

CATALYST

DENVER MUSEUM OF NATURE & SCIENCE MAGAZINE

WINTER 2018

INSIDE ///

¡CUBA!

MINDBENDER MANSION

GENES AND GRAINS



The background of the poster is a vibrant underwater scene. At the top, a large school of silver fish swims in a column. Several dolphins are visible: one in the upper left, another in the middle left, and a third in the lower left. On the right side, a large brown seal is swimming towards the bottom right. The bottom of the poster is filled with a colorful coral reef and various tropical fish, including yellow and black striped butterflyfish and orange and white striped butterflyfish.

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DEAR MEMBERS:

This season of gratitude is the perfect time to say thank you for supporting arts and culture! You do this not only as a Museum member but also countless other ways, as evidenced in the recent economic impact report from the Colorado Business Committee for the Arts. Cultural events in metro Denver generated a record \$1.9 billion in economic activity in 2017, and attendance reached 15 million people! This commitment to vibrant arts and culture is one of many reasons the Denver area is a special place to live.



As a member, you make an impact every day at the Museum helping to ignite a lifelong understanding of how science plays a role in taking care of our world and each other. As we approach the holidays, there are some easy ways to add to this support as you enjoy the season.

- Bring your out-of-town visitors to the Museum. A visit is a relaxing way to be together, especially during the holiday rush. Both *iCUBA!* and *Mindbender Mansion* are free with admission and fun for all ages.
- Buy membership gift certificates for your family, friends, and colleagues. This is a thoughtful gift that lasts year-round. Find out more on the back cover.
- Shop in the Museum Shops or buy lunch or coffee in the T-Rex Cafe or Coffee Lab, where your purchases support science education and research.
- You are also supporting the Museum and our cultural partners as you do your holiday shopping. We are grateful to voters that for nearly 40 years, the Scientific & Cultural Facilities District (SCFD) has distributed a mere one penny of every \$10 spent in seven metro counties to help fund cultural activities for all ages.
- Spread the word about how much you value the Museum. We appreciate you being our primary public champions!

Your support was incredible this year, especially during *Dead Sea Scrolls*, which was such an inspiring opportunity to engage with the community and create a once-in-a-lifetime experience for Coloradans and all guests. I look forward to seeing you at the Museum in 2019. Best wishes for a safe and happy holiday season.

George Sparks, President and CEO
president@dmns.org

Read more about CBCA economic impact report at cbca.org.

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CONTENTS

- 2 IN THE KNOW
- 4 FEATURED EXHIBITIONS
- 6 MUSEUM INSIDER
- 8 MUSEUM TREASURES
- 10 GET INVOLVED
- 12 DISCOVER SCIENCE

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- Print-at-home tickets for surcharged exhibitions, Planetarium and IMAX shows, lectures, and programs
- Reservations for members events
- Museum scientists
- Heavens Above sky information
- Membership renewals and purchases

Join Our Community:



Photo by Rick Wicker

ON THE COVER

From the geology collections
Mesolite • EGM.15627

These crystals grew inside the Indian volcanic deposit once thought to have caused the K-T extinction. See this beautiful specimen in Coors Gems and Minerals Hall.

LEONARDO DA VINCI COMES TO LIFE IN DENVER

MEMBERS ADMISSION TICKETS ON SALE JANUARY 9

Inventor, artist, scientist, anatomist, engineer, architect, sculptor, philosopher. Although Leonardo da Vinci died in 1519, his influence has endured. His extraordinary legacy comes to life in *Leonardo da Vinci: 500 Years of Genius*, the most comprehensive exhibition about Leonardo ever developed, opening at the Museum on Friday, March 1. The exhibition is presented in Denver by the Sturm Family Foundation.

You will be plunged into Leonardo's world through the revolutionary SENSORY4 system, featuring high-definition motion graphics combined with authentic multimedia content and cinema-quality audio narrative. Dozens of replicas of Leonardo's machine inventions, built using his detailed codices, reveal how his fundamental scientific and artistic principles continue to impact the world today. In addition, the experience will feature the fascinating "Secrets of the Mona Lisa" exhibit, with super-magnified visual examinations and the only 360-degree replica ever made of the iconic painting.

Whether you are a history aficionado or discovering this illustrious man for the first time, *Leonardo da Vinci: 500 Years of Genius* shows why he remains an inspiration for the ages.

This exhibition was developed by Grande Exhibitions, Australia, and Pascal Cotte, France.

Turn to the inside back cover for information about the Members-Only Preview and Evenings. Find out more at dmns.org/memberevents.



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GET READY FOR SUMMER DAY CAMPS

As a Museum member, you have the benefit of advance registration for Summer Day Camps, this year starting on Tuesday, January 29. If you are not receiving emails from us about summer camps and other Museum insider information, please send your name, member number, and email address to members@dmns.org. Get ready with a schedule at-a-glance and registration information at dmns.org/summercamps. Upgrade to the Giving Club level and receive the earliest access, on Monday, January 28! See p. 10 for details.

SATURDAY MORNING AT THE MOVIES

Take a break from the holiday rush and enjoy an early morning film in IMAX! In addition to evening showtimes, *The Polar Express 3D* will be presented at 8:30 a.m. on weekend mornings from December 1 to 23. See the classic film *The Wizard of Oz* in 3D during evening showings on November 29–December 1 and December 6–8. Find the schedule and ticket information at dmns.org/imax.



KEEP ON COMPOSTING

The new composting program in T-Rex Cafe and Grab & Go is going very well, thanks to steady participation from members, guests, staff, and volunteers. Please pay careful attention to a display near the bins (pictured right) that shows what can or cannot be composted. Thank you for helping to keep our environment healthy!





GETTY HONORED WITH NEW TURTLE

A new species of turtle was recently named to honor Mike Getty (pictured left), the Museum's chief preparator in the Earth Sciences Department who died unexpectedly in 2017.

The prehistoric turtle is named *Gilmoremys gettyspherensis*, in reference to the "Gettysphere," a circle of positive energy that friends and colleagues say surrounded Getty. He found the fossil in New Mexico several years ago. The turtle is an extinct species of softshell turtle, similar to a spiny softshell turtle commonly found in Florida, that lived in ponds throughout the American West about 75 million years ago. It belongs to a group of turtles thought to give rise to the modern flapshell turtles found in southeast Asia today.

"My job as a field-based paleontologist has many perks," said Tyler Lyson, PhD. "However, one of my favorite aspects is naming a new species after colleagues and patrons who have made important contributions to the pursuit of science. This is a huge honor, and one that scientists do not take lightly."

Lyson said Getty was a giant in life and particularly in the field of paleontology. "He built up significant fossil collections in three North American museums, conducted fieldwork and found countless fossils around the world, and mentored numerous budding field paleontologists. The dinosaur *Utahceratops gettyi* was named for him in 2010, and now a fossil turtle, ensuring that Mike's significant contributions to science will be forever recognized."

