

# CATALYST

DENVER MUSEUM OF NATURE & SCIENCE MAGAZINE

AUTUMN 2019

## INSIDE ///

THE SCIENCE BEHIND PIXAR

EXTREME SPORTS:  
BEYOND HUMAN LIMITS

TURTLE ODYSSEY 3D





NARRATED BY  
**RUSSELL CROWE**

# TURTLE ODYSSEY

3D

An  
**SK Films**  
Release

AN SK FILMS RELEASE OF A DEFINITION FILMS PRODUCTION "TURTLE ODYSSEY" NARRATED BY RUSSELL CROWE DIRECTOR OF PHOTOGRAPHY JON SHAW  
EDITED BY CASPAR MAZZOTTI PAUL PHELAN ADDITIONAL PHOTOGRAPHY NICK ROBINSON ORIGINAL MUSIC BY MICHAEL LIRA SOUND DESIGN BY LIAM EGAN LINE PRODUCERS TIM MADDOCKS JODI MADDOCKS  
EXECUTIVE PRODUCER JOHN WEILEY EXECUTIVE PRODUCERS JONATHAN BARKER WENDY MACKELGAN MIKE SLEE BERNARD GROSS 3D POST PRODUCER STUART MONKSFIELD  
WRITTEN BY AMELIA MCCARTEN PAUL PHELAN DIRECTED BY PAUL PHELAN CASPAR MAZZOTTI PRODUCED BY DAVID GROSS

DEFINITION FILMS

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## DEAR MEMBERS,

You never know where or when inspiration will strike, which is just one reason why we are very excited about some initiatives that are expanding the Museum's reach in new ways.

Building on the success of community engagement projects such as the Magic Mountain archaeological site and *Dinosaur Gulch* play area in Cherry Creek Shopping Center, we're designing experiences for other locations around the state because imagination and discovery need a home everywhere.

In June, we celebrated the opening of the new *Mars Outpost* play area at Colorado Mills. This free experience is intended as a special place for families to learn and create lasting memories together. Kids climb across a "Mars-scape" and engage in activities that encourage wonder about our universe, the scientific process, and more.

*Mars Outpost* is presented with generous support from the Sexton Family Foundation, with our deepest gratitude. We hope you'll visit it with some of the young people in your life.


We're also grabbing the keys and taking nature and science on the road! Over the next five years, our brand-new Curiosity Cruiser pop-up trailer will make its way into schools, parks, neighborhoods, fairs, and festivals across the Front Range, presenting unexpected ways for people to make discoveries about themselves and the world around them. The Curiosity Cruiser will debut in early 2020, loaded with multisensory experiences that will give our community a taste for discovery. A combination of storytelling, hands-on experiments and dissections, and interactive adventures will concoct some science fun.

Extending the Museum experience to where people live, play, work, and learn means we can reach more people in more places that are meaningful to them. Just as we strive to do onsite at the Museum, we want to inspire curiosity, encourage exploration, and spark conversations about nature and science everywhere. Your support helps pave the way. Thank you for being a member!



George Sparks, President and CEO  
president@dmns.org

For more information about the *Everyone, Everywhere* strategic plan, visit [dmns.org/e2](http://dmns.org/e2).

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Photography by Rick Wicker, Chris Schneider, Joe Sertich.



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## FIND IT @ DMNS.ORG

- Print-at-home tickets for surcharged exhibitions, Planetarium and IMAX shows, lectures, and programs
- Reservations for members events
- Visiting tips and curated plans
- Membership renewals and purchases
- How to Donate

Join Our Community:



Cover by Rick Wicker

## ON THE COVER

From the paleobotany collections  
*Macginitia wyomingensis*  
DMNH EPI.24514  
Extinct species of sycamore  
Green River Formation, Eocene  
Uinta Basin, Wyoming



## NATURE PLAY COMMUNITY OPEN HOUSE

Nearby Nature is a key initiative in the *Everyone, Everywhere* strategic plan. This exciting project is a partnership between the Museum and Denver Parks and Recreation to redevelop a small playground near the Museum in City Park into a nature play space, as part of the City Park Master Plan Update.

You are invited to the next Nearby Nature open house on Saturday, September 21, from 9:30 to 11:30 a.m. We will share next steps for the play space, with a review of the preliminary concept and information on how community input will continue to inform the process. Reservations recommended. For more information, visit [dmns.org/nearbynature](http://dmns.org/nearbynature).

## NEW SEASON FOR SAPIENS PODCAST

Is it human nature to be generous, do all humans see color the same way, and why don't people today eat more bugs? These are just some of the questions being posed in the second season of the podcast *SAPIENS: A Podcast for Everything Human*.

*SAPIENS.org* is a digital magazine about the science of anthropology funded by the Wenner-Gren Foundation for Anthropological Research. It is headquartered at the Museum, and Dr. Chip Colwell, senior curator of anthropology, serves as its editor-in-chief. Since 2018, the *SAPIENS* podcast has provided an expanded perspective, sharing inside scoops from the anthropologists who study what it means to be human. It is available on Apple podcasts, Google podcasts, Pandora, Spotify, or wherever you get your podcasts. Visit [sapiens.org/podcast-season-2](http://sapiens.org/podcast-season-2).



## BIRDLY FLIES INTO THE VR ARCADE

Finally, a chance to find out what it feels like to fly! *VR Arcade*, located on Level 1 in the Museum, now offers Birdly, a virtual full-body flight experience.

When you ride Birdly, you command the experience instinctively with arm and hand movements correlated to the flapping of wings and manipulation of primary feathers for speed, altitude, and navigation. Using a head-mounted VR display, you will be enveloped in a high-resolution virtual landscape charged with interactive zones and entertaining surprises. Come sail away!

*VR Arcade* also features six bays for individual VR experiences and a four-person Virtual Reality Transporter ride. It is open daily from 10 a.m. to 5 p.m. Some age and other requirements apply. Tickets available onsite only. Find out more at [dmns.org/vrarcade](http://dmns.org/vrarcade).

## THE NATURAL CHOICE FOR HOLIDAY SHOPPING

With great appreciation for your membership support, enjoy special rewards during the annual Members Holiday Shop Sale and Appreciation Weekend, Friday–Sunday, November 1–3.

- 25% off select items in the main Museum Shop\*
- 10% off gift memberships
- 20% off in T-Rex Cafe
- 50% off IMAX and Planetarium tickets

\*Extra 15% discount does not apply to books or the Pixar exhibition shop. Special rewards are valid only in person in the Museum on November 1–3, 2019.







## BACK TO SCHOOL TIME

The Museum offers a variety of experiences that take 21st-century learners on adventures that inspire them to think, learn, and grow through science.

- Offsite: At Your Place includes experiences that transform classrooms to a wonderland of discovery through guided or unguided activity boxes loaded with all the tools needed to fuel students' passion and curiosity for nature and science.
- Onsite: At the Museum offerings include flexible self-guided field trips, facilitated Field Trip Adventures, and Overnight Experiences.
- Virtual Experiences connect classrooms with the Museum for fun interactive science workshops and broadcasts from the field with scientists.

School and organized youth groups receive *free* admission to the Museum every day, and scholarships are available for many fee-based programs. Online booking makes reserving school programs easier than ever. Learn more at [dmns.org/teachers](https://dmns.org/teachers).

Educators, we invite you to a free evening on Monday, September 23, from 6 to 9 p.m., to see what the Museum and other organizations in the Scientific & Cultural Facilities District have to offer you and your students. Visit with SCFD groups, grab a snack and a cocktail, preview IMAX and Planetarium shows, connect with your colleagues, and explore the new exhibition *Extreme Sports: Beyond Human Limits*. Reservations required at [dmns.org/teachers](https://dmns.org/teachers).

## INSIGHT LANDER HELD OVER

A full-scale model of the Mars InSight lander remains on display in *Space Odyssey* until late October. InSight, NASA's latest mission, landed on Mars last November. The model was commissioned by NASA and built for the Jet Propulsion Laboratory. The Museum is the first stop on the InSight model's tour across the country. Discover more about the mission at [mars.nasa.gov/insight](https://mars.nasa.gov/insight).



