

Research & Collections Newsletter



Summer 2016

re•search (ri-sûrch', rē'sûrch) n. **1.** Scholarly or scientific investigation or inquiry. See synonyms at inquiry. **2.** Close, careful study. **3.** When performed on collections, the *raison d'être* of all great natural history museums.

Collection News

Anthropology

Ethnology

At the end of March, Anthropology received a donation of 60 items collected by Donald R. Adams in the early 1960's in Tanzania (then called Tanganyika). Mr. Adams was there working with the *Teachers for East Africa Project*. This project provided East African schools with teachers during a transition time when British overseas teachers were leaving as Tanganyika gained its independence from British rule.

Included in the donation were a few baskets of the type used when gathering honey. In the 1960's, honey was still a major source of subsistence and revenue for the native population, even more highly prized than game meat. Their traditional method of honey gathering involved an interesting cooperative relationship with the Honeyguide bird. This bird would deliberately lead the gatherers to wild bees' nests so that it could feed on the dead bees and beeswax the gatherers left behind. To go with the donation, Mr. Adams recently provided this image he took in Kiganga, Tanganyika. The two women on the right are weaving the same type of honey collecting baskets that he donated. Honey gatherers were typically men and on this day, the three men pictured took Mr. Adams to search for a hive. To do this the men would "talk" back and forth with the Honeyguide bird via whistles until the bird led them to a hive.



Archaeology

During April the Anthropology Department received this wonderful prehistoric Chimú (A.D. 850–1470) llama stirrup spout vessel from Peru. It is part of a donation by Amanda Montano that was part of a collection made by her grandparents. This example was collected in from Peru during 1950's. Llamas were often used as beasts of burden by the ancient cultures of Peru which is nicely reflected in this example.

The other part of the donation was some nice historic archaeological items from Trinidad/Tobago that were recovered from her grandfather while he was excavating trenches for water lines. These consist of a ceramic wine, ink bottle and inkwell, a clay pipe from Glasgow, Scotland and a copper pot which reflect the British occupation period of the mid to late 19th century of Trinidad/Tobago. These items are a welcome addition to our historical archaeological collections.



Dinosaur Institute



Colin Weightman, President of Comco Inc. in Burbank, CA, donated 4 microblaster air-abrasive units to the Dinosaur Institute on December 22, 2015. This equipment is used in the preparation of fossil specimens, particularly delicate and 3-dimensionally complex material.

Left to Right: Dr. Nate Smith and Mr. Colin Weightman.

History

A copy print of a rare panoramic portrait showing the citrus workers of Murphy Ranch formerly located in Whittier, California, has been donated to the Seaver Center by Mr. Alfonso Lemus. Mr. Lemus also donated copies of family photographs related to Simons Brick Company once located in today's cities of Commerce and Montebello, California.

Collections Manager Betty Uyeda with Al Lemus.



As sometimes happens, independent researchers just happen to visit the Seaver Center at the same time find they have similar interests and end up helping each other's research by providing missing links that complement each other's work. This occurred one week in April when British film historian Stephen Bottomore researching early



Mrs. Mercedes Ferrell donated digital photographs from her family archive. She is the surviving daughter of Genaro Prado, the "sheriff" of Simons, a company town that sprouted from Simons Brick Company's plant number three.

Shown are Mrs. Ferrell and her son James.

screen advertising collaborated with Northern California author Linda Waggoner writing a biography of Red Wing, the first Native American silent film actress. Shown here, they both reported that the "collaboration was really helpful" and "netted excellent results for both of us."



Ichthyology



Broomtail Grouper, LACM 58311-1.

A large broomtail grouper, *Mycteroperca xenarcha*, was swept into the Redondo Beach Power Plant's screen wells on May 16th. The fish was given to the Sea Lab next door for their aquarium but it died and was offered to various local scientific groups. The Ichthyology Section at the Museum decided to take it to make a skeleton. The fish weighed 51.2 kg and was over 1.2 meters standard length, close to their maximum size. Broomtail groupers are somewhat rare in California. However, within the past five or six years there has been some sighted near King Harbor and Hermosa Reef.

Field Work

Dinosaur Institute

Nathan Smith, Alyssa Bell, and Bryan Gee traveled to Petrified Forest National Park in Arizona from March 12th–20th to collect Triassic vertebrates from the Chinle Formation. The team revisited a locality where the skull of a metoposaurid (possibly a new species) had been recovered, and prospected other areas in the park to identify areas with future potential.

Scutes collected from the Triassic Chinle Formation.



Marine Biodiversity Center



In preparation for a collaborative BioBlitz with the National Park Service in May (see *Public Outreach*), MBC staff visited Malibu pier for a preliminary collecting trip on April 4. Marine invertebrates from multiple phyla were collected from the sandy beach, the small rocky intertidal zone, above-water pier pilings, and (by snorkeling) submerged pilings. These specimens are being collected as part of the MBC's DNA barcoding initiative. Photos are by Kelsey Bailey.

Regina Wetzer and Leslie Harris working under Malibu Pier.



Kathy Omura's eagle eye questing for specimens, with Malibu Pier (being refurbished) behind her.

On April 5th, Marine Biodiversity Center staff (Kathy Omura and Jenessa Wall) were invited to join the Cabrillo Marine Aquarium for their long-running Salt Marsh Survey at Salinas de San Pedro. At 4 preset stations in the salt marsh aquarium staff assisted by CSU Long Beach students counted and measured invertebrates collected from box cores and at the end of the day a seine net was used to sample the fish and invertebrates from the marsh water. The MBC used this opportunity to collect fresh marine invertebrates into 95% ethanol, adding to our growing collection of local molecular grade specimens.

CSU Long Beach students sorting invertebrates out of sediment from a box core sample.



MBC and Crustacea staff joined the Cabrillo Beach Aquarium and a group of enthusiastic volunteers for the annual survey at Portugese Bend on April 17. This survey project has been sampling three sites (Point Vicente, Abalone Cove, and Portugese Bend) since 1975, seeking to discover and document the impacts of human use of the shore on the local invertebrate population. By using a repeatable grid of census locations and expert assistance, citizen scientist observations from year to year are well controlled and comparable.

With the cooperation of AltaSea and the Los Angeles Maritime Institute (LAMI), the MBC deployed a long-term marine invertebrate collecting device in the Los Angeles Harbor on May 6. These devices, called "ARMS" (for *Autonomous Reef Monitoring Structures*) have a history of being used, particularly in tropical areas, to collect members of the "fouling community" that will take up residence on the solid plastic plates. Because it is much easier to dislodge the animals from flat plastic, specimens from ARMS are frequently in much better condition than those collected directly from natural rough surfaces. We will revisit the devices every few months to see how



Bruce Heyman, Director of the Los Angeles Maritime Institute, using his maritime skills to help rig the ARMS for deployment.

the colonization is progressing, and harvest interesting specimens as desired. This deployment is part of a cooperative arrangement between AltaSea (which is pursuing a combined marine research, marine business incubator, and educational project in the Port of Los Angeles area), the Los Angeles Maritime Academy (which uses fully-rigged sailing ships, seen in the photos, as educational platforms), and the NHM's MBC.



Regina Wetzter (MBC), Lindsay Hafen (USC), Adam Wall (Crustacea) and Bruce Heyman (LAMI) lower the ARMS over the edge.

On May 14, Marine Biodiversity Center staff had the pleasure of joining Dr. Kimo Morris and his Marine Biology class from Santa Ana College on two cruises on the *R/V Yellowfin* in the Los Angeles Harbor. MBC staff, with help from the students, took this opportunity to add high quality, molecular grade material representative of local Southern California marine fauna to the Museum's collections. Highlights from the day were saltine crackers (for those of us without sea legs) and sighting a fin whale right off the side of the boat!

Leslie Harris and Santa Ana College students sieving the first grab of the day upon the *R/V Yellowfin*.



On June 8th, the Marine Biodiversity Center had the wonderful opportunity to join Aquarium of the Pacific and USC Sea Grant for their BioBlitz at Pelican Cove Park, a Marine Protected Area (MPA). With special permission from the MPA manager, the MBC had the rare opportunity to collect high quality, molecular grade intertidal marine invertebrates from the MPA to add to our growing collection of Southern California marine fauna.



Tony Kampf collecting rare decavanadate minerals (orange) in the Burro mine.

