanical gardens are enriched by interpretive signs detailing the intricate structure of plants, and paintings of giant pterodactyls swooping across ancient landscapes have brought extinct species to life in natural history museums around the world.

These are all examples of scientific illustration, a discipline practiced for centuries and evidence of a collaborative partnership between artists and scientists to visually communicate complex ideas.

Simply defined, scientific illustration is art in the service of science.

More than a dozen students from the School of Visual Arts in the University of Oklahoma's Weitzenhoffer Family College of Fine Arts spent last semester learning this specialized form of visual communication. Aided by a myriad of specimens, trips to campus greenhouses, and travels to a wilderness area, they were introduced to new ways of applying their talents and expanding their artistic repertoire.

Exposing students to the world of scientific illustration was an idea that had percolated for some time with Peter Frosie, OU School of Visual Arts director and a professor of art, technology and culture. Following discussions with colleagues across campus, Frosie felt the timing was right to offer the class and tapped drawing instructor Haley Prestifilippo to lead the first-time effort.

OPPOSITE - In a classic example of scientific illustration, Sophie Bowen details the markings, habitat and food sources of the Eastern spotted skunk.

"Haley does a lot of natural-world drawing in her work and has enthusiasm in this space of scientific illustration," he



Halley Prestifilippo

Nick Czaplewski, curator of vertebrate paleontology, takes visual arts students on a behind-the-scenes tour of paleontology collections at the Sam Noble Oklahoma Museum of Natural History.



Artist Chris Lee depicts a covey of Northern Bobwhites in the field using a mix of pen and ink and watercolors.

says. “With the ongoing energy in what was a dormant area of our programming, her coming on board was perfect timing to launch this course.”

Froslic says a foundation in drawing is fundamental to enrolling in the upper-level class. Students need to have a good grasp on such things as highlighting and shadowing, and understanding composition and visual hierarchy are essential.

Prestifilippo, an artist who works primarily in graphite, taught as an instructor in OU’s Christopher C. Gibbs College of Architecture before moving to the College of Fine Arts last year to expand its drawing program. She says it was an exciting prospect to bring the scientific illustration class to life.

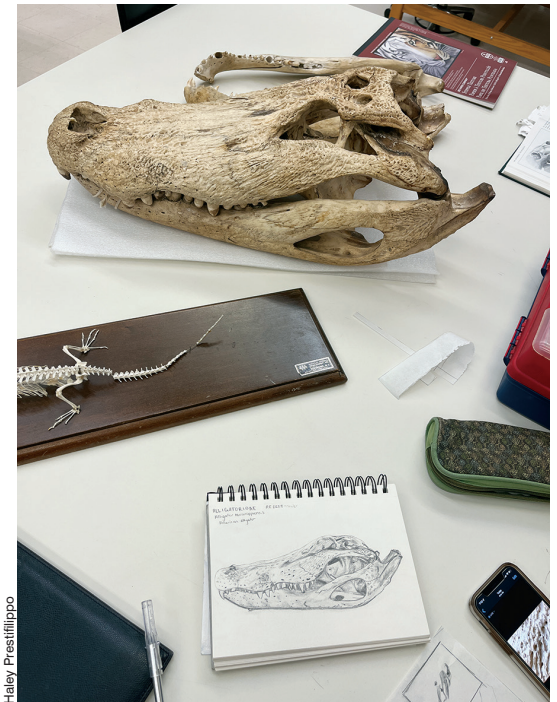
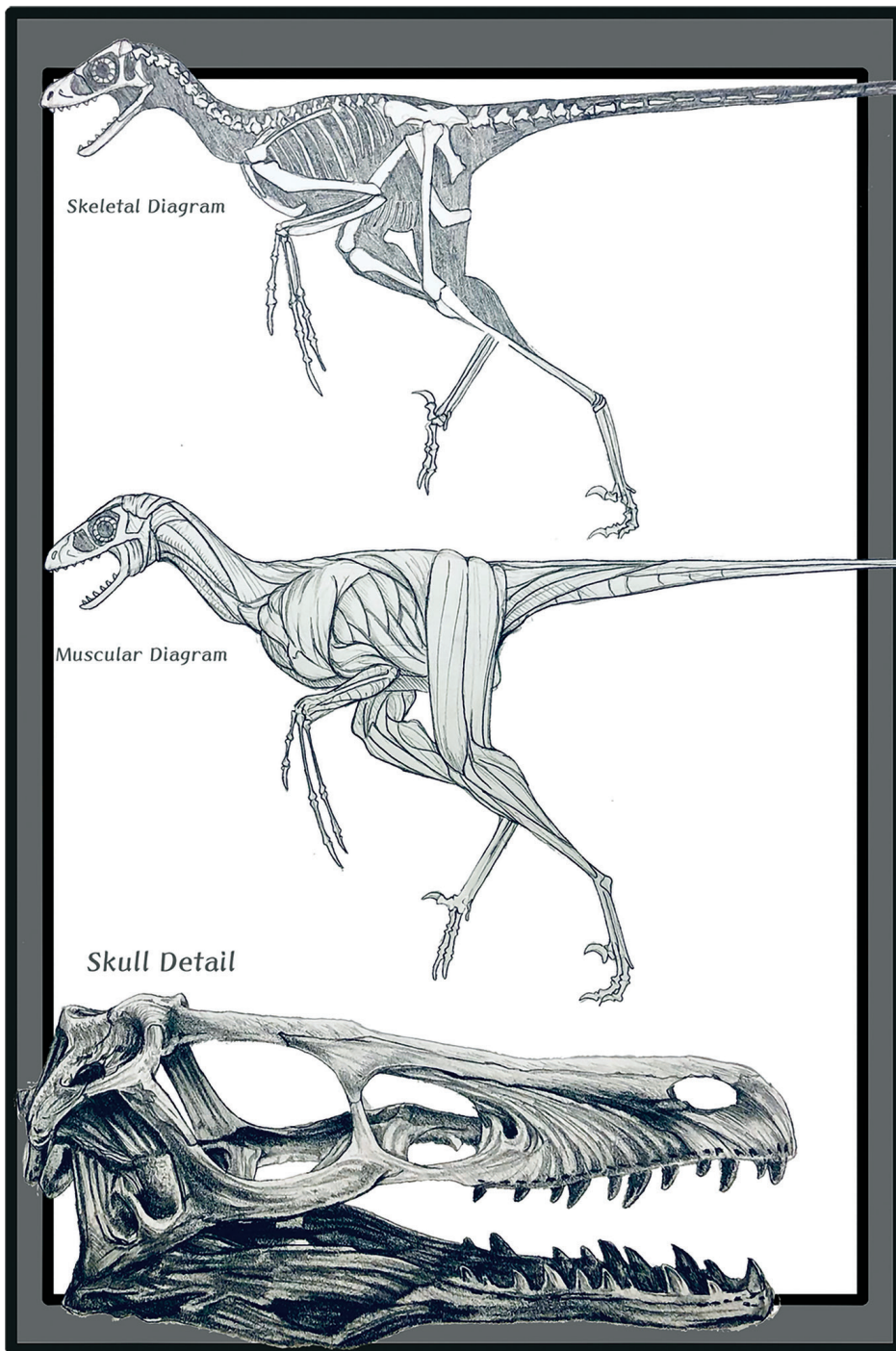
“Scientific illustration is a collaboration between an artist and a scientist,” Prestifilippo says. “An obvious example of this work is in textbooks; we have to rely on the images because sometimes it is