## SUMMER OF FOSSILS

The Earth Sciences Department had a busy summer! In mid-May, a new set of *Triceratops* fossils was discovered at a construction site near Wind Crest continuing care retirement community in Highlands Ranch. Thanks to the generosity of Erickson Living, the Museum's staff and volunteers were able to excavate the site through mid-July, unearthing about 30 percent of the animal's skeleton. The Museum expresses its gratitude to Wind Crest and Brinkmann Constructors for their support and enthusiasm, and especially to Erickson Living for donating the fossils to the Museum. Discover more at [dmns.org/highlandsranchdinosaur](https://dmns.org/highlandsranchdinosaur).

Meanwhile, the Earth Sciences team also pulled off one of the largest dinosaur rescues in the Museum's history. Over the past four years, a large number of huge fossil jackets have accumulated in some of the Museum's remote backcountry field sites. This included a nearly complete skull of *Pentaceratops*, the largest skull of any land vertebrate, and two partial duck-billed dinosaur (hadrosaur) skeletons in northwestern New Mexico, along with skeletons of the crested duck-bill *Parasaurolophus* and new species of raptors and horned dinosaurs in southern Utah.

In early June, with support from a high-capacity helicopter from Helicopter Express, the Museum team pulled all of these skeletons from their various field sites and brought them back to Denver. Many of the loads were more than 3,000 pounds, with the heaviest tipping the scales at 4,500 pounds!

All of this occurred on top of the paleontology team's regularly scheduled work, full of new fossil discoveries in southern Utah, New Mexico, Wyoming, South Dakota, North Dakota, and Montana. The fossils are entering the paleontology collections where they will be prepped for future study and possible display.

## GET A BEHIND-THE-SCENES VIEW OF YOUR FAVORITE PIXAR FILMS

### NEW TEMPORARY EXHIBITION OPENS FOR MEMBERS ON OCTOBER 10

Everybody has a favorite Pixar film, but what it takes to make one is a mystery to most fans. Now the ingenuity behind the magic comes to light in the new exhibition *The Science Behind Pixar*. This immersive experience explores the science, technology, engineering, art, and math concepts used at Pixar Animation Studios every day to bring their beloved films and characters to life.

Movie theater audiences witnessed a filmmaking revolution in late 1995 when Pixar released *Toy Story*. The movie was the first of its kind—a feature-length computer-animated production—and critics and the general public alike were enthralled to see something so fresh and groundbreaking on the big screen. Nearly 24 years and 21 box office hits later, Pixar continues to impress and delight.

Each section in *The Science Behind Pixar* focuses on a step in the filmmaking process—modeling, rigging, surfaces, sets and cameras, animation, simulation, lighting, and rendering—delivering an unparalleled view of the production pipeline used by the Pixar artists and computer scientists. You and your family will enjoy more than 50 interactive elements, hear first-hand from the studio's production teams in video profiles, and come face-to-face with re-creations of popular characters, including Buzz Lightyear, Dory, Mike and Sulley, Edna Mode, and WALL•E.

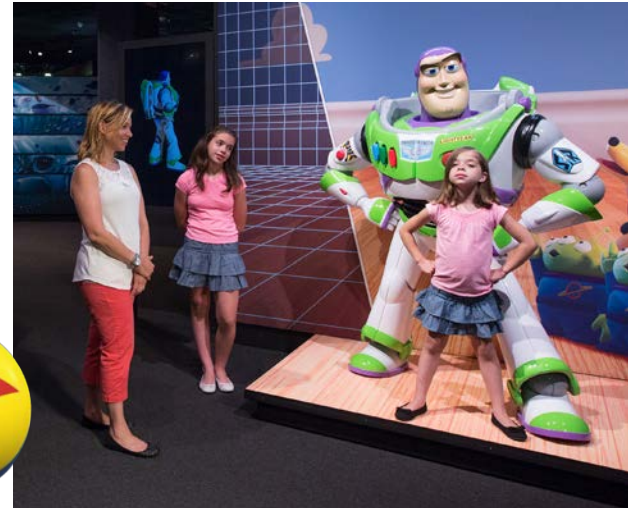
These are just some of the activities included in the experience:

- Build a robot inspired by the ones in *WALL•E*.
- Discover how a bug's-eye view was achieved for *A Bug's Life*, through camera angles and large-set design within the computer.
- Create a virtual 3D shape and play it in a 360-degree view.
- See and touch scale models of many of the beloved Pixar characters.
- Explore lighting challenges, similar to what Pixar artists faced in creating animated water in *Finding Nemo*.
- Create a stop-motion animation of a leaping lamp and watch a short film of what you produced.
- Discover how models are given a virtual skeleton so the animators can add movement.
- Become immersed in the techniques used to add color and texture to every surface in a film.
- Take your photo with human-sized re-creations of many of your favorite Pixar characters.





"I'm especially excited about this exhibition because it really delves into what I do on a day-to-day basis," said Greg Koronowicz, the Museum's senior digital media producer. "Not only can you enjoy the Pixar characters but now you can see how pixels are like paint on a canvas that brings a story to life. This experience is eye-opening for people who have been enjoying Pixar films for years and inspiring for the next generation of filmmakers and animators."



## MEMBERS TIPS

- *The Science Behind Pixar* will be open daily October 11–April 5 (except December 25). Find out more about Members Preview Day on October 10 and Members Evenings on the back cover.
- Timed tickets are required for all members and guests. Purchase your tickets at [dmns.org](http://dmns.org) or at 303.370.6000 (daily, 9–5). Afternoon is the best time to call.
- The complimentary admission tickets you receive with your membership may be upgraded for admission to *The Science Behind Pixar*.
- Giving Club members may use their Flex Tickets for free admission to *The Science Behind Pixar* through their ecard or online Museum account. Find out more about upgrading your membership to the Giving Club on the inside back cover.
- Weekday late afternoons and weekend early mornings tend to be less busy in our temporary exhibitions. School groups generally visit during weekday mornings. Parking can be challenging during popular times, so please consider this when you plan your visit and exhibition entry.
- Members receive a 10% discount in the Pixar gift shop.
- Find out more at [dmns.org/pixar](http://dmns.org/pixar).

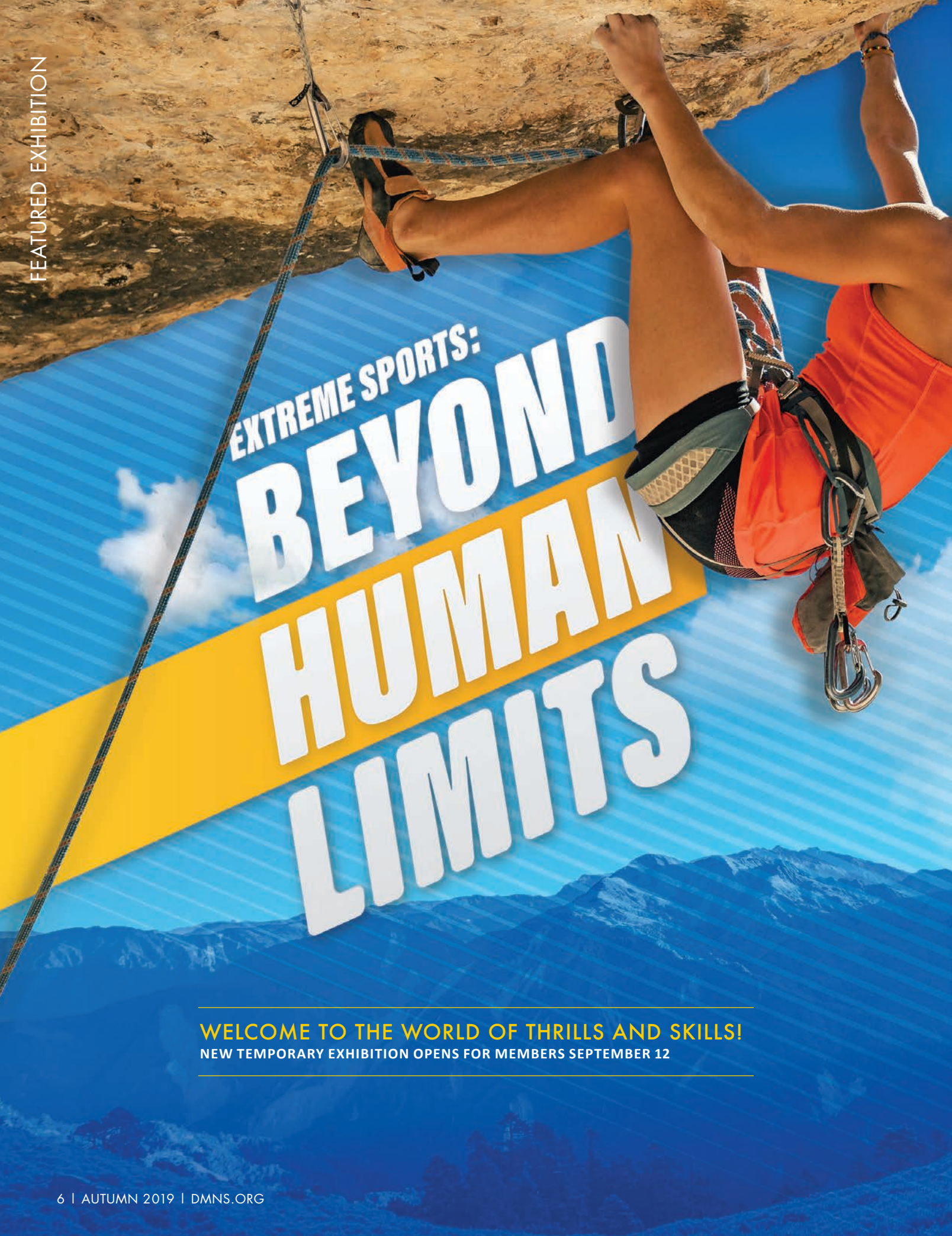
This exhibition was developed by the Museum of Science, Boston in collaboration with Pixar Animation Studios. © Disney/Pixar. All rights reserved. Used under authorization.