Mineral Sciences

From May 16 to 21, Tony Kampf joined research collaborator and advanced field collector Joe Marty on an expedition to uranium mines in southwestern Colorado and southeastern Utah. At the Burro mine in the Slick Rock district of San Miguel County, Colorado, the two collected the finest known examples of the new ammonium decavanadate minerals wernerbaurite and schindlerite, which they had previously described from the St. Jude mine, also in the Slick Rock district. They also collected samples of a remarkable and as-yet-undescribed complex aluminum decavanadate that they had originally recognized at the Packrat mine in the Gateway dis-

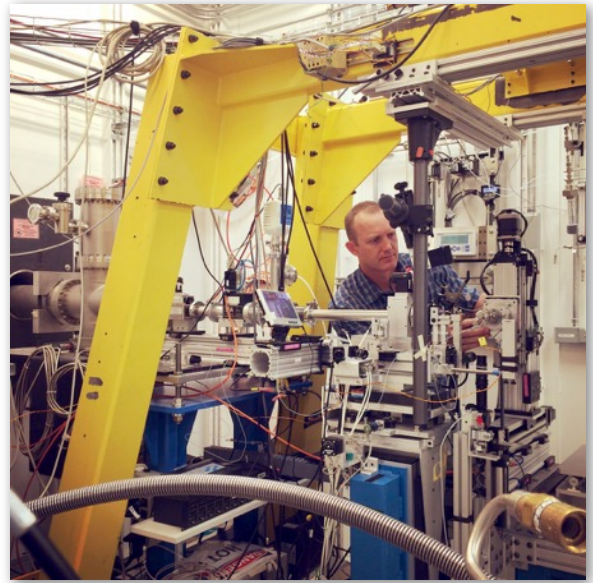
trict of Mesa County, Colorado. Joe and Tony continued their search in Red Canyon, San Juan County, Utah (just south of Lake Powell), where they were joined by another research collaborator, Travis Olds of Notre Dame University. Here, they collected specimens in the Markey and Giveaway-Simplot mines, from which they have already identified several new mineral species. It seems likely that additional new species will be found on the many specimens from the expedition remaining to be examined in detail.

Trip to the Advanced Photon Source

Dr. Aaron Celestian took his version of field-work: a research trip to one of the most powerful X-ray sources in the world. Named the *Advanced Photon Source*, this synchrotron is located just outside of Chicago, and uses a very large ring to accelerate electrons at near the speed of light. Synchrotron light is generated when bunches of electrons change direction at constant speed, and as they turn they radiate a tremendous amount of X-ray light. Dr. Celestian uses this light to probe how atoms move in space and time through nano porous minerals.

The end goal of this study is to detail how toxic metals, like cesium, are absorbed and locked away in minerals atomic structure. Those experiments will provide the data needed to model how the crystals change to accommodate the ingoing metals and provide new insights on how these minerals behave. The developing models will prove useful for understanding toxic metal transport in the groundwater, as well as provide much needed models for future applications of metal separation in industry.

Dr. Celestian aligning sample in the instrument for time-resolved X-ray diffraction studies.



UNRC



On Friday April 29 to Sunday May 2, a team of UNRC biologists headed to the small town of Shoshone, which is just south of Death Valley, to participate in a bioblitz organized by The Nature Conservancy and the Amargosa River Conservancy. The goal of the bioblitz was to assess the biological and archaeological significance of a large property in Chicago Valley. This valley is just east of Shoshone and contains the largest mesquite bosque in California. The group also explored China Ranch, which is a few miles to the southeast outside of the town of Tecopa.

Brian Brown (orange UNRC t-shirt) and other participants of the Chicago Valley bioblitz visiting China Ranch, which is a date farm southeast of Tecopa.

Brian Brown, Estella Hernandez, Kelsey Bailey, entomology volunteer Janet Kempf, and graduate student Katherine Noble (from the University of Utah, visiting to work with Brian on phorid flies) collected insects and spiders. They also retrieved the contents of two Malaise traps that had been set up prior to the bioblitz by Sophie Parker (from the Nature Conservancy). These traps yielded several species of phorid flies, including one parasitoid of native fire ants. Most of other insects recorded were typical of drier areas, with the high point being the many native bees on flowering mesquite bushes.

Greg Pauly and Stevie Kennedy-Gold conducted herpetological surveys and made several interesting and unexpected discoveries. Desert Night Lizards were found in extremely high densities in association with shadscale (*Atriplex confertifolia*), a type of saltbush, which grew close to clumps of mesquite. These lizards have never been found in close association with *Atriplex* or with mesquite, and these findings will be included in an upcoming publication on Desert Night Lizards. Other interesting finds included new locality records for Mediterranean House Geckos in Shoshone (second record for the Inyo County) and Western Toads at Shoshone Springs (first time documented at this spring).



Desert Night Lizard found beneath a decomposing clump of shadscale adjacent to a mesquite bosque in Chicago Valley.

On Friday April 22 Stevie Kennedy-Gold visited the San Diego Natural History Museum to retrieve a loan of snakes and measure some snake specimens. She also took advantage of the visit to collect Green Anoles in Balboa Park. These lizards are native to the southeastern United States, but there is an established population around the San Diego Zoo and the museum. In 90 minutes and with field assistance from her parents, Stevie collected 14 Green Anoles, ranging in size from juveniles to large adult males. These specimens will soon be used for some urban lizard research conducted by incoming NHM post-doc, Dr. Bree Putman.

Greg Pauly and Research Associate Dr. Bobby Espinoza from CSU Northridge led an NHM field trip to Malibu Creek State Park on Sunday April 17th. The trip was organized by Gabe Sjoberg in the Public Programs office. With 20 participants and help from three dedicated RASCals citizen scientists, the group searched for lizards, snakes, and frogs. They found nine species in three hours and submitted dozens of observations to the City Nature Challenge.

On Sunday March 20th, Greg headed to Ballona Wetlands to search for Brahminy Blindsnakes. This is the first place in Southern California these snakes were ever found. That was in 2000. They had not been seen there since 2011, and Greg wanted to know if the snakes were surviving through the drought. He searched the upper end of the Ballona Wetlands State Ecological Reserve, finding the snakes near the Culver-Marina Little League fields. While we tend to think of this species as being restricted to urban areas where there is abundant water in Southern California, these specimens demonstrate that the snakes have been established at an ecological reserve for at least 16 years.



From Sunday March 28th to March 30th, Greg Pauly and Stevie Kennedy-Gold were doing fieldwork on invasive frogs at the south end of the Salton Sea. The fieldwork was conducted in collaboration with biologists from the United States Geological Service and the California Department of Fish and Wildlife. Despite strong winds and dust storms, they were able to find frogs at a number of sites providing specimens for some morphological, genetic, and dietary analyses.

BioSCAN mushroom rearings: as important food sources for many of our phorid flies, we have begun collecting mushrooms with the intention of learning which flies use which fungi. A puffball type mushroom (*Calvatia pachyderma*) and a big *Agaricus*, both collected recently, yielded *Megaselia agarici*. BioSCAN is collaborating with Britt Bunyard, a well-known mycologist who recently moved to Southern California, to study urban mushrooms and their interactions with fungi. Have fungi to donate? We will gladly take your donations! Just place any mushroom you find in a bag with the date and location, and drop off with Brian Brown, Emily Hartop, or Lisa Gonzalez!

Camera traps (motion-activated cameras) are being used to survey for terrestrial mammals in backyards for the UNRC SuperProject. These traps will document predator activity that may be influencing the quantity or presence of snails, slugs, reptiles, or amphibians. The camera traps will also document squirrels that may have been missed during regular surveys by Super Project site hosts. Additionally, camera traps will provide both scientists and citizen scientists with a more comprehensive understanding of backyard biodiversity.

From May 25 to June 7, Greg Pauly, Stevie Kennedy-Gold, and collaborators conducted field surveys at multiple sites in the Mojave desert. Collaborators included professors Amber Wright and Bob Thomson from the University of Hawaii, postdoc Anthony Barley also from UH, and Levi Gray (graduate student) and Brittney White (undergraduate) from the University of New Mexico. The team visited six sites in the Mojave. The first site was the Kingston Mountains during which five of the participants, including Greg and Stevie,



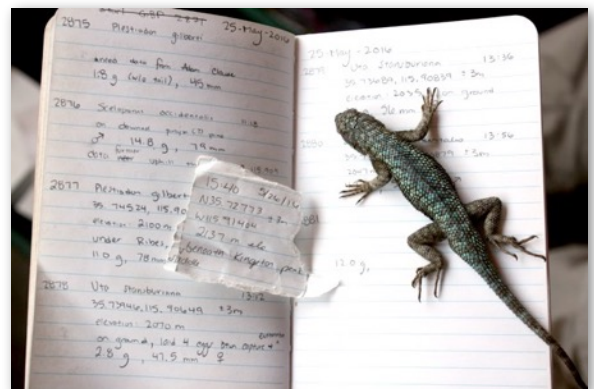
hiked to the top of Kingston Peak, sampling lizards along the way. They collected several Gilbert's Skinks, which are isolated to upper elevations of the mountain; these specimens represent the first tissue samples of this population in museum collections.



Team Mojave (left to right: Anthony Barley, Brittney White, Levi Gray, Greg Pauly, Amber Wright, Stevie Kennedy-Gold, and Bob Thomson) standing in front of a mural of a Desert Iguana in Twentynine Palms, CA.