DISCOVER THE OCEANIC COLLECTION

The Museum's Oceanic collection is one of the largest in the Rocky Mountain region, containing about 700 objects representing the peoples of the Pacific Ocean island region, from Hawaii to Papua New Guinea to Australia. A new publication is revealing the stories behind this collection.

Voyaging through the *Oceanic Collections of the Denver Museum of Nature & Science* is the seventh volume from the *Denver Museum of Nature & Science Annals*. It was written by Halena Kapuni-Reynolds, an intern in the Anthropology Department from the University of Hawaii.

About a third of the artifacts resulted from Museum expeditions to Australia and southwestern Pacific islands beginning in 1949. Although the Oceanic collection is one of the smallest of the Museum's ethnology collections, it is diverse in its materials, technologies, forms, and designs that were used in the early- to mid-20th century. The new volume contains 120 photos of the objects taken by Museum photographer Rick Wicker.

The volume is freely available at dmns.org/science/museum-publications and is also available for purchase. You may also see some of the collection on display on Level 2 in the South Pacific Islands and Australia Halls. These beautiful cultural objects will continue to tell the stories of this fascinating part of the world for years to come.



This *kapkap* from New Ireland in Papua New Guinea is an ornament made of tridacna and tortoise shell, worn either on the forehead or neck of high ranking persons (late 19th to early 20th century, AN-2013-118.587).

PARDON OUR DUST

You may notice some changes coming to the Anschutz Family Sky Terrace beginning in February. We are removing the outer ring on the terrace and adding two new shade structures and another restroom. The changes will create increased capacity for guests to enjoy the terrace. An anonymous donor is covering a significant portion of the project and the remainder will be covered by the Museum's operating budget.

During construction, all floors of the Leprino Family Atrium on the west side of the building will be closed, except for limited access. All exhibition halls will be open during construction.

Projects from the Elevate Denver bond are also beginning. These funds will cover new chillers, boilers, air handling units, cooling tower, and smoke control systems and electrical upgrades, providing mechanical and financial efficiencies that will increase comfort and safety for our guests. Thank you to voters for passing this bond in 2017.



¡CUBA!

Come out of the cold and take a trip to the Caribbean's largest island nation! *¡CUBA!* is a lively exhibition for all ages, where you'll be immersed in the extraordinary biodiversity, cultural traditions, and daily life of this intriguing country.

Stroll along a "plaza" lined with activities and displays sharing the stories behind Cuban icons, and peer into beautiful re-creations of the island's habitats, introducing you to distinctive animals both modern and extinct. You won't soon forget this place of stunning contrasts. The exhibition is presented in English and Spanish, and features these activities:

- Try your hand at the popular Cuban version of dominoes.
- Circle a display of a 1955 Chevrolet Bel Air that reveals the story behind Cuba's vintage cars.
- Enjoy a live music or dance performance. (Schedule at dmns.org/cuba.)
- Meet some live anole lizards.
- Discover that the world's smallest bird lives in Cuba.
- Peer inside a tobacco shed and find out how the Cuban cigar became one of the country's leading exports.
- See two altars or "thrones" created especially for the exhibition, exploring an Afro-Cuban religious faith called "orisha," or Santería.
- Examine dozens of vintage and contemporary examples of Cuba's famous poster art.
- Get to know some of your Cuban American neighbors who live in Denver.

¡CUBA! is organized by the American Museum of Natural History, New York (amnh.org), in collaboration with the Cuban National Museum of Natural History.

MINDBENDER MANSION

Mindbender Mansion offers a real break from the holiday rush and some fun for all ages as you take a brain-teasing adventure. The wacky Mr. E., master brainteaser, puzzler extraordinaire, and current curator of the “Mindbender Society” will welcome you. He will explain key features of the mansion and how to earn a place in the society by unlocking the codes of select puzzles, or you can explore the mansion on your own.

Puzzles and riddles have been a part of human culture for millennia, including some translated from Sumerian cuneiform tablets from 18th century BCE. Trivia is also a fun way to bend your mind! Did you know ...

- One of the earliest-known brainteaser enthusiasts was the Greek mathematician Archimedes. He devised mathematical problems for his peers to solve.
- Cryptograms were originally a secret coding system for the Spartan military in 5th century CE. The Caesar cipher is named for Julius Caesar, who systematically substituted the intelligible part of his messages—the plaintext—with other letters.
- John Spilsbury, an Englishman, invented the jigsaw puzzle in 1767.
- A person who creates or solves crosswords is known as a cruciverbalist.
- More than 50 million people in the United States regularly play crosswords.

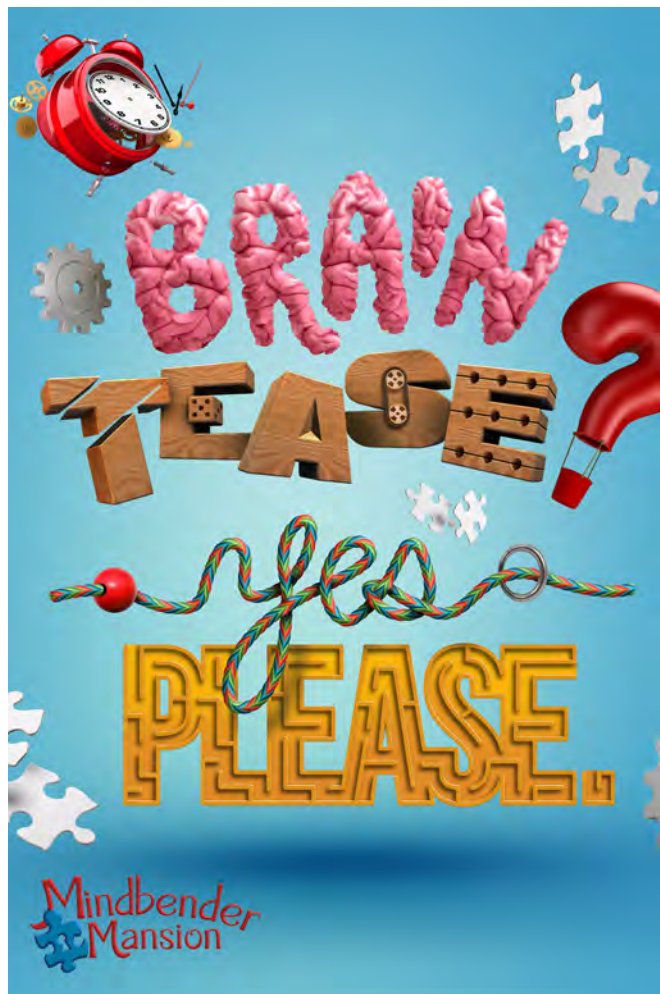


HOLIDAY FUN FOR EVERYONE

These exhibitions are free for members! Both exhibitions have their own themed gift shops where members save 10% every day. The Museum will be open every day through the new year, except December 25. Happy holidays!