Produced by

 Museum of Science.



A full-page photograph of a rock climber in an orange shirt and black shorts, suspended by a rope and gear against a blue sky with clouds. The climber's legs are spread wide, and their hands are gripping the rock face. The background shows a mountain range under a clear blue sky.

# EXTREME SPORTS: BEYOND HUMAN LIMITS

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**WELCOME TO THE WORLD OF THRILLS AND SKILLS!**  
NEW TEMPORARY EXHIBITION OPENS FOR MEMBERS SEPTEMBER 12

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Do you *really* know what it takes? The new exhibition *Extreme Sports: Beyond Human Limits* goes inside the minds and bodies of extreme athletes to explore the psychology of their motivations and the science behind some of the riskier sports, such as wingsuit flying, ice and rock climbing, parkour, free diving, and much more. The exhibition is free with general admission.

A common perception is that extreme sports are only for “adrenaline junkies.” While these sports are thrilling to both participants and fans, *Extreme Sports: Beyond Human Limits* dispels these types of misperceptions and shows these activities typically involve high levels of intentional technical skill and decision-making, intense physical and mental exertion, and proper use of specialized gear, which has nearly become a science into itself.

The exhibition focuses on the environments in which extreme athletes perform: in the air, snow and ice, in the water, on the rocks, and on the ground. You will experience these sports through profiles of international athletes—including some from Colorado—illustrating amazing commitment and perseverance. Immersive exhibits and hands-on activities showcase the science, creativity, and innovation in extreme sports and inspire you to learn more about your own personal limits. These are some of the activities that will be fun for families and friends because of the range of challenges:

- Try out a course developed by Ninja Nation. (Plan to wear sturdy shoes! No flip-flops or barefeet.)
- Virtually race the backcountry slopes.
- Get a sense of balancing along a high-line.
- Discover what it’s like to pilot a wingsuit.
- Take a virtual leap off of a cliff.
- Traverse kid-sized climbing walls for everyone that test grip and flexibility.
- Snuggle into a portaledge (hanging tent) and imagine dozing off on a rock ledge.
- Test your concentration abilities and your inclination to participate in extreme activities.
- Trace in the footsteps of a parkour athlete and get into an upside-down halfpipe photo op.
- Step into the Immersion Room and see what it feels like to ride a mountain bike and a whitewater kayak!



“Colorado is the perfect state for the U.S. debut of this exhibition,” said Dr. Garth Spellman, our Museum’s curator of ornithology and curatorial advisor for *Extreme Sports*. “Our mountains, snow, skies, and waterways provide the perfect playground for extreme activities and have born world-renowned Colorado athletes. However, even in Colorado, myths about these athletes and their activities persist. *Extreme Sports* demonstrates the artistry, skill, and training required to pursue these amazing feats of human physicality.”

*Extreme Sports: Beyond Human Limits* will be open daily September 13–April 12 (except December 25). Admission is free for members. The Members Preview is September 12. Find out more at [dmns.org/memberevents](https://dmns.org/memberevents).

*Extreme Sports: Beyond Human Limits* was developed and produced by Science North, Sudbury, Ontario, Canada, in partnership with the Ontario Science Centre.



## FERN FRENZY

BY NICOLE NEU-YAGLE, KRISTEN MACKENZIE, AND IAN MILLER, PhD

Natural history museums hold the libraries of life, collections of both modern and ancient organisms. It is impossible to have all of these irreplaceable specimens on display at all times, just as it would be impractical to leave all the books in a library open and on tables all at once. The Denver Museum of Nature & Science keeps the specimens safe, but because they belong to everyone, making the collections accessible is one of the Museum's ongoing pursuits. Information technology has tremendously boosted this endeavor.

In 2011, the National Science Foundation (NSF) implemented the program Advancing Digitization of Biodiversity Collections. Through this program, the NSF funds collaborative digitization projects focused on biological and paleontological collections. In 2018, our Museum received a collaborative NSF grant to participate in a Thematic Collections Network, which are digital databases and photographs of specimens housed in museums and academic institutions. Collections staff work in tandem across the nation, and even the globe, to build one shared online database. The Museum is participating in the Pteridophyte Collections Consortium along with 39 other institutions.

Pteridophytes are vascular plants that reproduce through spores instead of seeds, such as ferns, horsetails, club mosses, and many others, including extinct fern-like plants. This particular project is special because it is the first to compile modern records of fern and fern-like specimens with fossil records from museums. Previously it has been one or the other.

Why pteridophytes? Ferns and fern allies were the first plants to evolve roots and leaves, and the first to form forests. For hundreds of millions of years, they dominated many ecosystems on Earth, ranging from wispy little plants to towering trees. These fossils provide clues to our planet's past climates and the ecology of forests before the evolution of flowers. Flowering plants are relative newcomers, only becoming dominant during the end of the age of dinosaurs.

Our own ancestors, the early mammals, emerged and evolved in the shade of ferns. For this, and many other reasons, it is fitting that pteridophytes were chosen as the theme, spanning the known fossil record of ferns all the way up to and including living ferns. Pteridophytes are alive and familiar today, but to digitize their more than 400-million-year history and make it searchable is a huge undertaking! The goal is to assemble digital records and images of 1,766,671 fossil and herbarium specimens, all perusable online.

The Museum has about 85,000 fossil plants in the paleobotany collection, housed in the Avenir Collections Center. Our entire fossil pteridophyte collection of 7,000 specimens has been added to the grand compendium. The success of this project would absolutely not be possible without the invaluable participation of our fantastic volunteers. Thirty-one volunteers have worked with the collections staff, cataloging and photographing plant fossils. The Department of Earth Sciences is proud to contribute our specimens to this fantastic fern frenzy!

## DISCOVER MORE

Nicole Neu-Yagle is assistant collections manager, Kristen MacKenzie is collections manager, and Dr. Ian Miller is chair and curator of paleobotany, all in the Department of Earth Sciences.

Visit the pteridophyte project portal at [pteridoportal.org/portal](http://pteridoportal.org/portal), hosted by iDigBio and funded by the NSF. The Museum's fossils will soon be viewable at this site.

The Museum's pteridophytes are accessible at [science.dmns.org/integrative-collections/search-our-collections](http://science.dmns.org/integrative-collections/search-our-collections). Search "polypodiopsida" and check "items with multimedia attached." Pterido-nerds can be spied on through their Facebook group: Pteridophyte Collections Consortium Thematic Collections Network TCN Group.

In addition, many fossil plants are on display in *Prehistoric Journey*.