hard to comprehend what is being talked about. We live in a world where we are constantly trying to explain things visually. This is the training, the understanding of nuance, to translate information to communicate visually.”

An immense scientific illustration learning lab is available right on OU’s Norman campus at the Sam Noble Oklahoma Museum of Natural History. When Prestifilippo asked for collaborators interested in helping with the course, museum preparators, curators and paleontologists pitched in

to showcase the work of the museum. She gives them high marks for their work with her students and notes many are also talented illustrators themselves, particularly Nick Czaplewski, curator of vertebrate paleontology at the museum.

“Nick essentially co-taught the class and ended up being so instrumental,” Prestifilippo says. “I created all the assignments and art-related instruction, while Nick gave lectures and demonstrations regarding scientific elements such as the use of tools and handling of specimens. Illustration and



▲ Students draw the skull of a recent specimen of *Alligator mississippiensis*, more commonly known as the American alligator.

◀ CourtLynn Hanes' scientific illustration of the skeleton and reconstructed musculature of *Microaptor* (top) and the skull of *Velociraptor*.

drawing have been an essential component of Nick's research, and he is an incredible artist, as well."

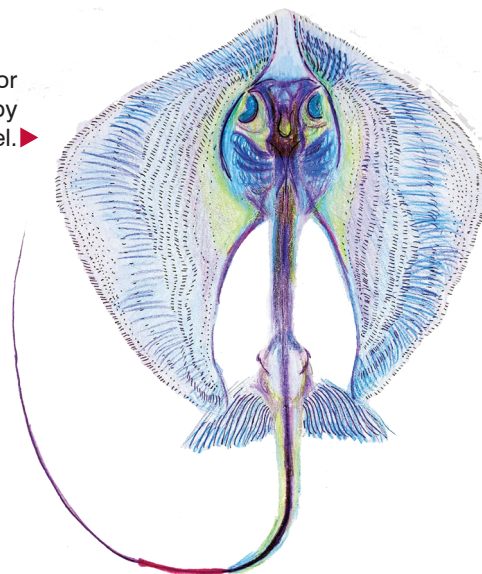
Working with paleontologists, scientific illustrators show the way animals may have looked millions of years ago. Since the animals are extinct, these drawings are often based on reconstructed fossils.