- There is only one correct answer and 43 quintillion wrong ones to Rubik's Cube, one of history's most popular puzzles.
- Sudoku was invented in 1979 by an American architect, Howard Garns. It became popular in Japan and was named Sudoku after a Japanese word meaning “single number.” It became an international hit in 2005.
- Scrabble is sold in 121 countries in 29 different language versions. More than 100 million game sets have been sold worldwide. Scrabble is found in one out of every three American homes.

Mindbender Mansion was produced and toured by the Oregon Museum of Science and Industry, Portland, Oregon.





A SPECIAL KIND OF MAP

BY STEPHEN NASH, PhD

From a very young age I was curious about the world around me. I wanted to learn how things worked, and about How do you prepare for a road trip? Not so long ago, it meant an errand to the American Automobile Association or Rand McNally to pick up road maps, and then a few days of actively planning your route. Today, we are more likely to simply type our destination into Google Maps, our GPS units, or other high-tech gadgets.

Old-school maps show you the location of roads, cities and towns, national parks, and a few, highly select geomorphic features, such as lakes, rivers, and some mountain ranges. Digital maps add businesses to the mix, so you're never far away (at least virtually) from the nearest sushi restaurant, library, or movie theater.

But what's missing from these convenient maps? For many Native Americans, a glaring omission is information on sacred landscapes.

Jim Enote, the former director of the A:Shiwi A:wan Museum and Heritage Center at Zuni Pueblo, recognized this gap and decided to do something about it. He created the Zuni Map Art Project, which enlists Zuni religious leaders and artists to create artistic maps from a spiritual and cosmological perspective. These maps allow the Zuni to remember and affirm that they named features on the landscape long before Europeans did. The San Francisco Peaks near Flagstaff, Arizona, for example, have been known to Zunis as Sunha:kwin K'yabachu Yalanne for thousands of years.

I was introduced to the Zuni Map Art Project several years ago, during the early stage of the Reserve Area Archaeological Project in the Gila National Forest in west-central New Mexico. Dr. Michele Koons, curator of archaeology, and I are leading this long-term project, in collaboration with cultural resource and religious specialists from the Pueblo of Zuni, to study the pre-Columbian occupation of a large area centered on the small town of Reserve.

Reserve is the seat of Catron County, New Mexico, and has a population of fewer than 500 people. Catron County is 7,000 square miles, yet has only 3,500 people. Zuni ancestors who inhabited the region from about 300 to 1300 CE are known to archaeologists as the Mogollon. Last summer, the project team excavated the Torriette Lakes Great Kiva, an isolated ceremonial structure in a beautiful, verdant valley at 7,500 feet.

As I became familiar with dozens of pieces of Zuni Map Art, it occurred to me something was missing. We contacted Ronnie Cachini, a well-known Zuni artist and the most prominent Zuni religious leader, and he readily agreed to paint the Reserve area. Ronnie knew the area because he had been elk and turkey hunting there for decades. Less known to him was the significant archaeological record, including spectacular rock art panels, cave sites, and Great Kivas. In 2017 and 2018 we toured the area with Ronnie, sharing insights along the way. He went home and produced a wonderful piece for the Museum.

The top of the painting has iconographic representations of the moon, the sun, the Milky Way, and a supernova. In the middle is a cluster of four archaeological sites, all set against the sacred Eagle Peak. The sites are, clockwise beginning upper left, Tularosa Rock Art Panel, which includes some of the finest

knife-wing figures (a.k.a. thunderbirds) Ronnie has seen and a series of symbols that help tell the Zuni origin story; a small, unnamed cliff dwelling, one of the few such sites in the region; the Toriette Lakes Great Kiva that the Museum team recently excavated; and Tularosa Cave, a dry cave excavated by the Field Museum in 1950.

When I first saw Ronnie's beautiful work, I said, "Oh, no, it's oriented incorrectly! Tularosa Cave should be in the northeast, at the top right of the painting! You've got it at the lower left!" Ronnie calmly dealt with my panicked ignorance and pointed out that he put Zuni Pueblo, his home, at the bottom of the painting, which is oriented as if you are looking south from Zuni. I had made a simple assumption—that north is always at the top of maps, and this simply does not hold up across cultures.

Thanks to Ronnie's talent, the Museum now has a piece of Zuni Map Art representing a region we hope to work in for years to come and that is meaningful in Zuni cosmology and history. It will be installed in the Crane Hall of North American Indian Cultures in the coming months.

DISCOVER MORE

Dr. Steve Nash is chair and curator of archaeology in the Department of Anthropology. Find out more at www.dmns.org/nashlab.

Below: Ronnie Cachini, a Zuni artist and prominent religious leader, painting the Zuni Map Art.



K-T ROCKS: SLICES OF HISTORY

BY JAMES HAGADORN, TYLER LYSON, AND IAN MILLER, PhDs

For over a century, Coloradans have been at the epicenter of unraveling one of science's biggest mysteries—the cause and effect of the last great extinction in the history of life.

This event, called the Cretaceous-Tertiary extinction, or K-T for short, radically changed the course of life on Earth. At that moment, 66 million years ago, our planet's biological light switch flipped from the Age of Dinosaurs to the Age of Mammals.

The first place this event was documented in North America was right in our backyard. Back in the early 1940s, Roland Brown, of the U.S. Geological Survey, found *Triceratops* remains at the base of South Table Mountain. Surprisingly, the rocks near the top contained fossil mammal jaws and not a hint of dinosaurs. This led him to hypothesize that somewhere in that hillside lay the boundary between the Cretaceous and Tertiary Periods, the K-T boundary. He was right, and it's still there for all to see.

Flash forward to 1980, when a team of geologists proposed the radical but compelling hypothesis that Earth had been catastrophically blasted by an asteroid as wide as Denver. This idea differed significantly from previous ideas about the demise of the dinosaurs and spurred intense debate about the cause and tempo of the extinction. Scientists at our Museum and across the world have been digging into the fossil record and publishing research that tests this hypothesis.

As researchers probed fossil evidence, Glen Izett, of the U.S. Geological Survey in Lakewood, was busy identifying physical evidence surrounding the K-T boundary event. Izett traveled the world for more than 30 years, collecting hundreds of samples of the strata that contained the K-T event. From impact-caused tsunami deposits in Cuba and Haiti to ash-fall layers in faraway Canada and Denmark, Izett scoured the planet for evidence of the K-T's destruction. He often embedded the rocks he collected in epoxy and sliced a layer off like a piece of petrified cake. Izett's rare collection was recently donated to the Museum.

In these samples, Izett identified the minerals, chemistry, and physical features left behind by each site's environment. By documenting the size of shattered quartz grains and catastrophically melted impact-rock fragments, he helped constrain the halo of debris surrounding the yet-to-be identified impact site. Today we know the impact crater lies under the Yucatan Peninsula in southern Mexico. The evidence in Izett's K-T samples not only confirm it, but provide an accessible opportunity for other geologists to visit dozens of K-T sites in one day, by seeing the samples in the Museum's Avenir Collections Center and doing "fieldwork in a drawer."