The paleobotany collection contains over 85,000 fossil plants, 7,000 of which are pteridophytes (ferns or fern allies). The specimens span more than 350 million years of Earth's history, originating primarily from the western United States. The variety of paleobotany pictured includes specimens imaged and databased for the Pteridophyte Collections Consortium. (DMNH EPI.25027, EPI.19763, EPI.54109, EPI.23446, EPI.25120, EPI.8705, EPI.11141, EPI.25027, EPI.50051)







# thank you

## FOR CREATING A REALITY FOR COLORADO KIDS

More than 750 guests supported the Museum's mission at Museum After Dark: Perception on Friday, June 14. Generous community leaders raised over \$500,000 to provide free Museum admission to more than 29,000 kids from schools and organized youth groups.

The event was co-chaired by Museum Trustee John Levisay and his wife, Katie, and by Museum Trustee Anne M. McCarthy. The "sensational" evening included playful tastes and sips, entertainment, and science experiences, all to heighten the senses and explore how perception is more than simply a window into the world around us—it's what makes us human. The event was themed to complement the temporary exhibition *Our Senses: Creating Your Reality*. The party stretched past midnight as the Young Professionals hosted the After Dark Soiree.

The Museum sincerely extends its gratitude to our co-chairs and to our Major Sponsors: Lisa Levin Appel, Steve and Susan Halstedt and the Fulcrum Foundation, Don and Susie Law and Law Estate Wines, Hal and Ann Logan, and Blair and Kristin Richardson and Bow River Capital.

We also deeply appreciate the efforts and support of the Museum's Young Professionals members and the evening's many volunteers, sponsors, auction donors, and guests, who are all helping to bring science to life for children of all ages. See a photo album of Museum After Dark 2019 at [www.dmns.org/mad](http://www.dmns.org/mad).



Pictured above center from left, Dr. Shandra Wilson and George Sparks with event co-chairs Katie and John Levisay and Anne M. McCarthy. Other scenes from the evening: Human contortionists moved among the guests; the Young Professionals partied at the After Dark Soiree; and, no, that's not a fried egg; that's a mango and coconut panna cotta!





## LEGACY SUPPORTERS LOOK TO THE FUTURE

The Museum was delighted to honor the Edwin Carter Legacy Society during an annual spring luncheon. Legacy Society members and their friends received a special behind-the-scenes look at Museum on Wheels, a key initiative in the *Everyone, Everywhere* strategic plan. Two vehicles decked out with customized adventures will soon make their way into community locations around the state. The Curiosity Cruiser pop-up trailer will hit the road in early 2020, and a larger RV-size experience begins fabrication later this year.

The Legacy Society was established to recognize donors who have shown their enduring commitment to the Museum through a planned gift. The group's namesake, Edwin Carter, was a dedicated naturalist who nearly single-handedly assembled one of the most complete collections of Colorado fauna. His collection was the nucleus for the Museum's founding in 1900. This type of dedication—past, present, and future—allows the Museum to continue to serve our community and encourage lifelong learning and scientific discovery.

Supporters who notify us that they have named the Museum or the DMNS Foundation in their will, trust, or as a beneficiary are invited to join this exclusive group and be honored through invitations to the annual luncheon and other special events. Find out more at [dmns.planmylegacy.org](https://dmns.planmylegacy.org), or by calling Megan Fisher, director of advancement, at 303.370.8259.

Pictured above: Joe LaCamera, left, helps Diane Minka keep her balance as she takes a virtual tour of the RV experience for Museum on Wheels.

## VOLUNTEERS CATALYZE OUR MISSION

Congratulations to Marcia Ornstein and Bob Bruner, pictured below with George Sparks, for receiving their 30-year awards as Museum volunteers! They were among the 119 volunteers who received service awards at a ceremony in May. In 2018, 1,805 volunteers of all ages and backgrounds contributed 224,220 hours across the Museum. Whether volunteering in an administrative area, in an exhibit hall, in a lab, or in many other ways, these faithful people have a lasting impact on the success of the Museum. Thank you, volunteers! There's a place for everyone at the Museum. Find out more at [dmns.org/join/volunteering](https://dmns.org/join/volunteering).



## CORPORATE MEMBERSHIPS REWARD YOUR EMPLOYEES

When your business becomes a corporate member at the Museum, your employees and their families will enjoy admission, events, discounts, and more. Corporate membership is a unique benefit you can add to your total rewards package. Memberships start at \$2,500 annually and a portion is tax-deductible. At the same time, your organization will impact the community by supporting education for the workforce of the future. Get details at [dmns.org/corporatemembership](https://dmns.org/corporatemembership) or by email at [corporatemembers@dmns.org](mailto:corporatemembers@dmns.org).



## FORTY YEARS AFTER COLORADO'S LAST GRIZZLY BEAR

BY JOHN DEMBOSKI, PhD

In September 1979, Ed Wiseman, a hunting guide out of Moffat, Colorado, crossed paths with a grizzly bear during an expedition near the headwaters of the Navajo River. Wiseman was attacked and mauled, but while he was down he managed to fatally wound the bear by hand using an arrow. Severely wounded, Wiseman spent a frigid night in the high country until help arrived the next day. He was airlifted by helicopter to Alamosa, where he spent the next month in the hospital recovering from his injuries.

Because grizzly bears were protected by law, a seven-month investigation into the incident ensued until it was determined that Wiseman had acted in self-defense. The case was officially dropped when he passed a polygraph test in April 1980.

Besides the incredible story of Wiseman's encounter, a major surprise to people was that he was attacked by a grizzly bear and not a black bear, the other bear species native to Colorado. Grizzly bears had been considered extirpated, or locally extinct, in Colorado since 1951. One of the suspected last grizzly bears had been killed 28 years earlier near the same area. A few days after the attack, state biologists confirmed it had been a grizzly bear. Grizzlies have not been sighted in Colorado since that day.

Once the investigation wrapped up, the bear came to the Museum and was cataloged into the mammal collection. The specimen consists of the skull (pictured below), the skeleton, except for the right front leg and scapula, and a beautiful grizzled hide. The adult female weighed 350 to 400 pounds and was estimated to be 16 to 20 years old, based on examination of her worn-down teeth. The skeleton is riddled with calcified spurs, signs of osteoarthritis.



The grizzly specimen has provided further insight into the bear's history. A 1999 study of the stable isotopes of carbon and nitrogen in the bear's hair and bones—a method to figure out what an animal eats—suggested its diet was more than 90 percent meat. A 2006 study, which also examined grizzly bears from other museum collections, showed the bear carried a unique genetic signature found only in the San Juan Mountains of southern Colorado and northern New Mexico.

Public curiosity about the fate of grizzlies in Colorado hasn't waned in the 40 years since the Wiseman incident. Questions about grizzlies are among the more common media inquiries the Museum receives. Colorado's grizzly bears were once found throughout the state; the population in the remote San Juan Mountains was one of the last to be eliminated in the lower 48. Although there are reports of grizzly bear sightings in Colorado to this day, these remain unconfirmed, and most likely represent sightings of our remaining native black bears. Black bears are common in the Colorado mountains and can range in color from black to light brown. A big male can weigh up to 700 pounds, which might easily lead people to misidentify it as a grizzly bear.

Grizzly bears, a type of brown bear (*Ursus arctos*), once ranged across western North America from Mexico to Alaska, including across the Great Plains as far east as Missouri. By the early 20th century, they had disappeared from 98 percent of their original range in the lower 48 states due to human-caused mortality and habitat loss. In North America, besides Alaska and Canada, they are currently found only in Wyoming, Montana, Idaho, and Washington.

Grizzly bears, along with other large mammals such as bison and wolves, are iconic western animals that have been dancing with extinction over the last 200 years. You could argue that Colorado's last grizzly bear represents the outcome of tension between humans and wild animals and a loss of unbridled freedom in the West, all at the expense of progress.