Collection data being recorded for a Western Fence Lizard collected from the upper elevations of Kingston Peak.

The other five sites visited during the fieldwork are historically important sites that were originally surveyed in the 1950's and 1960's. Specimens from the original surveys were deposited at the NHM. At these sites, the team conducted new surveys to examine changes in the lizard communities through time. New specimens will be examined for changes in diet, parasites, and reproductive biology from the earlier material. Tissue samples are also being used for a comparative landscape genomics study. In total, the team collected 110 specimens and 171 tissue samples.



Results from the resurveys will be presented at the Joint Meeting of Ichthyologists and Herpetologists in New Orleans in July. The team is also preparing a manuscript on the results of the resurveys.

Meetings, Workshops, and Presentations

Conservation

On April 29, Tania Collas presented a lecture and hands-on workshop introducing students to museum pest management as part of the Urban Entomology class taught by Prof. Dong-Hwan Choe at UC Riverside.

Crustacea

Adam Wall was an invited speaker at the 2016 *Worldwide Engagement for Digitizing Biocollections* (WeDigBio) Planning Meeting at the iDigBio headquarters at the University of Florida Gainesville. Adam gave a talk where he shared the results of NHM's *Crab Shack* project on crowdsourced digitation of collection data of liquid preserved collections, and contributed to the planning for this year's *WeDigBio* event.

Dinosaur Institute

Dr. Rachel Racicot presented *What goes on inside the heads of whales? Present and future applications of CT to understand whale sensory evolution*, for guests of the May, 19th R&C Spring Seminar Series here at the NHM.

Nathan Smith traveled to Washington, DC, from April 12–24th to serve on an NSF grant review panel, meet National Geographic staff to discuss articles on Triassic and Antarctic paleontology, and also work in the collections at the Smithsonian's National Museum of Natural History.



Luis Chiappe participated in a collections workshop in Washington, DC, from April 19th to the 23rd. The workshop included participants from the largest natural history museums in North America and Europe.

Rachel Racicot attended the 21st Biennial Conference on the Biology of Marine Mammals in San Francisco (Dec 13–18), and was the poster award winner of Excellence in Science Communication for her poster / abstract titled: *Getting long in the tooth: Endocranial anatomy of the narwhal and beluga (Cetacea: Monodontidae)*.

Nathan Smith gave a talk about his research program on dinosaur origins as part of the Paleoenvironmental seminar series at USC's Department of Earth Sciences on February 12th.

Nate Smith gave a research seminar about early dinosaur evolution and paleoecology for Cal State San Bernardino's Department of Biology on February 19th.

Nathan Carroll gave a talk about his research on Cretaceous amber fossils as part of the Paleoenvironmental seminar series at USC's Department of Earth Sciences on May 6th.

History

History Curator Dr. William Estrada, along with Temporary Archivist Kim Walters, are featured in a KCET documentary exploring the life and career of Charles Fletcher Lummis (1859–1928), archaeologist, historian, archivist, civic booster and founder of the Southwest Museum. Relatedly, the Seaver Center contributed 18 images to the documentary.

On May 19th Dr. William Estrada was a guest lecturer at La Plaza de Cultura y Artes's annual Speaker series. His talk was entitled *La Esperanza (bakery) & Mercado Plaza (grocery store): Unfolding the Shared Lives and Integrated Identities of Mexican and Japanese American Residents in the Historic Heart of Los Angeles*.

Also at the lecture was Bill Shishima, shown here, standing in front of a reproduction of a photo of him as a toddler in his father's store, Mercado Plaza.



In May, Assistant Collections Manager Kristen Hayashi made a presentation to the Los Angeles Cultural Heritage Commission as part of the process to obtain a local historic cultural monument designation to the building for the former Japanese Hospital in Boyle Heights. The commissioners voted unanimously on a motion to proceed to the next phase of the process. If designated, the Japanese Hospital would become the fifth historic cultural monument to represent the Japanese American experience in Los Angeles, of the over one thousand that the city has recognized.

Collections Manager Beth Werling was selected as one of two California delegates to attend *Mostly Lost 5: a Film Identification Workshop* on June 16-18 in Culpeper, Virginia. *Mostly Lost* is sponsored by the Library of Congress' National Audio-Visual Conservation Center and will feature the screenings of unidentified, under-identified or misidentified silent and early sound films, along with workshops and lectures on topics pertaining to early film history in Los Angeles.

Ichthyology



The SCAITE group (Southern California Association of Ichthyological Taxonomists and Ecologists) is in the final phase of testing keys for the revision of Miller and Lea's *Guide to the Coastal Marine Fishes of California*. Some very rare and unusual specimens have been borrowed from the Museum's Fish Collection to test the keys, including a Crestfish, pictured here being held up by Collection Manager, Rick Feeney. Crestfish are related to and have similar coloring as oarfish. They don't get bigger than about 40 inches and have an ink-sac near the cloaca that they discharge when alarmed.

Crestfish, *Lophotes cristatus*, LACM 34176-1. (Photo by Jim Rounds)

UNRC

On Saturday, April 23rd, Emily Hartop and Kelsey Bailey presented at a seminar dedicated to exploring Entomology at Gnomon School of Visual Effects in Hollywood. Hosted by Eric Keller, a digital animator and former Bio-SCAN site host (pictured), it was an afternoon of discussing the brutal behavior of ant-decapitating and coffin flies and showcasing a variety of photographs of beautiful, minuscule insects, as well as the process of photographing them. There was a full audience and a thoughtful Q & A following each presentation. Overall, it was a successful, fun event about the weirder, sci-fi side of insects!

You can watch a stream of the event at this link:

<http://livestream.com/gnomon/anatomy-lab-entomology>



Jann Vendetti did a *Snail and Slug* talk at San Diego State University to the Natural History Club on April 27.

Greg Pauly and Brian Brown presented at the March 24 all-staff meeting to introduce the UNRC.

Vertebrate Paleontology

Assistant Collections Manager, Vanessa R. Rhue, along with Vertebrate Paleontology volunteers Kathleen Gonzales, Evan & Karen Kent, and John Sifling attended the 9th Annual Fossil Preparation & Collections Symposium in Colorado Springs, Colorado, 18-23 April 2016. The meetings were hosted by the Association for Materials & Methods in Paleontology (<http://paleomethods.org/about.html>) whose mission is to advance paleontological research through education and advocacy for improved ethics, standards, and practices in field, laboratory, and analytical methods.



Vertebrate Paleontology Volunteers (left to right) Evan Kent, Karen Kent, Vanessa R. Rhue (center), Kathleen Gonzales, and John Sifling at the AMMP 2016 meetings in Colorado Springs, CO.



Vanessa R. Rhue examines the seam lines of a small cast during Marilyn Fox's workshop Making Complex Molds.

Vanessa Rhue and John Sifling participated in an intensive two day pre-meeting workshop on Photogrammetry led by Neffra Matthews, Brent Breithaupt, and Jack Wood. The meeting consisted of a full day seminar titled *Back to Basics* which focused on the essential competencies of a professional

preparator, two additional days of platform talks, poster presentations, and hands-on workshops. Vanessa R. Rhue organized and led a round table discussion for volunteers along with NMNH colleague Matthew T. Miller. Vanessa also presented some case studies of specimens from our Museum's Vertebrate Paleontology collections during a workshop titled *Choosing an Adhesive*.

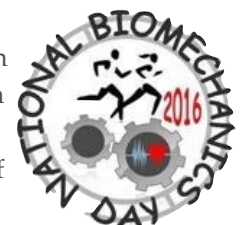
Field trips included visits to Comanche National Grasslands, the Denver Museum of Nature & Science, the Morrison Natural History Museum, the BLM's Garden Park Fossil Area (where Cleveland & Marsh conducted quarries in the 1870s–1880s near Cañon City, Colorado), and the Pierre Shale of Baculite Mesa near Pubelo, Colorado. A special behind the scenes tour of the collections and lab at Florissant Fossil Beds National Monument was given by Conni O'Connor.

Public Outreach

Dinosaur Institute

National Biomechanics Day

As part of National Biomechanics Day on April 7, 2016 Nate Smith, Rachel Racicot, and Nathan Carroll presented Dinosaur Institute specimens of pterosaurs to the public and led a discussion and Q/A on wing anatomy. Along with NHM Performing Arts, Mike Habib also demonstrated a prototype version of a Pterosaur Puppet and talked with guests about the biomechanics of flight.



The NHM First Fridays May 6th event “*Velociraptor is the thing with Feathers*” featured both Nate Smith and Dinosaur Institute Research Associate Mike Habib as panelists in a discussion of scientific facts and inaccuracies relating to the depiction of dinosaurs and other animals in popular films. The event was moderated by LA Times journalist Patt Morrison, and a podcast of the discussion is available at: <https://itunes.apple.com/podcast/first-fridays-science-discussion/id350217062?ign-mpt=uo=6&mt=2>

Left to right: Drs. Mike Habib, Nate Smith and Patt Morrison.