The Museum's paleontologists are also actively collecting and studying specimens that help tell the story of the K-T boundary. Dr. Ian Miller, chair of the Earth Sciences Department, is taking paleobotanical investigations of the K-T in new directions. He has documented changes in forest ecology and landscapes through this interval. His fellow curators, Drs. Joe Sertich, Tyler Lyson, and Dave Krause, have documented the faunas from the fossil record, from megabeasts to miniature creatures. Thus far their evidence suggests ecosystems were healthy right up to the moment they were wiped out en masse, in line with an abrupt extinction caused by a catastrophic asteroid impact at the K-T boundary.

And how were there survivors? Turns out the answer may be in their genes. Tying together DNA, lifestyle, habitat, and fossil data, Lyson and research associates Daniel Field and Antoine Bercovici recently showed that flightless birds proved to be better survivors than those that lived in Colorado's Cretaceous forest canopies. A fortunate circumstance to be sure, because these ground-dwelling survivors led to about 10,000 species of modern birds, including those we serve up at Thanksgiving!





The blocks of K-T rock, the dinosaurs, the bugs, and the leaves they munched on are all housed 50 feet underground in the Avenir Collections Center, where they're being actively studied and where they'll undoubtedly yield new data for future generations of scientists. Our team continues to grow these collections through targeted fieldwork and as our community donates specimens and whole collections to the Museum. Who knows, these specimens may hold the next major clue to the K-T mystery!

DISCOVER MORE

Drs. James Hagadorn, Tyler Lyson, and Ian Miller are curators in the Department of Earth Sciences. Find out more at dmns.org/science.

The Glen Izett collection at the Museum contains more than 350 samples of strata from around the world that contain evidence of the K-T event. The locales represented above, clockwise from upper left, are Clear Creek, Colorado, EGR.1181 and EGR.1255; Denmark, EGR.1284; Cuba, EGR.1007; Wyoming, EGR.1333; and Mexico, EGR.1136. Center, from left: Wyoming, EGR.1331; and Clear Creek, Colorado, EGR.1256. Specimens are 8 to 20 cm long.



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UPGRADE TODAY AND RECEIVE FREE TICKETS FOR *LEONARDO DA VINCI*

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) to redeem for yourself or friends and family. Attend popular programs such as Science Lounge, select evening lectures, IMAX, Planetarium, or simply Museum admission. You may also use these tickets to receive free admission to *Leonardo da Vinci: 500 Years of Genius*, opening in March! Use your Flex Tickets to design your benefits based on your personal interests.
- First access to summer camp registration. Upgrade now and be the very first (before general members) to sign up in January 2019 for the Museum's incredibly popular summer camps!
- Invitations to special events throughout the year, including the popular Behind-the-Scenes Night and IMAX Night, just for Giving Club 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 to start enjoying additional benefits right away. Or find out more at dmns.org/givingclub.



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THE FUTURE IS NOW

Since its founding, vital community and individual support has allowed the Museum to grow into a thriving institution. By planning now for the future, you have the opportunity to ensure that the Museum's mission endures for generations to come. There are many options for creating a planned gift that will meet your needs while supporting the Museum. Find downloadable brochures and a free Estate Planning Kit or evaluate your current plan at dmns.planmylegacy.org

FUEL YOUR MUSEUM

Support the artifacts, exhibitions, and experiences you love by donating your used car, boat, motorcycle, truck, or RV to the Museum. Find out more at dmns.org/give/vehicle-donation.

MAKE A MATCH

As you consider your end-of-year giving, keep in mind that your employer may be one of 10,000 companies that match employee donations to nonprofits such as the Museum. Memberships qualify for matching too! Find out more at dmns.org/give/matching-gifts or see your employer's personnel office for more information.

A LASTING IMPACT: COLORADO GIVES DAY 2018

It's not often that \$100 can impact the lives of 40 people, but it's possible during Colorado Gives Day on Tuesday, December 4!

Become part of a statewide movement and join thousands of Coloradans during this annual day devoted to making a difference. All gifts to the Denver Museum of Nature & Science on Colorado Gives Day will fund the scholarship pool for schools and organized youth groups, reducing the cost of enhancing the Museum field trip experience for 90,000 children annually. In addition, gifts made on Colorado Gives Day get a boost from the \$1 million Incentive Fund, created by Community First Foundation and First Bank.

Since 2014, more than \$153,000 has been raised for the Museum on Colorado Gives Day. The average gift is \$50, which would allow 20 students to enjoy a classroom program, temporary exhibition, or IMAX or Planetarium show during their field trip. A gift of \$500 means 18 kids can spend an unforgettable night sleeping in our world-famous wildlife halls.

Gifts of every size make an impact! Schedule your gift today at coloradogives.org/dmns and help create a vibrant future for Colorado. Thank you for your support.



REWARD YOUR EMPLOYEES AND SUPPORT SCIENCE EDUCATION

Imagine how happy your employees and their families will be as they spend time together experiencing wonder and discovery at the Museum! When your business becomes a corporate member, your employees and their families will enjoy Museum admission, events, discounts, and more. At the same time, your organization will impact the community by supporting education for the workforce of the future.

All corporate memberships include:

- General admission passes and IMAX and Planetarium tickets.
- Discounts on personal memberships for your employees and their families.
- Recognition for your business in the Denver Business Journal and on the Museum's donor wall and website.
- Opportunities to go behind the scenes at exclusive members-only evening events.

Plus, your employees will thank you! 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.

Get all the details at dmns.org/corporatemembership or email corporatemembers@dmns.org.



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iCUBA!

GENES AND GRAINS: THE NEWEST GENETICS OF TASTE STUDY

BY JACLYN MCILWAIN AND NICOLE GARNEAU, PhD

Whether you're seated at a restaurant or roaming the aisles of the grocery store, what are you looking for? For some it's a good bargain; for others it's what is healthiest. Survey results overwhelmingly indicate that most of us are focused on one thing: what tastes good to us, the number-one reason for selecting the foods we enjoy.

Not surprisingly, this has consequences. A great example is whole wheat. Whole grains have higher fiber, minerals, vitamins, and antioxidants that promote healthier cardiovascular and digestive systems. They increase satiety and decrease the body's glycemic response, particularly in individuals with Type II diabetes. Despite all the benefits, some people don't eat whole wheat because they just plain don't like the taste. These folks report that whole grain foods have a bitter or strong flavor, so they typically won't choose them when the alternative is products with refined white flour. The Genetics of Taste Lab at the Museum wants to find out why.

The new Genes and Grains study is designed to more fully understand just why it is that some people think whole wheat tastes bad. We think it has something to do with DNA. The study will explore how relationships between wheat taste, wheat genetics, and human genetics might be at the core of the issue. Our amazing partners are the Western Wheat Quality Lab at Colorado State University, with support from researchers at the USDA. These folks are specifically helping us focus on the role of wheat genetics in the taste perception of different strains of whole wheat. Because flavor is a key factor in consumer acceptance of whole grain products, we hope that understanding why some people think the taste

is off-putting will lead to ways to make whole wheat taste better and sneak it into foods people already enjoy. The findings could have a huge impact on both individual and societal health.