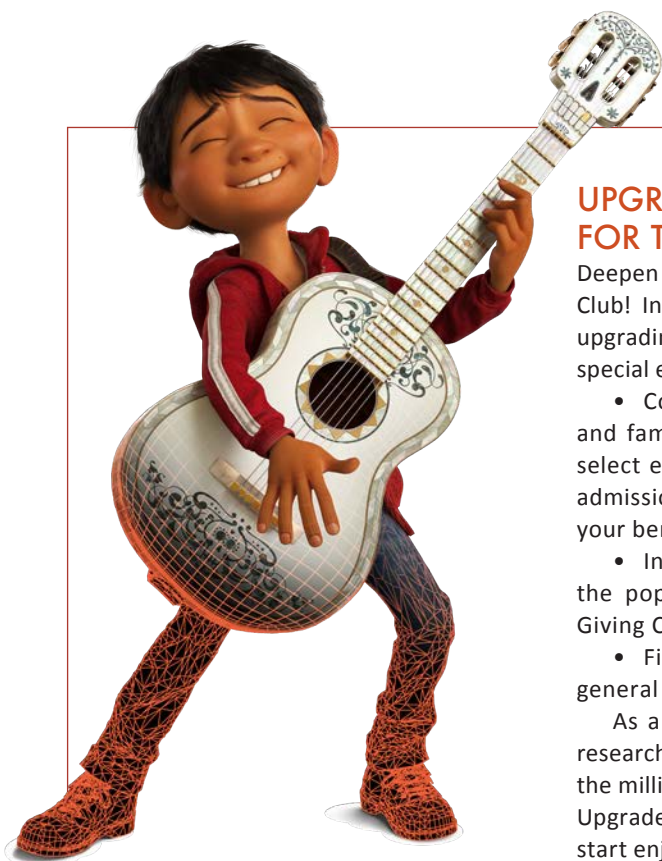
### DISCOVER MORE

Dr. John Demboski is chair and curator of mammals in the Department of Zoology. Learn more at [dmns.org/science](http://dmns.org/science).

The skull of Colorado's last grizzly bear (pictured left) is on exhibit in the Bears and Sea Mammals Hall.

Hear more stories about encounters with grizzlies during a lecture by Dr. Barrie Gilbert on Tuesday, September 17. Find out more on p. 5 of the Discover insert.





## UPGRADE TODAY AND RECEIVE FREE TICKETS FOR THE SCIENCE BEHIND PIXAR

Deepen your passion for nature and science by joining the Giving Club! In addition to supporting scientific research and education, upgrading your membership to the Curator level gives you access to special events and exclusive benefits throughout the year.

- Complimentary Flex Tickets (14) for yourself or friends and family to use for popular programs such as Science Lounge, select evening lectures, IMAX and Planetarium shows, or for free admission to *The Science Behind Pixar*. Flex Tickets let you design your benefits based on your personal interests.
- Invitations to special events throughout the year, including the popular Behind-the-Scenes Night and IMAX Night, just for Giving Club members.
- First access to summer camp registration, even before general members!

As a Giving Club member, your gift supports ongoing scientific research, preserves rare artifacts, and fuels lifelong discovery in the millions of people served by Museum exhibitions and programs. Upgrade today by logging in to your online Museum account and start enjoying additional benefits right away.

Find out more at [dmns.org/givingclub](http://dmns.org/givingclub) or call 303.370.6306. Monthly installment plans start at just \$42 per month.

*The Science Behind Pixar* was developed by the Museum of Science, Boston in collaboration with Pixar Animation Studios. © Disney/Pixar. All rights reserved. Used under authorization.

## GET THE MOST FROM YOUR MEMBERSHIP

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- Read the monthly eNews with members-only news, tips, and special offers. Not hearing from us by email? Send your address to [members@dmns.org](mailto:members@dmns.org).
- Keep your membership current with Auto-Renew. Enroll at 303.370.6306 (daily, 9–5) and get a free gift. Your expiration date is printed on the mail label on the back of this magazine.
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Your membership helps us provide outstanding science education programs, exhibitions, and research.

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- [www.dmns.org/members](http://www.dmns.org/members)
- Members Lane at Ticketing



## THE SCIENCE BEHIND PIXAR EXCLUSIVE MEMBERS-ONLY EVENTS

Get hands-on with the science, technology, engineering, art, and math concepts used at Pixar Animation Studios every day to bring their beloved films and characters to life. Enjoy more than 50 interactive elements, meet the production teams in video profiles, and even come face-to-face with re-creations of your favorite Pixar characters!

Tickets required for all events: \$9 adult, \$7 senior/junior

**RESERVATIONS:** [www.dmns.org/memberevents](http://www.dmns.org/memberevents).

### MEMBERS-ONLY PREVIEW DAY

Thursday, October 10 • 10 a.m.–9 p.m.

Tickets required. See it before it opens to the public!

### MEMBERS-ONLY EVENING

Wednesday, October 23 • 6–9 p.m.

Tickets required. An optional prepurchased dinner is available for an additional charge: \$14 adult, junior, senior member; \$9 child. **Dinner reservations due by October 9.**

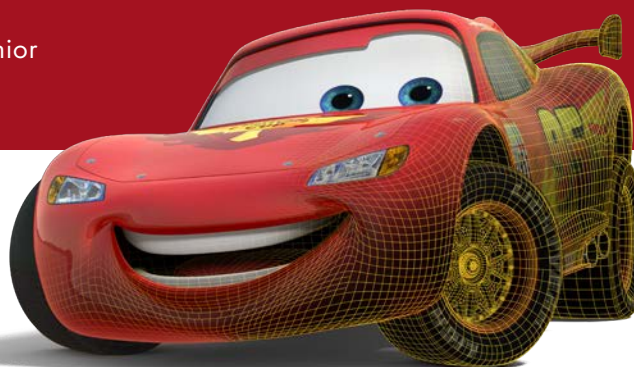
### MEMBERS-ONLY EVENING FOR 21+

Tuesday, November 5 • 6–9 p.m.

\$50 member, \$60 nonmember

In addition to an adults-only evening in the exhibition, enjoy hors d'oeuvres and a cash bar followed by dinner.

**Reservations due by October 22.**



Events subject to selling out.

**MAKE YOUR RESERVATIONS TODAY!**

No walk-up tickets will be available. Exhibition entry by timed ticket due to gallery capacity. Only *The Science Behind Pixar* will be open on Members Evenings; the rest of the Museum will be closed.

*The Science Behind Pixar* was developed by the Museum of Science, Boston, in collaboration with Pixar Animation Studios. © Disney/Pixar. All rights reserved. Used under authorization.



# DISCOVER

ADULTS | CHILDREN | FAMILIES | TEENS

AUTUMN 2019







EVERY 3RD THURSDAY  
*The* SCIENCE  
Lounge

## SEPTEMBER 19: EXTREME SPORTS

Explore some of the riskiest activities in the world in the temporary exhibition *Extreme Sports: Beyond Human Limits*. Find out how the human body responds to mental and physical challenges, and learn about the history of climbing from the Bradford Washburn American Mountaineering Museum.

## OCTOBER 17: BLOODSUCKERS

Vampires, bats, and parasites galore! Beware of all things that bite during this night dedicated to creatures who feast on blood. Costumes encouraged.

## NOVEMBER 21: EXOPLANETS AND EXTRATERRESTRIALS

Are we alone? The search is on for the Goldilocks planets, where conditions are not too cold and not too hot but just right to sustain life. Create an alien and explore the night sky through telescopes.

BUY TICKETS AT [DMNS.ORG/SCIENCELOUNGE](http://DMNS.ORG/SCIENCELOUNGE)  
\$13 MUSEUM MEMBER, \$15 NONMEMBER

MEDIA SPONSOR

**5280**  
MAGAZINE



# AUTUMN 2019

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## EXHIBITIONS

### Extreme Sports: Beyond Human Limits

September 13–April 12 • Anschutz Gallery • Free for members  
Experience the thrill of extreme sports in interactive exhibits and immersive environments that go inside the minds and bodies of some of the world’s greatest athletes.

### The Science Behind Pixar

October 11–April 5 • Phipps Gallery • Special ticket required  
Get hands-on with science, technology, math, art, and engineering concepts used at Pixar Animation Studios to bring their beloved films and characters to life.

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### PHIPPS IMAX THEATER • Now showing

*Apollo 11: First Steps Edition 2D*  
*Superpower Dogs 3D*  
*Turtle Odyssey 3D*  
Hollywood Favorites • Check [dmns.org/imax](http://dmns.org/imax)

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### GATES PLANETARIUM • Now showing

*Black Holes: The Other Side of Infinity*  
*Destination Solar System*  
*Imagine the Moon*  
*One World, One Sky: Big Bird’s Adventure*  
*Space Tours Live*

### ADMISSION • Special ticket required for *The Science Behind Pixar*.

	MUSEUM	IMAX	PLANETARIUM
Adult member	FREE	\$7	\$5
Senior member (65+)	FREE	\$6	\$4
Junior member (3–18)	FREE	\$6	\$4

The Museum is open daily 9 a.m.–5 p.m., with extended hours at various times.  
Dates, times, prices, and schedules subject to change. Find more ways to discover @ [dmns.org](http://dmns.org).