The Dinosaur Institute participated in the Tar Pit's *Ice Age Hair Ball* fundraiser on June 4th, with Nate Smith manning the scientist booth *Furry Mammals in the Shadow of the Dinosaurs* focused on Mesozoic mammal evolution. Nate also won the staff award for best “Hair” with his “Braincase w/ Coprolites” fossil jacket headgear.

Nate Smith's winning hairdo at the Hair Ball 2016.



Left to right: Jorge Velez-Juarbe, Assistant Curator, Mammalogy; Luis Chiappe, VP of Research and Collections, Nate Smith, Associate Curator, Dinosaur Institute.

History



On March 22nd the History Department assisted Advancement by hosting 45 members of the Manhattan Beach Rotary Club. They visited the Seaver Center and saw photographs, maps and documents relating to Manhattan Beach and surrounding communities and were also given guided tours of Becoming Los Angeles.

7th and 8th Grade Language Arts students along with teacher Toni Bastian traveled from Central Middle School in Riverside to see Seaver Center's extensive greeting card collection dating back over 100 years. The students themselves make cards for members of the armed services and children in hospitals.

On April 18th a class of nineteen



At the *Second Ice Age Hair Ball* held at the La Brea Tar Pits and Museum, the History Department exhibited “Hair-Raising-Hollywood” artifacts from the motion picture collections. Included was the bat from the 1931 classic *Dracula* starring Bela Lugosi; Mary Pickford’s signature curls; and a wig worn by Lon Chaney in his final film *The Unholy Three*. Also on display were photographs of classic Hollywood stars with distinctive hairdos including Joan Crawford, Greta Garbo, Katharine Hepburn, and Norma Shearer. Shown here are hosts for the evening, Collections Managers Beth Werling as the Bride of Frankenstein and John Cahoon as a crazed barber.



A *Scavengers Safari* in May provided members an up-close look at surprising artifacts from the History collections: historic money from the early colonial and continental eras; pre-Civil War state bank notes; Civil War notes and Confederate money; fractional currency and legal tender used in the First and Second World Wars.

Shown are Continental currency notes dating from the late 1770s.

Malacology

Lindsey Groves participated in the *Mobile Museum Onsite* program for local middle school groups and made three presentations of Abalone 101, which spotlighted the Red Abalone (*Haliotis rufescens*). Topics included fossil and living red abalone and related species of mollusks and their ecology, natural history, paleontology, and historic influence on humankind. A lively Q&A session and a hands-on specimen examination session followed each talk.

Marine Biodiversity Center

On May 16 and May 19, staff from the Marine Biodiversity Center partnered with the Santa Monica Mountains National Recreation Area for a marine-oriented BioBlitz at Malibu Pier. It sounded straightforward enough: collect specimens from pier pilings to use for public outreach with fourth-grade students, and then keep the specimens for DNA barcode analysis. This simple concept snowballed into a multi-pronged collaborative effort involving dozens of participants, and we’re grateful to them all for making this such a public success.

The fun started with a promotional video produced by NHM’s Edgar Chamorro: <https://www.youtube.com/watch?v=WJFC-c5Qdlxo>. Lena Lee of NPS made the arrangements to bus in classes of fourth graders (the target audience for the NPS this year). The Malibu Pier, it turns out, is administered by the California Department of Recreation and Parks, whose Jamie King arranged the permits for us to work with students there. The LA County Fire Depart-



ment's Lifeguard Division arranged for SCUBA diver access from the pier. Molly Porter worked with us to help us create high quality materials for participating teachers (available at <http://research.nhm.org/mbc/bioblitz2016>). Jim Gilson arranged for the novel photo permissions we needed to entice volunteer underwater photographers to participate (Walter Marti, Bill Mayley, and Linda Blanchard). Kristin Friedrich and Rachel Gertz made sure the public knew that all this was happening. Elizabeth Andres arranged for NHM volunteers to help out (Jessi Masserman, Kris Bholanath, Barbara Baker, and Leilani Himmelstein). James Bailey volunteered to log species into iNaturalist. NatureBridge provided support staff to help work with the students. From R&C, we had full participation from Leslie Harris (Polychaetes), Gracie Mowery (USC work-study student), Kathy Omura (MBC), Dean Pentcheff (Research Associate), Lynn Song (USC intern), Adam Wall (Crustacea), Jenessa Wall (MBC), and Regina Wetzer (MBC).



On each of the two days, divers collected specimens from the pier pilings (for a look at how challenging that can be, see the underwater video on <http://research.nhm.org/mbc/bioblitz2016>). Fourth grade students learned a bit about invertebrate diversity and shore life, then had a chance to help sort the specimens. Back at the lab, the expert process of getting full species identifications was led by Leslie Harris, resulting in a preliminary list of about 200 species (some specimens are out on loan for final determination). Not bad for a couple of days looking at pier piling scrapings with fourth grade citizen scientists!

UNRC



Richard and Miguel conducted a BioBlitz at John Adams Middle School as part of a two part science seminar. The students attended an iNaturalist workshop on January 30 at NHM which was followed by a BioBlitz of their campus in Santa Monica on April 6. The students enthusiastically pointed out their favorite wildlife viewing areas and we made 75 observations on iNaturalist.

Richard and Miguel conducted a BioBlitz at John Adams Middle School as part of a two part science seminar. The students attended an iNaturalist workshop on January 30 at NHM which was followed by a BioBlitz of their campus in Santa Monica on April 6. The students enthusiastically pointed out their favorite wildlife viewing areas and we made 75 observations on iNaturalist.

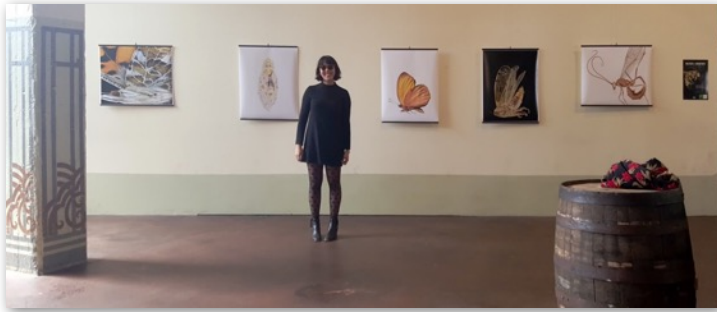


L.A. wins the #CityNatureChallenge! 10,353 nature observations in L.A. County from 574 citizen scientists!

Thanks to everyone who participated, we couldn't do it without you! But really science won in this competition, with almost 20,000 observations on urban biodiversity logged in both L.A. and S.F. in just one week—amazing!

Learn more about both here: <http://www.nhm.org/nature/citizen-science/bioblitzes>

The Citizen Science Office hosted a *Museums and the Web Tour* at NHM. We introduced them to our citizen science initiatives, had them document wildlife in our *Nature Gardens*, and introduced them to the *Nature Lab*.



Hartop & Kelsey Bailey, Museum specimens on display with Lisa Gonzalez and Estella Hernandez, and a special cask beer *Bug Juice* in honor of the event.

<http://www.latimes.com/home/la-hm-bugs-and-brew-20160416-story.html>

On Friday, May 27 Lisa Gonzalez gave a presentation titled *Backyard Beauties and Beasties of the BioSCAN Project* for the monthly Lorquin Entomological Society meeting held at Bioquip. About 50 people attended and were intrigued by the life histories of L.A.'s flies, a departure from the usual butterfly and beetle discussions.



Jann Vendetti did a snail talk for 2nd graders at Odyssey Charter School in Altadena on April 20.

Monday May 16th, Jann Vendetti had lunch with the SLIME photo contest Grand Prize winner, Jose Cabellero and his wife Stephanie. They got a behind-the-scenes tour of the Malacology



collections with highlights from the NHM's land snail collection. The winning photo shows a *Discus rotundatus*, *Arion hortensis* (slug), and *Vertigo* sp. snail riding on *Arion hortensis*! <http://www.i-naturalist.org/observations/2605863>



On Thursday, April 21 BioSCAN collaborated with Angel City Brewery to host *Bugs & Brews*, an event that included a photography display of Kelsey Bailey's insect portraiture, a talk on insects by Emily



On Saturday, April 30th, BioSCAN hosted a table at the UCR *Insect Fair* in Riverside. Emily Hartop also gave a talk about BioSCAN for the event.



Results of the El Niño #SnailBlitz are in! Emily Han won for El Nino SlimeBlitz's best slug photo and her reaction on Facebook was amazing (at right).

In total, 1225 observations of 49 species of land snails and slugs from over 200 citizen scientists were received.