Once again, you are the science! You and your family and friends are invited to be a part of this research. Individuals must be at least 8 years old, with a legal guardian if age 8–17. The 30-minute experience is administered by a volunteer community scientist and includes informed consent, sampling a series of whole wheat wafers, a buccal swab for cell (DNA) collection, and a few questions. You will learn more about yourself and how you taste things differently than your friends and family, and depart with a personalized lab notebook detailing how you are participating in real science.

Every year, the Taste Lab conducts a different taste study. Genes and Grains is the sixth study to be completed by community scientists and members of the public. Results from previous studies have provided evidence against the theory of supertasting, showed there is a heredity component to tasting fat, and led to the creation of new scientific methodology for studying taste. The team is currently analyzing data from the Science of Sour study and the Savory and Sour study.

Genes and Grains will receive participants through August 2019. We look forward to seeing you in the Taste Lab!

DISCOVER MORE

Jaclyn McIlwain was research assistant in the Genetics of Taste Lab during summer 2018, and Dr. Nicole Garneau is curator and chair of the Department of Health Sciences and principal investigator for the NIH SEPA grant.

Participating in the science in the Genetics of Taste Lab is free with general admission and available first-come, first-served. To schedule an appointment, email genetics@dmns.org. Spanish-speaking lab assistants are available; please mention this when scheduling the appointment.

For more information on previous studies and discoveries, visit the display outside the Taste Lab or dmns.org/genetics.

This project is made possible by a Science Education Partnership Award from the National Institute of General Medical Sciences, National Institutes of Health (Award #R25OD021909).



Your DNA is like a cookbook for your body. Find out how when you participate in the new research study in the Genetics of Taste Lab.

LEONARDO DA VINCI

500 YEARS OF GENIUS

EXCLUSIVE MEMBERS-ONLY EVENTS

Inventor, artist, scientist, anatomist, engineer, architect, sculptor, philosopher. Although Leonardo da Vinci died in 1519, his influence has endured. His extraordinary legacy comes to life in the new exhibition *Leonardo da Vinci: 500 Years of Genius*, presented in Denver by the Sturm Family Foundation.

RESERVATIONS OPEN ON MONDAY, JANUARY 14.

MEMBERS-ONLY PREVIEW DAY

Thursday, February 28 • 9 a.m.–9 p.m.

See it before it opens to the public!
Members pricing for timed tickets is \$7.95 adult, \$6.95 senior, \$4.95 child/junior.

MEMBERS-ONLY EVENING

Wednesday, March 6 • 6–9 p.m.

Members pricing for timed tickets is \$7.95 adult, \$6.95 senior, \$4.95 child/junior. An optional prepurchased dinner is available for an additional \$14 adult, junior, senior member; \$9 child.

MEMBERS-ONLY EVENING FOR 21+

Tuesday, April 2 • 6–9 p.m.

\$50 member, \$60 nonmember (includes timed ticket)
In addition to an adults-only evening in the exhibition, enjoy hors d'oeuvres and a cash bar followed by dinner.

Reservations required for all events at 303.370.6306 (daily, 9–5) or dmns.org/memberevents.

No walk-up tickets will be available; events subject to selling out. Exhibition entry by timed ticket due to gallery capacity. Only *Leonardo da Vinci* will be open on Members Evenings; the rest of the Museum will be closed.

GET THE MOST FROM YOUR MEMBERSHIP

- Visit anytime for free 364 days a year!
- Make sure your eCard is up to date with our latest version, 3.2.2, or download your free eCard if you haven't yet. Please note this app is no longer available for phones using Windows. Find out more at dmns.org/ecard.
- Read the monthly eNews with members-only news, tips, and special offers. Not receiving eNews or advance notifications? Send your email address to members@dmns.org.
- Add another adult to your membership for just \$50. This is a great option for nannies and grandparents, and the add-on member enjoys many benefits! Not valid on Individual level memberships.
- Visit 360 science centers and museums using your free admission through the ASTC Passport Program. Free admission begins outside a 90-mile radius of Denver and your residence. Find out more @ astc.org/passport.

FREE GIFT WITH AUTO RENEW

Enjoy the convenience of having your membership automatically renewed! With Auto Renew, you receive uninterrupted Museum access and benefits while saving time and resources. Enroll today and get a free gift: a reusable, collapsible water bottle. It's now easier than ever to enroll in Auto Renew online at dmns.org/renew or by phone at 303.370.6306 (daily, 9–5). Your expiration date is printed on this magazine's mail label. Easy for you, good for the environment!

WE'RE HERE FOR YOU

- 303.370.6306 (daily, 9–5)
- members@dmns.org
- www.dmns.org/members
- Members Lane at Ticketing

THANK YOU FOR YOUR SUPPORT!

Your membership helps us provide outstanding science education programs, exhibitions, and research.



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A GIFT THAT LASTS ALL YEAR

Give everyone on your list—family, friends, neighbors, and colleagues—a FULL YEAR of fun and discovery with a gift certificate for a Museum membership!

It's easy! Log in at dmns.org and choose Gift Certificate. After purchasing, simply print the attached certificate that is emailed to you or forward it directly to the recipient. Once the certificate is redeemed, the membership will be active for one year.

THIS IS JUST SOME OF WHAT THEY'LL GET:

- Free admission to the Museum 364 days a year. Members may drop by for an hour or stay all day.
- Discounts in the Museum Shops, T-Rex Cafe, Grab & Go, and Coffee Lab.
- Discounts on surcharged temporary exhibitions, including *Leonardo da Vinci: 500 Years of Genius*, coming in 2019.
- Discounts on educational programs for all ages and early access to our very popular Summer Day Camps.
- Invitations to exclusive events, such as Members Preview Day for temporary exhibitions.
- Free or reduced admission to more than 360 science centers and museums worldwide.

Your purchase directly supports science education and research at the Museum. Thank you!

DISCOVER

ADULTS | CHILDREN | FAMILIES | TEENS

WINTER 2018





DECEMBER

The Science Lounge is on holiday. See you in 2019!

JANUARY 17: FROZEN

Behold the power of cold with liquid nitrogen demos. Chill out with arctic animals from the Museum's collections, keep it cool with ice science, build a snowman, and "let it go" with the signature cocktail of the night, the Elsa.

FEBRUARY 21: SUGAR, SUGAR

Bring your sweetie and prepare your taste buds for some sweet, sweet science! Experiment with some of your favorite candy and learn how sugars affect the human body. From sucrose to glucose, this is one sweet night worth bouncing off the walls for.

BUY TICKETS AT DMNS.ORG/SCIENCELOUNGE
\$13 MUSEUM MEMBER, \$15 NONMEMBER

MEDIA SPONSOR

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MAGAZINE

WINTER 2018

EXHIBITIONS

Mindbender Mansion

Now open through January 6 • Anschutz Gallery • Free for members
Enter *Mindbender Mansion*, a quirky place full of puzzles, brainteasers, and interactive challenges that put minds of all ages to the test.