On the cover: From the zoology collections, ZH.3373,  
*Selenodesmium* sp. (filmy fern, Tracheophyta), Queensland, Australia




# SEPTEMBER

SUN	MON	TUE	WED	THU	FRI	SAT
<b>Hollywood Films • Every Thu, Fri, &amp; Sat</b> <b>Discover more @ dmns.org</b>						
1	2	3	4	5	High School Trivia Night, p. 12	7
Dissection Connection, p. 10		Bugs Bites and Brews, p. 5	Indigenous Film, p. 5	Bird Walk, p. 10 <i>Extreme Sports</i> Members Preview	<i>Extreme Sports</i> opens	Drones for Middle Schoolers, p. 12
8	9	10	11	12	13	14
		<i>Extreme Sports</i> Members Evening  Walk Among Bears, p. 5		Science Lounge, inside cover	<i>Extreme Sports</i> for Families, p. 11	Sensory-Friendly <i>Extreme Sports</i> , p. 11
15	16	17	18	19	20	21
	Autumnal equinox	Fijian Album, p. 6	<i>Extreme Sports</i> Members Evening (21+)  60 Minutes in Space, p. 6	Science Riot, p. 6		Girls in Space for Scouts, p. 11
22	23	24	25	26	27	28
SCFD Community Free Day  SCFD Scientific & Cultural Foundation <small>FOOTING: MARCHES ET PAYSABLE</small>	Spider Biology, p. 8					
29	30					



# OCTOBER

SUN	MON	TUE	WED	THU	FRI	SAT
			Elk Bugling, p. 9		Halloween (Middle School), p. 12	
		1	2	3	4	5
				<i>The Science Behind Pixar</i> Members Preview Indigenous Film, p. 5	<i>The Science Behind Pixar</i> opens	
6	7	8	9	10	11	12
Indigenous Film, p. 5	SCFD Community Free Day  Skulls in Graphite, p. 9	Raptors, p. 6		Science Lounge, inside cover Bird Walk, p. 10		Pixar Family Workshop, p. 11
13	14	15	16	17	18	19
Halloween (High School), p. 12		Barn Swallows, p. 7	<i>The Science Behind Pixar</i> Members Evening	Living History concert, p. 7	Tricks and Treats Family Overnight, p. 11	
20	21	22	23	24	25	26
	Changing Landscapes, p. 9		60 Minutes in Space, p. 6			
27	28	29	30	31		

# NOVEMBER

SUN	MON	TUE	WED	THU	FRI	SAT
					Members Holiday Sale	
					1	2 Night at the Museums (Denver Arts Week), 5–10 p.m.
Daylight saving time ends	Inside the Minds of Thrill-Seekers, p. 7	<i>The Science Behind Pixar</i> Members Evening (21+)	Wolf Recovery, p. 8		Pixar Party (21+), p. 8	Junior Surgeons/Cutting Edge, p. 12
3	4	5	6	7	8	9
	La Brea Tar Pits course, p. 9	<i>Turtle Odyssey</i> 3D program, p. 8	Indigenous Film, p. 5	Science Riot, p. 6 Bird Walk, p. 10		
10	11	12	13	14	15	16
SCFD Community Free Day 			60 Minutes in Space, p. 6	Science Lounge, inside cover		
17	18	19	20	21	22	23
	School Break Camp					
	Teen Movie Night, p. 12			Thanksgiving, Museum open until 3 p.m.		
24	25	26	27	28	29	30



# AfterHOURS

AT THE DENVER MUSEUM OF NATURE & SCIENCE

## Bug Bites and Brews

Drink and delight in the emerging world of insect cuisine! Taste test some insect dishes, learn which species make a great main dish, and watch cooking demonstrations by a local chef. From cultivation farms like Rocky Mountain Micro Ranch to brewing beer with bugs, find out how these small creatures could make a big impact on carbon footprints and the culinary scene.

Tuesday, September 10 • 6:30–9 p.m. • \$27 member, \$33 nonmember • Ages 21+ • Cash bar

## Indigenous Film Series

The Museum is pleased to partner with the International Institute for Indigenous Resource Management and the Denver American Indian Commission to present Indigenous Film, a monthly series. Join us for a variety of films, from documentaries to feature films and youth film showcases. Then participate in a discussion with the Denver American Indian Commission and other special guests. In October, don't miss the annual Indigenous Film Festival. More information at [www.dmns.org/visit/events-and-activities](http://www.dmns.org/visit/events-and-activities).

Wednesdays, September 11 & November 13 • 6:30 p.m. • Phipps Theater • free

Film Festival: Thursday, October 10, 6:30 p.m. (screening & reception) and Sunday, October 13, 4:30 & 7 p.m. (screening) • Ricketson Auditorium • free



## One of Us: A Biologist's Walk Among Bears

Dr. Barrie Gilbert's fascination with grizzly bears almost killed him—literally. A close encounter with a frightened bear during a research trip in Yellowstone National Park left him clinging to life. Not only did Gilbert recover, he returned to fieldwork, devoting the next several decades to understanding and protecting these often-maligned giants. Drawn from his decades of experience, Gilbert's book *One of Us: A Biologist's Walk Among Bears* explodes myths that depict grizzlies as bloodthirsty beasts and reveals the intelligent, adaptable side of these astonishingly social animals.

Tuesday, September 17 • 7 p.m. • Ricketson Auditorium • \$8 member, \$10 nonmember • book sale & signing

## Fijian Album: A Bailey Lecture Film

Former Museum director Alfred M. Bailey conducted fieldwork around the world during the mid-20th century. He shared his adventures during a popular film lecture series making armchair travel possible long before the internet. Bailey's *Fijian Album* film was made before the first commercial flight to Fiji occurred in 1951, once again capturing a culture on film before it became known to the rest of the world. Although the original narration was lost, René O'Connell, the Museum's image archivist, will share how a script was re-created using Bailey's notes and field journals for a new voiceover by Dave Baysinger, who was the Museum's videographer for over 40 years and knew Bailey well. After the film, Dr. Steve Nash, chair of the Anthropology Department, and Sarah Hagelin, associate professor at the University of Colorado Denver, will discuss the historical context of this film.

Tuesday, September 24 • 7 p.m. • Ricketson Auditorium • \$8 member, \$10 nonmember

## 60 Minutes in Space

Go "behind the stories" with space scientists Dr. Steve Lee and Dr. Ka Chun Yu using the best images and animation available to help understand new developments. No reservations required. Seating is limited to first-come, first-served.

Wednesdays, September 25, October 30, November 20 • 7 p.m. • Ricketson Auditorium • free

## Science Riot

Cheer on local scientists turned comedians as they attempt standup for the first time and wax hilarious about the unique nuances of their work. This one-of-a-kind comedy night for science fans will get you laughing with (and at!) some of the biggest brains in town.

Thursdays, September 26 & November 14 • 7:30 p.m. • Science Atrium • \$12 member, \$15 nonmember • ages 18+ • cash bar

## Digital Earth: Extreme Environments

Climb to the peaks of Everest and traverse the hottest desert with space science curator Dr. Ka Chun Yu and geologist Dr. Bob Reynolds. With immersive satellite images projected onto the planetarium's full dome, you'll be transported to some of Earth's most extreme environments, no passports or specialized gear required.

Tuesday, October 8 • 7 p.m. • Gates Planetarium • \$8 member, \$10 nonmember

## Raptors Live!

During this adults-only evening, enjoy a live raptor demonstration in the Museum's wildlife halls with Anne Price, curator at the Raptor Education Foundation and an avid falconer since age 16. Price will also feature her new publication *The Raptors of North America: A Coloring Book of Eagles, Hawks, Falcons, and Owls*. The book has activities, coloring exercises, and short essays describing a variety of raptors, and is illustrated by Donald Malick. After the demonstration, René O'Connell, image archivist, will detail the Museum's collection of Malick's artwork and his time as a field artist in Botswana. A reception with a display of Malick's paintings and a chance to color in Botswana Hall follows the program. Ages 21+.