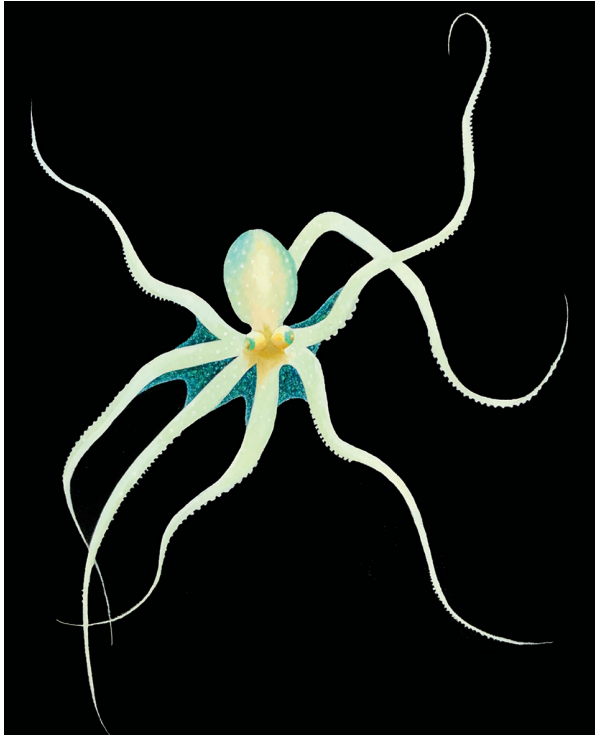
For his part, Czaplewski jumped at the chance to assist with teaching the inaugural class.

"I suppose you could say I volunteered, because I was planning to retire but decided to stay on to help out," he says. "All of us in paleontology have some limited experience in line art that we use for our illustrations in the field, and I thought it might be fun to help teach it. Haley had work time when the students would quietly sketch, and it was such a nice environment, I did some drawings myself."

Czaplewski adds he was impressed by the level of talent and pleased the class employed traditional artistic methods of hand drawing using

The Southern stingray, or *Hypanus Americanus*, as drawn by Harper Keppel. ▶





▲ Young Caribbean reef octopus by Kayla Hawkins, using acrylic paint on canvas board.

CourtLynn Hanes' scientific illustrations demonstrate how researchers envision the flight, roosting and prey of the *Microraptor* at least 100 million years ago. ▶



pencils, watercolors and charcoal. He sees an ongoing partnership with the museum as the course continues to develop.

“We have all these specimens to be illustrated, and the art school has the talent and people to do it, so this was a nice collaboration,” he says. “I was amazed at how good these students are, and astounded at certain aspects they have mastered, like shadowing and matching colors. For example, a blue jay is not just one color of blue but multiple shades of blue. Some students could match those colors exactly.”

The class broadened what was originally a more limited artistic career horizon for Kayla Hawkins. The senior fine arts major from Bethany, Okla., studies painting and drawing with an emphasis on portraiture. She is minoring in Spanish and pursuing a teaching certificate with plans to become a high school art teacher following her 2023 graduation. She says time spent learning scientific illustration helped her move out of a comfort zone.

“We got to see how art and science come together to create an accurate piece of work,” Hawkins says. “You have to do a lot of research to ensure illustrations

are scientifically accurate. Learning scientific illustration broadened our perspectives and introduced me to job opportunities that I had not thought of before. I can see how we could use what we learned in this class in a lot of different ways.”

Chaani Rao, a Plano, Texas, senior double majoring in mechanical engineering and studio art with a focus on printmaking and drawing, says taking the course taught him to slow down and take the time to look at something thoroughly.

“When you are in the mindset to create content and meet deadlines, you don’t always step back and do an

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Bee hummingbird, illustrated by Evangeline Noah.

Students in the Scientific Illustration course drew from life, as well as print and online sources. ▼

in-depth study,” he says. “Scientific illustrations have to be so detailed and accurate. Outside of this class, I rarely spent a lot of time on a sketch, but here, I spent hours on one little section.”

Rao says he did not know the field of scientific illustration existed until he joined the class, but today, sees the importance of artists working with scientists.

“I never envisioned an artist sitting down and drawing these images, but now, understanding the field, I can see why you might need someone who has the eye to draw. It could make an interesting career option.”

Froslic says learning the art of scientific illustration adds beneficial skills to students’ creative portfolios and, given the positive response to the first offering, he has plans to expand the course into a degree program in the future. Studying fossils and plants is an entryway into the field, Froslic adds, but

scientific illustration encompasses many academic areas, including anatomy, physics, chemistry and medicine.

“There are a lot of opportunities,” he says. “I would like to expand into other disciplines on campus. There’s an energy and buzz about scientific illustration because I think there is a collective need for collaboration right now. Students have been telling me that this is their favorite class.”

“This class helps our students look beyond the traditional concepts of being an artist and gain experience beyond the art bubble,” Prestifilippo adds. “As with a lot of degree tracks, we don’t tend to look outside of our area of expertise. This new class is an awesome opportunity for students to be exposed to other disciplines on campus, and to learn to collaborate.”

*Susan Grossman is a freelance writer based in Norman, Okla.*



Hailey Prestifilippo