¡Cuba!

Now open through January 20 • Phipps Gallery • Free for members
In this lively exhibition, discover abundant biodiversity, cultural traditions, and daily life on the Caribbean’s largest island.

Leonardo da Vinci: 500 Years of Genius

Opens March 1 • Phipps Gallery
Inventor, artist, scientist, anatomist, engineer, architect. Although Leonardo da Vinci died in 1519, his influence has endured and comes to life through replicas of his inventions, multimedia experiences, and an exhibit revealing the wonder of the *Mona Lisa*.

PHIPPS IMAX 3D THEATER • Now showing

Cuba 2D
Oceans: Our Blue Planet 3D
Pandas 3D
Hollywood Favorites • Check dmns.org/imax

GATES PLANETARIUM • Now showing

Black Holes: The Other Side of Infinity
Cosmic Journey
Destination Solar System
One World, One Sky: Big Bird’s Adventure
Passport to the Universe
Space Tours Live


ADMISSION

	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. Closed December 25.
Dates, times, prices, and schedules subject to change. Find more ways to discover @ dmns.org.

On the cover: Crystallized gypsum (selenite), EGM.13233.

DECEMBER

SUN	MON	TUE	WED	THU	FRI	SAT
Discover more @ dmns.org						1
	Cruisin' the Fossil Coastline, p.1		Oceans 3D with TNC, p.1	Museum's 118th birthday		Getting Chilly for families, p.11
2	3	4	5	6	7	8
SCFD Community Free Day  Digital Earth, p.1				Bird Walk, p.10		
9	10	11	12	13	14	15
					Winter solstice	
16	17	18	19	20	21	22
23	24	Winter Break Camp				
		Museum closed			Teens Behind the Scenes, p.12	
30	31	25	26	27	28	29

JANUARY

SUN	MON	TUE	WED	THU	FRI	SAT
			Winter Break Camp			
		Happy new year! Museum open				
		1	2	3	4	5
Mindbender Mansion closes	SCFD Community Free Day 		Indigenous Film, p.2			Dissection Connections, p.11
6	7	8	9	10	11	12
		John Fielder, p.6	Archaeology of Slavery, p.6	Science Lounge, inside cover Bird Walk, p.10		
13	14	15	16	17	18	19
Dinner and Movie for families, p.11 ¡CUBA! closes		Visualizing Space, p.6			Teen Lounge, p.12	
20	21	22	23	24	25	26
SCFD Community Free Day 	General Arachnology, p.8		60 Minutes in Space, p.7			
27	28	29	30	31		

FEBRUARY

SUN	MON	TUE	WED	THU	FRI	SAT
						Critter Celebration, p.11
					1	2
		Meet Meriwether Lewis, p.7	Expedition with Lewis, p.7 Intro to Birding, p.8			
3	4	5	6	7	8	9
	SCFD Community Free Day  OUTDOOR AIRING IF POSSIBLE	Grassland Grouse, p.7	Indigenous Film, p.2 Bird Walk, p.10	Sex in the Sea, p.7		
10	11	12	13	14	15	16
Stay up with the Stars, p.11 Junior Surgeons, p.12				Science Lounge, inside cover		
17	18	19	20	21	22	23
			60 Minutes in Space	Leonardo da Vinci Members Preview Day		
24	25	26	27	28		

AfterHOURS

AT THE DENVER MUSEUM OF NATURE & SCIENCE

Cruisin' the Fossil Coastline with Kirk Johnson

At the Smithsonian National Museum of Natural History, Dr. Kirk Johnson oversees the largest natural history collection in the world. But before he went to D.C., in 2012, Johnson was one of our own here at the Museum for 21 years. Johnson returns to share his newest book with Ray Troll, *Cruisin' the Fossil Coastline: The Travels of an Artist and a Scientist along the Shores of the Prehistoric Pacific*. Johnson and Troll are back on the road—driving, flying, and boating their way from Baja, California, to northern Alaska in search of the fossil secrets of North America's Pacific Coast. As one of the oldest coasts on Earth, it is rich ground for fossil discovery, with extinct marine mammals, pygmy mammoths, oyster bears, shark-bitten camels, polar dinosaurs, California walruses, and a lava-baked rhinoceros. Join us for a lively evening with Johnson as he takes you on a fossil journey through deep time and shows how the West Coast became the place it is today.

Monday, December 3 • 7 p.m. • Phipps Theater • \$8 member, \$10 nonmember

Oceans: Our Blue Planet 3D

Explore the largest, most mysterious habitat on Earth in *Oceans: Our Blue Planet 3D*. New technology has allowed scientists to discover a richer diversity in the ocean than ever imagined. Leaping dolphins greet you as you dive into the blue and meet sea otters feeding on purple urchins, an ingenious tusk fish living in a coral reef, and the elusive dumbo octopus (pictured right). After the film, Dr. Stephanie



Wear, marine ecologist and conservation strategy advisor for The Nature Conservancy (TNC), will discuss efforts to protect ocean ecosystems. Coffee and dessert follow. Presented in partnership with TNC of Colorado.

Wednesday, December 5 • 7 p.m. • Phipps Theater • \$12 Museum or TNC member, \$15 nonmember

Digital Earth: Cuba

Travel to Cuba with the help of immersive satellite images projected onto the full dome of Gates Planetarium. Geologist Dr. Bob Reynolds and space science curator Dr. Ka Chun Yu will guide you across the largest island nation in the Caribbean, from the capital city of Havana to the historic city of Santiago de Cuba. Guest presenter and cultural anthropologist Dr. Kaifa Roland will discuss her extensive fieldwork in Cuba and the global processes that have shaped cultural practices in Cuba.

Monday, December 10 • 7 p.m. • Gates Planetarium • \$8 member, \$10 nonmember

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. Concessions available for purchase. No program in December.

Wednesdays, January 9, February 13 • 6:30 p.m. • Phipps Theater • free

John Fielder's Colorado: Black on White



See Colorado, from the Great Plains to the Rocky Mountains, fade from color to black and white with photographer John Fielder. Fielder will highlight his new book *Colorado: Black on White*. Witness the edges, shapes, and textures of landscapes and wildlife without the distraction of color as you hear Fielder's stories of life on the trail set to beautiful music.