Tuesday, October 15 • 7 p.m. • \$15 member, \$18 nonmember • cash bar • book sale





## Barn Swallows and Biodiversity

Barn swallows are one of the most widely distributed vertebrates on Earth. With six different subspecies, these birds provide an exciting opportunity to study environmental adaptation, including the built environment of our own species. Dr. Rebecca Safran, associate professor of ecology and evolutionary biology at the University of Colorado, will share insights from her group's work on barn swallows along the Front Range and around the world. These investigations show how behaviors related to migratory and mate selection shape population boundaries, leading to more understanding of the origin and breakdown of biodiversity. Presented in partnership with Bird Conservancy of the Rockies with promotional support from Denver Audubon and Audubon Rockies.

Tuesday, October 22 • 7 p.m. • Ricketson Auditorium • \$12 Museum, Bird Conservancy, or Audubon member, \$15 nonmember

## Living History: Concert in a Wildlife Hall

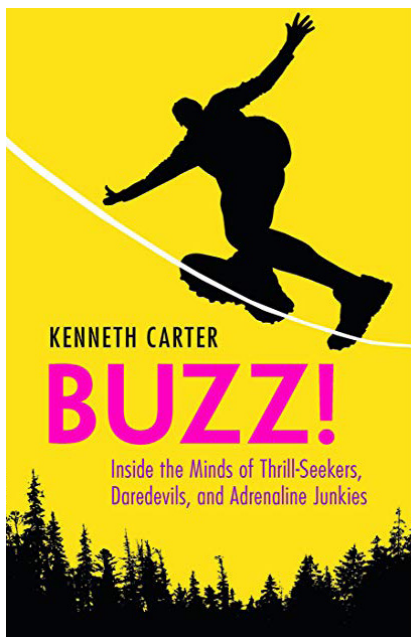
Enjoy a unique evening inside beautiful Botswana Hall. Living History is a first-of-its-kind event, in partnership with Groupmuse, that will explore how human and natural history are constantly reshaped. Begin with a performance of a chamber piece by 18th-century composer Chevalier de Saint-Georges, a virtuoso of African descent who was a contemporary (and rival) of Mozart. Chevalier's story and music will be introduced with a special performance by Stephen Brackett of the Flobots. During intermission, explore the wildlife halls and see zoology specimens and cultural artifacts from Africa. Then experience a reading of a new, in-development musical by award-winning writer and polymath Brenton Weyi, an inaugural fellow in the Denver Center Playwrights' Group. With a talented cast and musical ensemble, Weyi will present Act I of *My Country, My Country*, based on the true story of Congolese independence during the Cold War.

Thursday, October 24 • 6 p.m. or 8 p.m. • \$35 member and nonmember • ages 21+ • cash bar • purchase tickets from Groupmuse; info at dmns.org

## Buzz! Inside the Minds of Thrill-Seekers

Most of us crave new experiences and sensations. Whether it's our attraction to the hottest new burger place or the latest gadget, newness tugs at us. But what about those who can't seem to get enough? They jump out of planes, climb skyscrapers, and eat anything. They don't have a death wish but seemingly a need for an adrenaline rush, no matter what. Join Dr. Ken Carter, author of the new book *Buzz! Inside the Minds of Thrill-Seekers, Daredevils, and Adrenaline Junkies*, as he explores the lifestyle, psychology, and neuroscience behind personalities that seek high sensations. Carter is the Charles Howard Candler Professor of Psychology at Oxford College of Emory University.

Monday, November 4 • 7 p.m. • Ricketson Auditorium • \$12 member, \$15 nonmember • book sale & signing





## The History and Future of Wolf Recovery

Government-supported wolf eradication programs began in the United States as early as 1630 because the animals' existence conflicted with the agricultural interests of an expanding nation. These efforts continued for years, until both gray and red wolves were nearly exterminated. Mike Phillips, director of the Turner Endangered Species Fund, led both the Red Wolf Recovery Program and the project to return gray wolves to the Greater Yellowstone ecosystem. Phillips will examine the past, present, and future of wolf recovery, particularly in western Colorado, which has become the keystone for these efforts.

Wednesday, November 6 • 7 p.m. • Ricketson Auditorium • \$12 member, \$15 nonmember

## Pixar Party

Get animated for an adults-only night to celebrate the science and technology behind some of your favorite Pixar films. Dress up as your favorite Pixar character and play with 50 interactive elements in the temporary exhibition *The Science Behind Pixar*. A live band will cover classic tunes from Disney and Pixar. Ticket includes one drink and appetizers. Costumes encouraged.

Friday, November 8 • 7-10 p.m. • \$40 member, \$50 nonmember • Ages 21+ • Cash bar

## Turtle Odyssey 3D

Dive into the remarkable world of sea turtles during this special screening of *Turtle Odyssey 3D*. Follow Bunji the green sea turtle from a hatchling into adulthood as she swims thousands of miles, meets incredible creatures, and has some wild encounters. After the film, Chris Prague, senior conservation ecologist for The Nature Conservancy (TNC), will discuss turtle ecology and TNC's wildlife conservation efforts in Colorado. Coffee and dessert follow. Presented in partnership with TNC of Colorado.

Tuesday, November 12 • 7 p.m. • Phipps IMAX Theater  
• \$12 Museum or TNC member, \$15 nonmember



## COURSES

### Spider Biology

Whether you love spiders or fear them, this class will spin you up in a web of wonder. Dr. Paula Cushing, curator of invertebrate zoology, shares the family ties between spiders and their closest relatives, weaving in facts about their biology, their importance in terrestrial environments, and their ecology and behavior. You will learn how to identify different families of spiders and become certified to take part in the Colorado Spider Survey, a project for citizen scientists.

Mondays & Wednesdays, September 30–October 9 • 6:30–8:30 p.m. • \$110 member, \$140 nonmember



## Prehistoric Creature Skulls in Graphite

Join Marjorie Leggitt, an award-winning Illustrator whose work you see in *Prehistoric Journey*, as she shares her artistic expertise and guides you through the process to develop a fully rendered graphite illustration of a fossilized prehistoric animal skull. Learn how to measure and scale cranial physiology, and use various pencils and blenders to develop values and suggest depth. This class for all levels includes a special presentation about skull anatomy by Dr. David Krause, curator of vertebrate paleontology. Supplies included.

**Mondays & Wednesdays, October 14-23 • 6-9 p.m. • \$225 member, \$255 nonmember**

## Colorado's Changing Landscapes

Why is our state graced with 14,000-foot peaks and the headwaters of so many rivers? What processes formed the high plains? Join geologist Dr. Bob Reynolds to dig into dynamic landscapes of Colorado and learn there are no random ridges, no mysterious valleys. Earth has a logical history, and here in Colorado we stand on the shoulders of many as we evaluate the texture of our terrain. The discussion will provide participants with the scientific insights and explanations for our splendid scenery.

**Mondays & Wednesdays, October 28-November 6 • 6:30-8:30 p.m. • \$110 member, \$140 nonmember**

## The Past and Future of the La Brea Tar Pits

Rancho La Brea is famous for its incredibly preserved Pleistocene fauna of dire wolves, saber-toothed cats, camels, and horses, providing insights into animals and unique life-forms living and dying in heat, methane gas, and "tar." Dr. Sue Ware, a Museum instructor who also has 18 years of experience as a researcher at Rancho La Brea, will explore the faunal history, miraculous preservation, and geology of this iconic site and why it has captured the attention of a worldwide cadre of scientists. Includes lectures combined with a virtual and tactile lab experience.

**Mondays & Wednesdays, November 11-20 • 6:30-9:30 p.m. • \$110 member, \$140 nonmember**

## FIELD TRIP

### Elk Bugling

Enjoy a brisk autumn evening, brilliant fall colors, and the echo of bull elk bugling in the pines on historic Evans Ranch with research associate Ron Beane. The Museum has received exclusive permission to visit this private ranch and experience the sights and sounds of elk in full rut. Hike the wooded areas to a secluded location near the elk where, at sundown, you will sit back, relax, and listen for the eerie evening sounds of the Colorado wilderness. Ages 12 and up are welcome. Space is limited, and reservations are required.

**Wednesday, October 2 • 3 p.m. • \$75 member, \$100 nonmember**



## BIRD WALKS

Join expert birder Norm Lewis on birding outings across the Front Range. Transportation is not included. Participants caravan from a meeting location.