Bird L.A. Day: Beginner Bird Walks — May 7

Richard Smart and Jeff Chapman led two *Beginner Bird Walks* on Saturday, May 7 as part of NHM's participation in Bird L.A. Day. The walks taught people the basics of using binoculars, what characteristics to consider when making bird identifications, how to use the *Merlin Bird I.D.* mobile app to make bird identifications, and we discussed how our bird lists will be entered into *eBird* (a citizen science project out of Cornell Lab of Ornithology).



8:00 a.m. bird walk had 6 people; 10 bird species observed; 33 individual birds observed

10:00 a.m. bird walk had 15 people; 8 bird species observed; 24 individual birds observed

Links to bird lists on eBird:

<http://ebird.org/ebird/view/checklist?subID=S29460016>

<http://ebird.org/ebird/view/checklist?subID=S29463296>

Citizen Science Program led four bug hunts during Bug Fair (2 hunts per day). Participants used a vial to collect bugs in the Nature Gardens, then they brought the vial to Miguel or Richard so they could take a photo of the insect and upload it to iNaturalist. 202 observations of 37 species were added to the Nature Gardens Survey, L.A. Nature Map, and the NPS SAMO BioBlitz. Over 160 people participated in the hunts.



External Funding

Dinosaur Institute



The Ahmanson Foundation awarded a grant of \$100,000 to Luis Chiappe, Alyssa Bell, and Nate Smith in support of *Proyecto Dinosaurios*, a summer program that will give six Community College students experience in all aspects of paleontology, including field research. Community colleges are key targets to mitigate the severe under-representation of minorities in the Geosciences. *Proyecto Dinosaurios* is a summer internship program that aims to build a network of cooperation between community colleges in the greater Los Angeles area and the Dinosaur Institute, and to use the appeal of dinosaurs to engage underrepresented undergraduates in Geoscience research.

Co-PIs Luis Chiappe and Sara Bertelli (former NHM postdoc) received a 3-year grant of \$40,000 from the Fondo para la Investigacion Cientifica y Tecnologica (Argentina) to study the avifaunal turnover across the Cretaceous-Paleogene boundary in northwestern Argentina. This work will help elucidate the effect that the End Cretaceous mass extinction had on bird evolution in the Southern Hemisphere, and help create an additional regional dataset for exploring patterns of faunal change across this boundary.

The National Geographic Society awarded a Research Grant of \$19,771 (NGS CRE #9849-16) to Nathan Smith and colleagues J. Olori, Randall Irmis, Sterling Nesbitt, Michelle Stocker, and Alan Turner, for their project *Out of the shadows of the ruling reptiles: New Late Triassic microvertebrates from Western North America (Hayden Quarry, Ghost Ranch, NM)*. This grant will help support undergraduate student research on the microfauna of the Hayden Quarry at Ghost Ranch as part of excavations that have been going on for over ten years.

Marine Biodiversity Center

The MBC received \$10,000 from the Santa Monica Mountains Fund to support participation in the Santa Monica Mountains National Recreation Area BioBlitz in May. That project will include DNA barcode processing of the samples retrieved at the BioBlitz. The National Parks Service is very interested in using barcoding as a survey and management tool, and welcomed the opportunity to collaborate with the Natural History Museum's MBC in developing the technology, and helping to fill in the reference sequences for local species.

UNRC



Citizen Science Coordinator, Miguel Ordeñana, was awarded a Wildlife Acoustics Scientific Products Grant. They will provide him with 4 bat acoustic monitors and supporting equipment.

The official grant award limit is \$5000 but Miguel was awarded almost \$7000 worth of equipment. The bat detectors will be deployed in 4 Super+ Site host backyards as part of the UNRC SuperProject. The results will provide long-term baseline data with respect to the response of bats to urbanization and other environmental variables in Southern California. The results of the study will provide data that can inform property owners and city planners how to provide suitable roosting and foraging habitat for Southern California bat species in urban areas or land undergoing urbanization in varying habitats and in varying proximities to the urban edge. With this data, the museum can provide city and county planners with the means to make public and private land throughout Los Angeles county more habitable to bats.



Bat detector

DONATE \$500 OR MORE

1 BELIEVER

How generous! To show our thanks, you will get VIP treatment at Bugs n' Brews on April 21st at Angel City Brewery - including a private, behind-the-scenes brewery tour and an exclusive Angel City gift bag!

Limited Rewards: 9 of 10 remaining

DONATE \$1,000 OR MORE

4 BELIEVERS

Thank! Have lunch with the UNRC scientist of your choice. Plus, book a private, behind-the-scenes tour at NHM or the La Brea Tar Pits for up to 10 people!

Limited Rewards: 3 of 5 remaining

DONATE \$2,500 OR MORE

0 BELIEVERS

You're too kind! To express our thanks, you are invited to go on a collection trip to scout out lizards, snakes, and frogs in Malibu Creek with Curator of Herpetology, Greg Pauly, Ph.D.

Limited Rewards: 3 of 3 remaining

DONATE \$5,000 OR MORE

The UNRC crowdfunding campaign is up and running, with the aim to provide support for supplies and staffing. In advance of the official UNRC launch date on April 14, the campaign had already raised 39% of the \$120,000 goal through the generosity of some very enthusiastic donors! The campaign will remain open through September and offers unique rewards for different levels of giving. Visit <http://www.nhm.org/unrcgive> to learn more or to make a donation, and please spread the word!

DONATE

\$47,050 RAISED

\$120,000 GOAL

154	9	39%
DAYS LEFT	BELIEVERS	FUNDED

Campaign ends 09/09/2016 at 08:00 PM (EDT)

Student Mentoring and Research

Student intern from Mexico

In April, Xiaoming Wang worked with Mayra de Robles, a undergraduate student intern from Universidad Autónoma de Zacatecas, Zacatecas, Mexico, who came to study a rare fossil grey wolf skull recently collected from Chihuahua. She was able to take advantage of our great canid collection of San Josecito Cave (late Pleistocene) in Nuevo León as well as *Canis* from Rancho la Brea. She will write a senior thesis based on her research and has expressed desire to apply for graduate schools in the United States.

Xiaoming Wang and Mayra de Robles working on fossil grey wolves from Chihuahua.



Dinosaur Institute



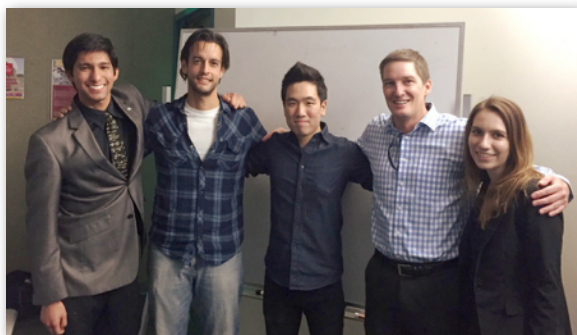
The Dinosaur Institute welcomes its second Princeton Intern as part of the PICS program, Blaine Crabtree. Blaine has taken on the huge project of geotagging over 200 Montana localities discovered by Harley Garbani during the NHM's Expeditions of the 60's and 70's. Working from locality maps and written descriptions, he is retracing Harley's steps in an attempt to pin point these localities with satellite images and Google Earth Pro. He has also, already updated over a thousand searchable collection records for the DI.

*Blaine prepares a rib end of the duckbill dinosaur, *Magnapaulia laticaudus*.*

Bryan Gee enjoys the Petrified Forest heat before heading north to Canada.



Longtime expedition crew member Bryan Gee was awarded the 2016 Centennial Internship at the Petrified Forest National Park. Bryan heads to the University of Toronto this Fall to begin a PhD program in Paleontology.



Maureen Walsh, Jose Soler, and Nathan Smith supervised three student interns from Glendale City College during the Spring Semester. These students presented their research at a May 27th Research Symposium: *Confirming the identification of the mosasaur *Plotosaurus bennisoni* from the Moreno Formation of California* by Chang Kim; *Apomorphy-based identification of Cretaceous marine turtles from the Niobrara Chalk Formation* by Ala

Left to right: Cameron Casillas, Jose Soler, Chang Kim, Nate Smith and Ala Babakhanians celebrate after presenting at Glendale Community College.

Babakhanians; and *Identification, anatomy, and phylogeny of a rauisuchid archosaur ilium* by Cameron Casillas. Nathan Smith also gave a short workshop on professional development and presentation skills to the GCC interns on May 13th.

Marine Biodiversity Center

The Marine Biodiversity Center is pleased to welcome Marcus Leher, a Sophomore from Harvard-Westlake High School, to the lab as an intern for the Summer 2016. Marcus looks forward to fueling his passion for nature, science, and discovery by assisting on intertidal collecting trips around the Los Angeles area and running molecular analysis on the material he and the MBC Staff collect to continue building the MBC's DNA barcode library of Southern California intertidal organisms.

Marcus sorting recently collected material from Pelican Cove while Kathy hides from the camera.