Tuesday, January 15 • 7 p.m. • Phipps Theater • \$15 member, \$18 nonmember • book sale & signing

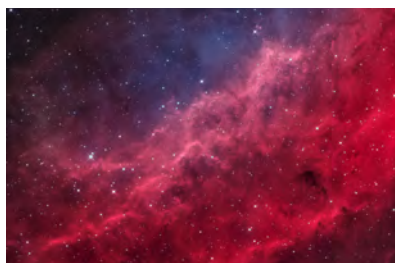
Biennial George McJunkin Lecture: The Archaeology of Slavery

Dr. Theresa Singleton, professor of anthropology at Syracuse University, will explore what the science of archaeology has revealed about the lives of enslaved peoples, both in the southern United States and the Caribbean. Archaeologists have conducted studies of plantation slavery for more than a half century. Singleton will discuss the findings uncovered from 18th and 19th century slave settlements that provide information on the living conditions and cultural practices of enslaved peoples. Throughout the Americas, enslaved people experienced a similar fate, but regional distinctions are becoming increasingly apparent. The biennial George McJunkin Lecture, is named in honor of the former slave, cowboy, and aspiring archaeologist who helped discover the Folsom Site, one of the most important archaeological finds of the 20th century.

Wednesday, January 16 • 7 p.m. • Phipps Theater • \$8 member, \$10 nonmember

Visualizing Space: Science and the Artistic Process

Images of celestial phenomena from telescopes on the ground and out in space have amazed audiences for decades. They intrigue us with stunning details of distant nebulae and galaxies, revealing objects that are beautiful as well as alien. Yet despite their scientific value, such images rarely represent what these wonders would actually look like if we were transported into the depths of space to see them in person. Join Dr. Ka Chun Yu, curator of space science, to learn how considerable creativity and artistic talent is necessary to represent an astronomical reality that is not only scientifically meaningful, but also *feels* subjectively right. Presented in partnership with Museo del las Americas.



Tuesday, January 22 • 7 p.m. • Phipps Theater • \$8 Museum or Museo 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. No program in December.

Wednesdays, January 30, February 27 • 7 p.m. • Ricketson Auditorium • free

Meet Meriwether Lewis

Enactor Brian “Fox” Ellis brings Meriwether Lewis to life with stories drawn from the journals of Lewis and Clark. Hear Lewis’s tales from the historic 1804 expedition, encountering grizzly bears, meeting American Indians, and cataloging animals and plants that were new to scientists of the time. Before and after the program, a telescope from the Museum collections that belonged to William Clark will be displayed. Don’t miss this unique opportunity!

Tuesday, February 5 • 6 or 8 p.m. • Ricketson Auditorium. • adult: \$15 member, \$18 adult nonmember • junior: \$10 member, \$13 nonmember



An Expedition with Meriwether Lewis

Trace the steps of the Lewis and Clark Expedition with none other than Meriwether Lewis himself. Brought to life by enactor Brian “Fox” Ellis, Lewis will lead you on this unique tour through the wildlife diorama halls. Hear tales from the historic journey through America in a small group setting.

Wednesday, February 6 • 7:30 a.m. • Wildlife Halls • \$27 member, \$33 nonmember

Save the Last Dance: A Story of North American Grassland Grouse

Award-winning photographer Noppadol Paothong is striving to rescue grassland grouse from the brink of extinction by showing the world what it stands to lose if these species are allowed to disappear forever. His book, *Save the Last Dance: A Story of North American Grassland Grouse*, captures the dazzling beauty of seven grouse species whose populations are diminishing across the prairies and plains of America—and one species that has already lost its battle for survival. The book also shares the conservation efforts underway to save these species. Presented in partnership with Bird Conservancy of the Rockies with promotional support from Audubon Society of Greater Denver and Audubon Rockies.

Tuesday, February 12 • 7 p.m. • Phipps Theater • \$12 Museum, Bird Conservancy of the Rockies, or Audubon member, \$15 nonmember • Book sale & signing

Sex in the Sea

Take a dip into the deep end and explore the love lives of aquatic animals for Valentine’s Day! Enjoy ocean-themed appetizers, and see coral, shells, and marine animals from the zoology collections. Dr. Marah Hardt will uniquely connect the sustainability of the oceans with the inventive sex acts of marine life, as she shares stories of elaborate mating rituals of armored lobsters, giant right whales engaging in lively threesomes, and full moon sex parties of groupers. Hardt is the author of the book *Sex in the Sea*.

Thursday, February 14 • 6:30 p.m. • \$20 member, \$25 nonmember • Cash bar • Book sale & signing • Ages 21+

Digital Earth: Beer

Take a global journey about beer with your guides geologist Dr. Bob Raynolds and space science curator Dr. Ka Chun Yu and guest presenter Travis Rupp, instructor of classics at the University of Colorado Boulder and research and development manager at Avery Brewing Company. Rupp will explore the origins of beer in the ancient Middle East and Egypt, and its journey across the world, using immersive satellite images projected onto the full dome of Gates Planetarium. Sample beers inspired by your travels.

Thursday, March 7 • 6 or 8 p.m. • Gates Planetarium • \$20 member, \$25 nonmember • Ages 21+

COURSES

General Arachnology

Learn the evolutionary history of arachnids, such as scorpions, camel spiders, daddy longlegs, and ticks, the natural history and biology of the different groups, and the medical and economic importance of these animals. Experience a behind-the-scenes look at the wealth of specimens in the zoology collections with Dr. Paula Cushing, curator of invertebrate zoology.

Mondays & Wednesdays, January 28–February 6 • 6:30–8:30 p.m. • \$75 member, \$105 nonmember

Introduction to Birding

Have you ever tried to identify the birds in your backyard or been curious about the popular hobby of bird watching? Let birding expert Norm Lewis help you get started with all the basics. Learn about birding optics, field guides, clothing and gear, basic bird families, and field identification techniques. Then venture into the field to test your new skills and start your very own life list. Includes a copy of *National Geographic Field Guide to the Birds of North America*.

Wednesday & Friday, February 6 & 8 • 6:30–8:30 p.m. • Saturday, February 9 • \$75 member, \$105 nonmember

To Howl or Not to Howl: The Legend, Myth, and Evolution of Wolves and Their Kin

It all started with wolves! Venture into the world of the Canidae family and discover the uniqueness of wolves and their relatives with instructor Dr. Sue Ware. This animal family is found on almost every continent with species including foxes, coyotes, jackals, and dogs. Wolves have shaped the genetic makeup of all domestic dogs, our closest companions who assisted us in the hunt and protected us against danger. Study the evolutionary past of canids and peer into their future.

Mondays & Wednesdays, March 18–27 • 6:30–9:30 p.m. • \$110 member, \$140 nonmember



CANOE TRIPS

Paddle along scenic rivers while gaining new knowledge about geology, wildlife, astronomy, and dinosaurs. Reservations and information: 720.283.0553, CentennialCanoe.com

Archaeology and Western History on the Green River

Museum educator Jennifer Moss Logan shares stories of those who left their mark on the local landscape, from ancient native peoples to the colorful characters whose adventures brought them westward. For both the adventurer and historian at heart.

Wednesday-Sunday, June 12-16 • \$691 adult, \$661 child (6-12 years)

Dinosaurs by Canoe on the Colorado

Experience fascinating rock formations from the age of the dinosaurs, and paddle your way along the Colorado River with educator Samantha Sands as your time-travel guide. Camping along the river's banks and exploring Dominguez Canyon will leave you awed by the immensity of geologic time.