### Chico Basin Ranch

Chico Basin Ranch, a working ranch southwest of Colorado Springs, has become famous among Colorado birders as a superb locale for spring and fall migration. The Bird Conservancy of the Rockies operates a banding station at the ranch, a fine opportunity to see birds in the hand. In the arid uplands, curve-billed and sage thrashers patrol the cholla groves, canyon towhees scuttle, and loggerhead shrikes watch for prey from high perches. In the wooded areas, see migrant warblers, vireos, flycatchers, kinglets, and ladder-backed woodpeckers. It is possible to see more than 100 species of birds in a day at the ranch. Admission into Chico Basin Ranch is included.

Thursday, September 12 • 6 a.m.–5 p.m. • \$40 member, \$55 nonmember

### Barr Lake State Park

This locale has a wealth of bird life at any season. On the prairies are western meadowlarks, ring-necked pheasant, and northern harrier cruising for small mammals. The riparian vegetation and cottonwood galleries around the lake host dozens of species of migrating warblers, vireos, and flycatchers, while the lake itself is at times covered with waterfowl. If water levels have been drawn down for agricultural purposes, exposed mudflats can attract numerous species of shorebirds. Ducks, coots, grebes, cormorants, and loons dot the lake surface.

Thursday, October 17 • 7 a.m.–5 p.m. • \$27 member, \$35 nonmember

### Boulder and Western Weld County

As autumn winds down, the lakes and ponds of Boulder and nearby western Weld County become irresistible destinations for returning waterfowl, raptors, and wintering songbirds. A walk around the Walden/Sawhill Ponds Complex can produce wintering sparrows, great horned owl, belted kingfisher, woodpeckers, chickadees, and the two Colorado wintering shorebirds, killdeer and Wilson's snipe. Nearby Union Reservoir is bordered by marshes with blackbirds and prairies with meadowlarks, and perhaps a horned lark or two. The reservoir typically abounds with various grebes and common loons, with Pacific or red-throated loons on occasion. This region has some of the best late-fall birding in Colorado!

Thursday, November 14 • 7 a.m.–5 p.m. • \$27 member, \$35 nonmember

## FAMILIES

Tickets for child and accompanying adult must be purchased together for all programs for families.

### Dissection Connections for Families • Grades 2–9 with adult

The family that dissects together stays together! With a skilled Museum educator as your guide, observe the dissections of a sheep brain, lung, and heart, then try your hand with a scalpel as you learn about amazing body systems.

Sunday, September 8 • 10 a.m.–2 p.m. • member: \$20 adult, \$15 child/junior • nonmember: \$25 adult, \$20 child/junior



## Extreme Sports for Families •

All ages

Explore the temporary exhibition *Extreme Sports: Beyond Human Limits*. After you have an extreme dinner at the Museum, try your hand at the skills required to master your own extreme sports and work on some extreme crafts.

Friday, September 20 • 6–9 p.m. • member: \$20 adult, \$15 child/junior • nonmember: \$25 adult, \$20 child/junior



## Sensory-Friendly Extreme Sports for Families • All ages

Enjoy some low-sensory time in the temporary exhibition *Extreme Sports: Beyond Human Limits* with reduced sound, increased lighting, and a supportive environment for families with sensory integration issues. Spots limited; reservations recommended.

Saturday, September 21 • 6–8 p.m. • free

## Girls in Space for Scout Badges • For Brownies and Juniors

In space no one can hear you learn! Earn your Junior Space Science Investigator or Brownie Space Science Adventurer badge using the Museum's resources with our amazing educators. You'll receive your badge at the end of the event.

Saturday September 28 • 10 a.m.–2 p.m. • \$40 scout, adults free

## Pixar Family Workshop • Grades 2–5 with adult

Time to get animated with this weekend workshop to celebrate the temporary exhibition *The Science Behind Pixar*. Enjoy family friendly activities, admission to the exhibition, and an opportunity to make your own Pixar-inspired creation.

Saturday, October 19 • 9–11 a.m. or 1–3 p.m. • member: \$20 adult, \$15 child/junior • nonmember: \$25 adult, \$20 child/junior

## Tricks and Treats! Family Overnight • Grades K–8 with adult

Spend a memorable night experiencing the magic of the Museum with your whole family! Check out the spooky science all around us and learn about things that go BUMP in the night. Get all dressed up to go trick or treating in the Museum before finding your “resting place” in our world-famous diorama halls. Enjoy a hot breakfast the next morning before heading home.

Friday–Saturday, October 25–26 • member: \$65 adult, \$55 child/junior • nonmember: \$80 adult, \$70 child/junior

## SCHOOL BREAK CAMPS (GRADES K–5)

At the Museum, your child will spend school breaks experiencing fun and wonder, IMAX films and planetarium shows, and marvels of our exhibitions. Camps available for grades K & 1, 2 & 3, and 4 & 5. Limited early morning drop-off and late pickup options available; information at dmns.org.

Thanksgiving: Monday–Wednesday, November 25–27 • 9 a.m.–3:30 p.m. • \$160 member, \$175 nonmember  
Winter Break, by the day: December 23, 26, 27, 30, 31, January 2, 3 • 9 a.m.–3:30 p.m. • \$60 member, \$75 nonmember per day

## CHILDREN'S WORKSHOPS

### **Drones for Middle Schoolers • Grades 3–6**

We hate to drone on about this, but in this awesome program kids will get the opportunity to learn about and build their own robotic drones to fly around. Send your budding engineers to this interactive workshop and get a good introduction to the world of automatic flight!

Saturday, September 14 • 10 a.m.–2 p.m. • \$60 member, \$70 nonmember

### **Junior Surgeons, Grades 2 & 3 • Cutting Edge, Grades 4–6**

Observe and perform dissections to find out how the human body functions. Dissect hearts and lungs, eyes, brains, and frogs. Examine real bones, listen to your own heartbeat, and more!

Saturday, November 9 • 9 a.m.–3 p.m. • \$60 member, \$70 nonmember

## TEENS

Teen programs are generously supported by Lincoln Hills Cares.

### **High School Trivia Night • Grades 9–12**

Celebrate the start of school with this free trivia night after hours at the Museum! Enjoy brain-crushing science trivia as teams face off, along with free snacks and beverages. Spots are limited.

Friday, September 6 • 7–9 p.m. • free

### **Halloween**

Teens take over the Museum at this totally free, uniquely teen night. Check out frightening creatures, both dead and alive, fun activities, and freaky food. Costumes welcomed!

Grades 6–8 only: Friday, October 4 • 7–9 p.m. • free

Grades 9–12 only: Sunday, October 20 • 7–9 p.m. • free

### **Teen Movie Night • Grades 6–12**

This Thanksgiving break, take a night away from the family and head to the Museum for a free movie! Teens choose the movie by voting during the Halloween events in October.

Monday, November 25 • 7–9:30 p.m. • free

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Reservations and general information: 303.370.6000, daily, 9 a.m.–5 p.m., or [dmns.org](http://dmns.org)

Print-at-home tickets are available at [dmns.org](http://dmns.org) with no handling fee. You will receive a confirmation email with further information about your event. Sales are final on all tickets unless the Museum cancels.

Giving Club Flex Tickets may be used for complimentary admission to many temporary exhibitions, IMAX and Planetarium shows, Science Lounge, and select lectures. Info at [dmns.org/givingclub](http://dmns.org/givingclub).

Please always bring your membership card and photo ID when you visit the Museum.

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# THE MUSEUM SHOP

## *Holiday Sale*

**NOVEMBER 1–3**

KICK-START YOUR HOLIDAY SHOPPING WITH US AND ENJOY SPECIAL REWARDS ALL WEEKEND LONG!

- 25% OFF SELECT ITEMS IN THE MUSEUM SHOP\*
- 10% OFF GIFT MEMBERSHIPS
- 20% OFF IN THE T-REX CAFE
- 50% OFF IMAX AND PLANETARIUM TICKETS

\*Extra 15% discount does not apply to books or the Pixar exhibition shop. Special rewards are valid only in person in the Museum on November 1–3, 2019.



**MEMBERS SAVE 10% EVERY DAY!**



**T-REX  
CAFE**

SALAD BAR, GRILL, KIDS MEALS – LEVEL 1  
11 a.m. – 2 p.m.

GRAB & GO SANDWICHES, SNACKS – LEVEL 1  
9 a.m. – 4 p.m.

COFFEE LAB – LEVEL 2  
9 a.m. – 3 p.m.

Proudly serving locally sourced Colorado products.