Mineral Sciences

Master's Student Collaboration with Western Kentucky University

Jason Lively of Western Kentucky University has been performing experiments using functional minerals to test their performance in a variety of environmental conditions. By using the NHMLA Mineral Sciences Collection for his Master's thesis (with Aaron Celestian as his thesis mentor), Jason is focused on how some minerals possess the ability to selective absorb atoms from water. His research has shown that highly selective ion absorption can be controlled and tailored for specific applications like hydrogen separation, radioactive waste separation, and the recovery of rare earth elements from e-waste waters. He will continue this work through the summer of 2016 and present his findings at the annual American Crystallographic Association in July.

UNRC



Ala Babakhanians and Richard Laguna, both Glendale Community College student interns at NHM, got amazing pictures of the common European Garden Snail using its jaw and radula to eat a cornstarch and water film on glass. They perfected this method to get the jaw (terrestrial snails and slugs have only one jaw!) in focus. This method was inspired by the one described here: <http://snailstales.blogspot.com/2011/11/jaws-of-different-kind.html>

The Glendale students are also dissecting jaws from other snails and slugs we have in our collection to image with the SEM to see if they are diagnostic to species or genus.

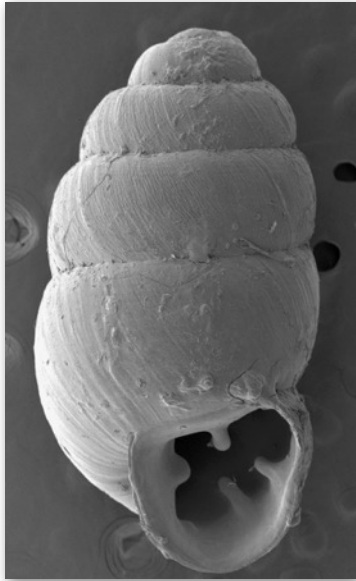
Ole Willadsen (a Glendale Community College student intern at NHM) and Jann Vendetti successfully extracted, amplified, and sequenced DNA from slug slime, not tissue. Using this slime-only protocol, they identified the first DNA record (and official vouchered record) of *Ambigolimax nyctelius* from Los Angeles County.

They shared this slime-only protocol with a colleague who shared it with the biologists from the US Fish and Wildlife Service who are responsible for monitoring the populations of the Mojave Desert Snail *Helminthoglypta (Coyote) greggi* at the Golden Queen mining operation (open pit gold mining site) in Kern County. They immediately adopted this non-lethal protocol and shared it with colleagues at the Bureau of Land Management. This snail, *H. greggi*, is a Mojave endemic with a known range of 8 square miles, and is being considered for listing as a

threatened or endangered species under the US Endangered Species Act. We have plans to collaborate in the field and lab with these government biologists in the future.

Some media/background on this snail vs. goldmine issue:
<http://www.capoliticalreview.com/capoliticalnewsandviews/will-unknown-snail-kill-one-billion-gold-mine-in-antelope-valley/>
https://www.biologicaldiversity.org/news/press_releases/2015/mohave-shoulderband-04-09-2015.html

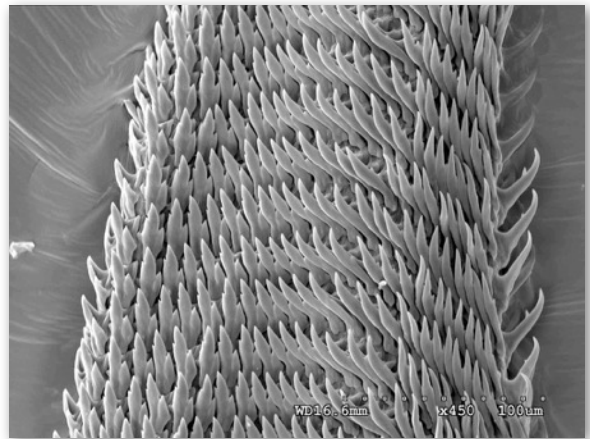
http://www.biologicaldiversity.org/species/invertebrates/pdfs/Mohave_Shoulderband_Petition.pdf



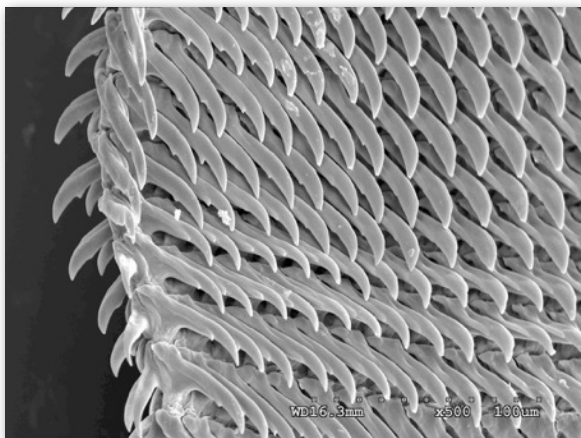
Cameron Rogers (a Glendale Community College student intern at NHM) and Jann Vendetti used the SEM to look at a *Vertigo* snail collected by Cedric Lee. These species are usually identified by the “dentition” or “teeth” in their aperture: the number and their morphology. There are dozens of *Vertigo* species in North America and they are an understudied group. This and other excellent SEMs are surely a first for the Southern California fauna!

5/13/2016, Ole Willadsen (a Glendale Community College student intern at NHM) and Jann Vendetti dissected out the pharynx of two non-native slugs from Los Angeles with questionable identity. One was collected by Cedric Lee (*Limacus* sp.) <http://www.inaturalist.org/observations/2564243> from Sunset Blvd. between Thurston Ave and Glenroy Ave. on January 7, 2016 and the other by Greg Pauly and Estella Hernandez from the Kobata nursery in Torrance in August, 2015. One species could be *Ambigolimax valentianus* or *Ambigolimax nyctelius* and the other *Limacus flavus* or *Limacus maculatus*. Their radulae (feeding ribbons) were prepared by soaking

the pharynx in sodium hydroxide to dissolve the soft tissue, washing the radulae in water, then mounting each on an SEM stub, sputter coating them with gold/palladium and imaging them with NHM’s SEM to reveal the exquisite micrographs! The barbs make a rough surface capable of rasping the slug’s preferred food. We are planning to characterize this morphology in the rest of the Southern California land slugs and hoping to use it, and other characters, to determine the species ID of these specimens.



Ambigolimax sp.



Limacus sp.

Volunteers and Research Associates

Conservation

The Conservation Section welcomes Abigail Rodriguez, our Scripps College Conservation Summer Intern. Abby is a recent graduate of Scripps College's art conservation major, the only undergraduate program of its kind on the west coast. Over her ten week summer internship, generously funded by Scripps, Abby will gain experience working with us in the lab in preparation for entering a graduate program in art conservation. Her projects include examining and treating objects from the Anthropology, History, Invertebrate Paleontology, and Research Library Collections.



Dinosaur Institute



Sara Edwards (left) is the Dinosaur Institute's Volunteer of the Year for 2016. Sarah studied wildlife biology at UC Davis, specializing in birds. She finds their Mesozoic ancestors just fascinating: "I have loved dinosaurs since preschool. It is amazing to be able to work on their bones."



Rachel Koons (right) — Graduated Ohio State University in Geology, heading to Kent State University in the Fall for Masters Program in Geochemistry. Her dinosaur interests range from *Velociraptor* to *Edmontosaurus*. She works with Jose Soler in the 4th floor lab and has been with the NHM since January 2016.



Sharese Collins — Graduated from UC Riverside in Anthropology, and originally from Fontana, California; Sharese is weighing the pros and cons of returning to school for research or focusing on preparation and the more technical aspects of Paleontology.

Sharese prepping the limb bone of a sauropod dinosaur from Utah.

History

Seda Matevosian was honored at the April 21st *Volunteer Recognition Nite* for her contributions in the Seaver Center. A recent graduate of the San Jose State University Master of Library and Information Science program, Seda has been honing her skills cataloging the George Steckel portrait collection of late 19th and early 20th Century Angelenos; digitizing glass plate negatives; and transcribing data from early Los Angeles County business incorporation records.

Honoree Seda Matevosian poses with Collections Managers Brent Riggs, Betty Uyeda, and John Cahoon.



Vertebrate Paleontology

Vertebrate Paleontology is pleased to welcome two new volunteers to our department. Meg Taylor and Syllenne Moody recently started volunteering in May 2016. They are working with VP Volunteer Jed Docherty on scanning field notes for our archives.



Meg is fascinated with the scientific method and wants to know more about the relationship between humans and their natural communities through time. In her spare time she enjoys being outdoors, gardening, and cycling around the Los Angeles River.

Syllenne comes to us with a background in Ecology, Evolutionary Biology, and Geology. She admires the natural world and wants to make a contribution to the care of our natural history collections. She is also an avid urban gardener and enjoys hiking, camping, and studying native California plants.