Saturday-Monday, July 13-15 • \$436 adult, \$406 child (6-12 years)



Stargazing on the Colorado

Embark on a memorable weekend with astronomer Naomi Pequette as you revel in both earthbound scenery and the breathtaking skies above. Without the interference of city lights, learn about planets, constellations, and deep space.

Saturday-Monday, July 27-29 • \$436 adult, \$406 child (6-12 years)

Geology and Archaeology by Canoe on the Upper Gunnison

With geologist Bob Raynolds as your guide, marvel at colorful sandstone walls hundreds of feet high and explore canyons and ancient rock art. Canoe down this epic stretch of river, hike and explore the Dominguez Canyon Wilderness Area with waterfalls and petroglyphs, and camp along the river's edge.

Wednesday-Sunday, August 7-11 • \$436 adult, \$406 child (6-12 years)

BIRD WALKS

Explore with expert bird guide Norm Lewis, Zoology Department associate.

Eastern Plains Raptors

Winter can be an exciting time on the eastern plains of Colorado as winter raptors patrol the prairies and waterways for prey. Begin your journey looking for majestic hunters, such as the rough-legged hawk, golden eagle, and the prairie falcon. In the afternoon, travel to Jackson Lake State Park, where long-eared owls winter among the Russian olive thickets.



Thursday, December 13 • 7 a.m.–6 p.m. • \$27 member, \$35 nonmember

Barr Lake State Park

Few destinations in Colorado offer the variety of habitats found at Barr Lake State Park. The large reservoir is surrounded by riparian cottonwood gallery, marshes, brushy woodland, and prairie. In these habitats, look for a wide variety of hawks, bald eagles, American kestrel and prairie falcons, northern harriers, great horned and barn owls, diving and dabbling ducks, grebes, chickadees, goldfinches, woodpeckers, a variety of sparrows, and perhaps a wintering great blue heron.

Thursday, January 17 • 9 a.m.–4 p.m. • \$27 member, \$35 nonmember

Chatfield State Park and the South Platte River

As winter closes in and many lakes freeze over, ducks seek open water along the South Platte River. In the various habitats in Chatfield and South Platte Parks, we should find a variety of birds to match. Along the river are hundreds of wintering ducks, maybe even wood ducks! The woodlands host year-round residents, such as white-breasted nuthatch, downy woodpecker and northern flicker, plus migrants down out of the mountains for the winter, like Townsend's solitaire and ruby-crowned kinglet. Sometimes an American dipper can be found along the river.

Wednesday, February 13 • 9 a.m.–4 p.m. • \$27 member, \$35 nonmember



FAMILIES

Getting Chilly with It • All ages with adult

Chill out this winter with a program so cool, it's cryogenic! Learn about the subzero science of super cold substances like liquid nitrogen, liquid oxygen, and dry ice. See amazing science demonstrations from educator extraordinaire Brian Hostetler followed by hands-on activities in the atrium.

Saturday, December 8 • 10 a.m.-noon • member: \$12 adult, \$8 junior • nonmember: \$15 adult, \$10 junior

Dissection Connections • 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 your amazing body systems.

Saturday, January 12 • 10 a.m.-2 p.m. • \$40 member pair, \$50 nonmember pair

Dinner and a Movie: Oceans 3D • Grades K–12 with adult

Dive into the science of the ocean! After dinner, make your own deep-sea creature and immerse yourself in an after-hours screening of the IMAX film *Oceans: Our Blue Planet 3D*.

Sunday, January 20 • 6–9 p.m. • adult: \$20 member, \$25 nonmember • junior: \$15 member, \$20 nonmember



Groundhog Day! Critter Celebration! • Grades K–8 with adult

Dig this! Punxsutawney Phil is on the loose, but what do we really know about these adorable critters and their relatives? Join Museum scientist John Demboski as he debunks the myths and unburrows the mysteries of the groundhog. Afterward, head to the Denver Zoo with us to see even more animals!

Saturday, February 2 • 10 a.m.-2 p.m. • adult: \$20 member, \$25 nonmember • junior: \$15 member, \$20 nonmember

Stay up with the Stars • All ages

Stay up late with us as all the stargazers in the family explore the incredible Colorado night sky. After a dinner at the Museum, watch planetarium shows, see your favorite constellations through high power telescopes (weather permitting), warm up with a hot chocolate bar, and make your own star-studded crafts. This program is perfect for aspiring young astronomers and their family members alike!

Sunday, February 17 • 6–8 p.m. • adult: \$20 member, \$25 nonmember • junior: \$15 member, \$20 nonmember

Family Overnight: Spring into Science! • Grades K–8 with adult

Spend a memorable night experiencing the magic of springtime in Colorado with your whole family! After dinner, take a dino egg hunt through the Museum, make your own plant to grow at home, watch a Planetarium show, and experiment, explore, and engage in hands-on fun for everyone. Then sleep among the animals in our renowned wildlife diorama halls. Wake up to breakfast and an IMAX screening.

Friday-Saturday, March 8–9 • 6 p.m.-10 a.m. • adult: \$65 member, \$80 nonmember • junior: \$55 member, \$70 nonmember

CHILDREN'S WORKSHOPS

Junior Surgeons • Grades 2 & 3 / Cutting Edge • Grades 4–6

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

Sunday, February 17 • 9 a.m.–3 p.m. • \$60 junior member, \$70 child/junior nonmember



TEENS

Teen Nights • Ages 13–18

These totally free events let teens rule the Museum after hours. Teens Behind the Scenes invites you to see the Museum in a new light during special tours, and Teen Lounge is an evening designed by teens for teens. Supported by Lincoln Hills Cares.

Teens Behind the Scenes: Friday, December 28 • 6–8 p.m. • Spots limited

Teen Lounge: Friday, January 25 • 7–10 p.m.

SCHOOL BREAK CAMPS • GRADES K–6

Looking for something amazing for your kids to do during school breaks? At the Museum, your child will experience fun and wonder, see IMAX films and planetarium shows, and explore the marvels of our temporary exhibitions. Different activities each week. Limited early morning drop-off and late pickup options available.

Winter Break

Wednesday–Friday, December 26–28 • Wednesday–Friday, January 2–4 • 9 a.m.–3:30 p.m. • \$160 member, \$175 nonmember • early or late care, \$30/week for each

Spring Break

Monday–Friday, March 18–22 or March 25–29 • 9 a.m.–3:30 p.m. • \$260 member, \$290 nonmember • early or late care, \$45/week for each

Reservations and general information: 303.370.6000, daily, 9 a.m.–5 p.m., or dmns.org

Print-at-home tickets are available at dmns.org for exhibitions, IMAX and Planetarium shows, and lectures and programs, and there's no handling fee! Please always bring your membership card and photo ID when you visit the Museum.

You will receive a confirmation email for your program, field trip, course, or workshop with further information about your event.

Sales are final on all tickets unless the Museum cancels the event.

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

COFFEE LAB — LEVEL 2
9 a.m.—3 p.m.

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NATURE & SCIENCE

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