*Vertebrate Paleontology Volunteer
Meg Taylor*



Vertebrate Paleontology Volunteer Syllenne Moody

Distinguished Visitors

Dinosaur Institute

During the month of May, Dr. Maria McNamara visited the Dinosaur Institute collection from the University College Cork, Ireland to study exceptional preservation of dinosaur skin and assess the possibility of preservation of biomolecules in several specimens.

Maria samples dinosaur skin impressions for viewing with the scanning electron microscope (SEM).



Malacology

Charles Drost (USGS, Southwest Biological Science Center, Flagstaff, AZ) visited the Carson IP/Malacology facility to examine helminthoglyptid gastropods from San Nicolas Island. Rachel Collin (Smithsonian Tropical Research Institute, Panama) and Marta de Maintenon (Univ. Hawai'i, Hilo) spent three days each examining northeast Pacific calyptraeid and columbellid gastropods respectively for chapters in an upcoming book on gastropods. Daniel Muhs (USGS, Denver) made two visits to Malacology/IP to examine Recent and fossil mollusks for research purposes and deliver specimens for identification and deposition. Ryan Ellingson (Calif. St. Univ., Los Angeles) spent time in dissecting sacoglossan sea slugs. Ángel Valdés (Cal. Poly. Pomona) visited to use the cephalaspidean collection and the SEM facilities. Daniel Geiger (Santa Barbara Mus. Nat. Hist.) came in to Malacology to use the library and discuss editorial matters with Lindsey Groves and Jann Vendetti for the upcoming Northeast Pacific shell book. Robin Turner (ArchaeoPaleo Resource Management, Inc.) delivered fossil specimens from a Plio/Pleistocene site near Ventura for identification. Cal. Poly Pomona grad students Jenny McCarthy and Sabrina Medrano visited to examine sacoglossan gastropod specimens as they continue their thesis research. Calif. St. Univ., Fullerton grad student and Malacology Research Associate Shawn Wiedrick visited three times to research turrid and ocenebrine gastropods for thesis and NE Pacific gastropod projects. Doug Eernisse

(Cal. St. Univ., Fullerton) made two visits to examine limpets and hipponicid gastropods. Brett Danielson (Delta Design, Ltd., Topeka, KS) made a visit to Malacology and IP to discuss current and future cabinetry needs. Josh Hallas (Univ. Nev., Reno) made two visits to examine nudibranch specimens. Jaymes Awbrey (Calif. St. Univ., Los Angeles) made two visits to examine and dissect sacoglossan gastropods.

Crystal Johnson (Calif. St. Univ., Fullerton) visited to examine holdings of lottid limpets.



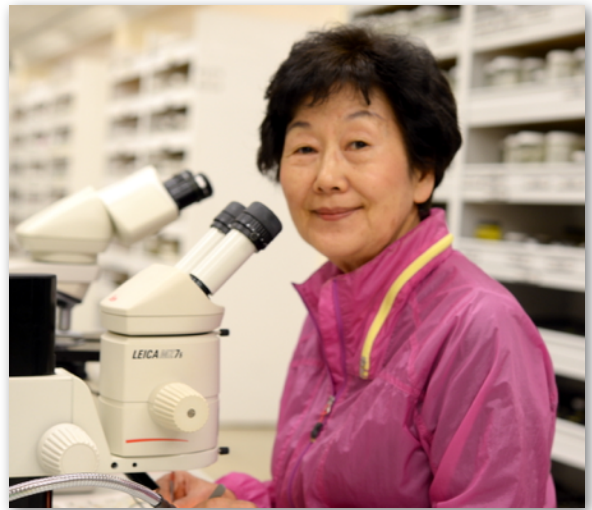
Marta deMaintenon (Univ. Hawai'i, Hilo) examining columbellid gastropod shells.



Rachel Collin (Smithsonian Tropical Research Institute, Panama) inspecting calyptraeid gastropod specimens.

Marine Biodiversity Center

Dr. Sim from the Hannam University in Korea visited the Marine Biodiversity Center (MBC) from 26 April to 3 May 2016. Dr. Sim is a MBC Research Associate and has visited the Porifera collection for the past 10 years. In her 2016 publication, "Twelve new species of two genera *Smenospongia* and *Cacospongia* from Korea", in the *Journal of Species Research* 5(1): 31–48, she compares the fibers of the MBC's *Smenospongia aurea* specimen to the Korean specimens. During her April visit, Dr. Sim clarified some identifications and examined our *Psammocinia* specimens for her current research.



Recent Publications

- Collas, T.** 2016. Battling the beetles: insect growth regulators as a tool for pest management. *Western Association for Art Conservation Newsletter* 38 (1): 10-17.
- Bell, A.** and **L.M. Chiappe.** 2015. Identification of a New Hesperornithiform from the Cretaceous Niobrara Chalk and implications for ecological diversity among early diving birds. *PLOS One*. DOI:10.1371/journal.pone.0141690
- Bell, A.,** Irwin, K.J., and L. C. Davis. Hesperornithiform birds from the Late Cretaceous (Campanian) of Arkansas, USA. 2015. *Transactions of the Kansas Academy of Science* (118) no. 3-4: 219-229.
- Christy, A.G., Mills, S.J., **Kampf, A.R.,** Housley, R.M. Thorne, B. and Marty, J. (2016) The relationship between mineral composition, crystal structure and paragenetic sequence: the case of secondary Te mineralization at the Bird Nest drift, Otto Mountain, California, USA. *Mineralogical Magazine* 80, 291-310. DOI: 10.1180/minmag.2016.080.001
- Darroch, S.A.F., Sperling, E.A., Boag, T., **Racicot, R.A.,** Mason, S.J., Morgan, A.S., Tweedt, S., Myrow, P., Johnston, D.T., Erwin, D.H., and Laflamme, M. 2015. Biotic replacement and mass extinction of the Ediacara biota. *Proceedings of the Royal Society B*. 282:20151003. DOI: 10.1098/rspb.2015.1003
- Hartop E., Brown, B.,** Disney, R. (2016) Flies from L.A., The Sequel: A further twelve new species of *Megaselia* (Diptera: Phoridae) from the BioSCAN Project in Los Angeles (California, USA). *Biodiversity Data Journal* 4: e7756. doi: 10.3897/BDJ.4.e7756

The final twelve new fly species from the first phase of the BioSCAN project. The total new species count for the genus Megaselia in the 2014 sampling was 43.

Selected coverage:

Scientific American: <http://blogs.scientificamerican.com/symbiartic/43-new-species-discovered-in-los-angeles/>

New Scientist: <https://www.newscientist.com/article/2084421-los-angeles-launches-hunt-for-unknown-species-hiding-in-cities/>

Popular Science: <http://www.popsci.com/12-new-city-dwelling-fly-species-found-in-los-angeles>

Phys.org <http://phys.org/news/2016-04-city-angels-flies-unknown-scuttle.html>



Science Daily <https://www.sciencedaily.com/releases/2016/04/160414113421.htm>

Newswise: <http://www.newswise.com/articles/view/651787/?sc=c10>

KCET: <https://www.kcet.org/redefine/citizen-scientists-still-finding-new-insect-species-in-socal>

Lindström, S., Irmis, R.B., Whiteside, J.H., **Smith, N.D.**, Nesbitt, S.J., and A. H. Turner. 2016. Palynology of the upper Chinle Formation in northern New Mexico, U.S.A.: implications for biostratigraphy and terrestrial ecosystem change during the Late Triassic (Norian–Rhaetian). *Review of Palaeobotany and Palynology*. DOI: 10.1016/j.revpalbo.2015.11.006.

Rahman, I.A., Darroch, S.A.F., **Racicot, R.A.** and M. Laflamme. 2015. Suspension feeding in the enigmatic Ediacaran organism *Tribrachidium* demonstrates complexity of Neoproterozoic ecosystems. *Science Advances* 10 (1). DOI: 10.1126/2ciadv.1500800

Vendetti, J.E., Cedric Lee, and Ole Willadsen. Inventory of Southern Californian terrestrial gastropods: a citizen science collaboration between the public and the Natural History Museum of Los Angeles County.

Abstract with student and citizen science authors, accepted as a talk at the American Malacological Association and Western Society of Malacologists meeting in Ensenada, Mexico, June 12-15, 2016. This is the first “publication” based on the SLIME project and includes an NHM research intern (Ole) and SLIME citizen scientist (Cedric).

*The terrestrial snails and slugs of Southern California are generally understudied and particularly poorly inventoried in the urban and suburban environments of Los Angeles County. This Wallacean shortfall (of native and non-native species) is partly due to the jigsaw puzzle of private land (e.g. backyards) that characterizes LA County’s urban sprawl. The Natural History Museum of Los Angeles County has sponsored a citizen science initiative called SLIME (Snail and slugs Living In Metropolitan Environments) that uses the iNaturalist web platform to centralize terrestrial gastropod observations from citizen scientists throughout Southern California. Since November, 2015 the SLIME project has revealed 3 species records for the State of California and six new records for Los Angeles County, including the snails—*Cochlicella barabara* and *Lauria cylindracea*, and slug — *Arion hortensis*. The success of the SLIME project has been in its person-to-person and virtual collaborations between the public and Museum systematists, creating a genuine citizen science partnership.*

Staff Departures & New Staff

History



Rosa Mazon is working as an Assistant Collections Manager in the Seaver Center on a project funded by the John Randolph Haynes and Dora Haynes Foundation. Her work will enhance the primary sources available to researchers from the collection of business incorporation records of the 1920s and 1930s.

Richard Thai, a former NHM docent and volunteer and now a new graduate of the UCLA Masters of Library and Information Science program, is working as an Assistant Collections Manager in the Seaver Center on the collection of business incorporation records, a project funded by the John Randolph Haynes and Dora Haynes Foundation.



Citizen Science

The Museum's Citizen Science Program is now part of Research & Collections, and we are glad to have them here! From time to time, this new category in the Newsletter will contain updates from the many activities of our Citizen Science office. As a start, in this issue we are proud to introduce the Program:

Who we are

Lila Higgins, Manager

Lila Higgins is the Manager of Citizen Science and has worked at the Museum since 2008. She has an undergraduate degree in Entomology from UCR, a master's in Environmental Education from CSUSB, and has been working in the museum education and citizen science fields for the past 15 years.

Miguel Ordeñana, Coordinator

Miguel joined NHM in April 2013 as an environmental educator and wildlife biologist. Miguel recruits and trains citizen scientists, and conducts urban mammal research in L.A. and co-leads NHM's Southern California Squirrel Survey. He holds a bachelor's degree in Environmental Studies from the University of Southern California, and a M.S. in Ecology from the UC, Davis.

Richard Smart, Coordinator

Richard has been at NHM for 3.5 years, and has over 14 years of experience in environmental education in both formal and informal settings. He has a B.S. in Wildlife & Fisheries Sciences from Texas A&M University, and a M.S. in Environmental Science from the University of North Texas.

What we do

The Citizen Science Program recruits and trains people to participate in NHM's citizen science projects, particularly those that use the iNaturalist platform. We also provide feedback and support after people have started making observations. Below is a list of projects on iNaturalist that we support. We also accept submissions via e-mail: nature@nhm.org, and via social media: #natureinla on Facebook, Instagram, Twitter.

L.A. Nature Map

La Brea Tar Pits Wildlife Survey

Nature Gardens Survey

Reptiles and Amphibians of Southern California (RASCals)

Snails and Slugs Living in Metropolitan Environments (SLIME)

Southern California Squirrel Survey

Programs we offer

Citizen Science Meet Ups: Offered every other month, this program lets the public participate in a project for a few hours. Hands-on training is provided, and participants work in teams to implement the protocols of that day's citizen science project. Group reflection on the experience is encouraged.

Citizen Science + Cocktails: An evening lecture series, where researchers share the stories behind their projects. Set in a relaxed atmosphere with fresh food, music, and signature cocktails.

BioBlitzes: NHM hosts BioBlitz events to help our scientists fill in data gaps in certain locations, or to take advantage of different seasons and time periods throughout the year. These events may last one day or take place over several months. Sometimes they focus on a specific group of animals or they accept all plant and wildlife observations.

Community BioBlitzes: The goal of this program is to extend NHM's urban nature and citizen science initiatives further, by creating new relationships with underserved and park-poor communities in Los Angeles County. We are partnering with L.A. County Libraries to implement this program.

Miscellaneous

Dinosaur Institute

Luis Chiappe traveled to Buenos Aires to join the selection committee of the first paleontological award of the Bunge & Born Foundation, Argentina's largest private foundation, May 4th to the 9th.

The selection committee of the Bunge and Born Foundation. Vice President of Research and Collections, Luis Chiappe, seated, far left.



Mineral Sciences

New Laboratory and Research Collections Space



We just completed the first stage of building a vibrant, educational, and state-of-the-art material analysis research laboratory to visually showcase museum research/mentoring activities and develop long lasting partnerships with academic institutions and industry. The walls and furniture were installed May 2016. We are looking forward to outfitting the lab with new instrumentation over the summer months!

View of new lab space in Mineral Sciences.

UNRC

Snail Findings

There was an amazing SLIME observation of an aberrant *Cornu aspersum* (Common European Garden Snail) with three optical tentacles (at right)! iNaturalist observation here: <http://www.inaturalist.org/observations/3083322>

Some photos posted on iNaturalist displayed snails galloping (technically called loping)! Citizen scientists@littlecrane13 and Rob Kutner and Sasha Kutner (age 7) observed *Cornu aspersum* moving with a loping gait, in which the snail makes a dashed line of mucus instead of a continuous one. What is fascinating about this behavior is that snails will lope when moving on dry surfaces like concrete or wood, but not on a smooth surface like glass.

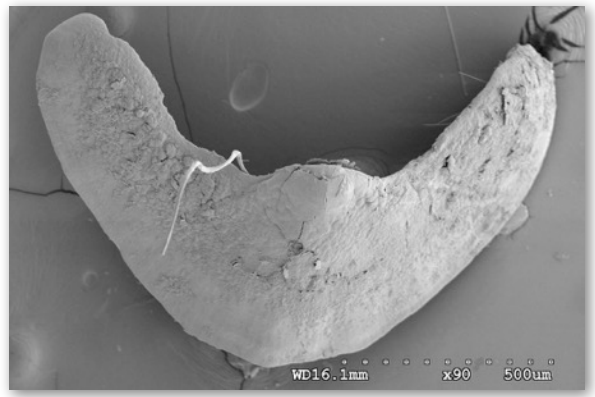


Loping and adhesive crawling (when a snail or slug leaves a continuous slime trail) move the snail at the same pace, but loping uses less mucus and possibly saves the snail from getting too dry when moving on a porous surface. Rob and Sasha Kutner observed loping on concrete and @littlecrane13 observed this phenomenon on tile.

<http://www.inaturalist.org/observations/2935686>

<https://www.instagram.com/p/BD9QBN6pm1d/>

First NHM SEM of a slug jaw: probably of a Deroceras or Ambigolimax species. From the gut of a herp!



Curiosity Show



The *Curiosity Show* is now live! Check out our video blog about UNRC research, discoveries, and people. Our first three episodes have featured Jann Vendetti and snails, Brian Brown and flies, and Greg Pauly and lizards! Watch it at: <http://www.nhm.org/nature/video/the-curiosity-show>. New episodes will be arriving monthly.

Dr. Chris Thacker, host of the Curiosity Show.

UNRC Official Launch

The UNRC was officially launched on April 14th with a spectacular press event. The launch was covered by a number of outlets:

Associated Press (picked up by USA Today, U.S. News and World Report, ABC News, Science Daily, Yahoo!

News, CBS Los Angeles, Los Angeles Daily News, The Orange County Register, San Francisco Chronicle, Boston Herald, Miami Herald, The News & Observer, Daily Mail): <http://www.bigstory.ap.org/article/927b317ec56347b69a296931a49785dc/la-museum-enlists-volunteers-search-bugs-plants>

KPCC/SCPR: <http://www.scpr.org/news/2016/04/14/59565/la-s-natural-history-museum-launches-center-focus/>

LA Times: <http://www.latimes.com/science/la-me-museum-urban-wildlife-20160414-story.html>

LAist: http://laist.com/2016/04/14/urban_nature_research_center.php

Larchmont Buzz: <http://www.larchmontbuzz.com/larchmont-village-news/nhm-launches-urban-nature-research-center/>

Smithsonian: <http://www.smithsonianmag.com/smart-news/scientists-catalog-creatures-every-corner-los-angeles-180958798/?no-ist>

The Guardian : <http://www.theguardian.com/us-news/2016/apr/14/los-angeles-biodiversity-nature-study-natural-history-museum>

Tidbits

Brian toured the CEO of Guess and his wife on Saturday March 26, they loved Entomology and were excited about the urban nature work going on at the Museum.

Brian did an interview with *Chronicle of Philanthropy* on May 6.

KCET Squirrel Article: https://www.kcet.org/define/as-social-squirrels-vie-for-territory-smartphones-can-keep-score?utm_source=twitter&utm_medium=social&utm_campaign=define

KCET "Why Citizen Science is Important": <https://www.kcet.org/define/why-is-citizen-science-important>

KCET LASS: <https://www.kcet.org/define/citizen-spider-science-tracking-the-decline-of-las-black-widows>

KCET New Reptiles: <https://www.kcet.org/define/citizen-scientists-finding-new-reptile-species-in-southern-california>

The *Research & Collections Newsletter* is issued quarterly by the Research and Collections staff of the Natural History Museum of Los Angeles County.

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Layout: N. Dean Pentcheff.

All issues of the newsletter may be found at:
<http://research.nhm.org/newsletters>