

DENVER MUSEUM OF NATURE & SCIENCE



GRATITUDE REPORT





# Leading the Community



## MISSION

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**Be a catalyst!** Ignite our community's passion for nature and science.



## VISION

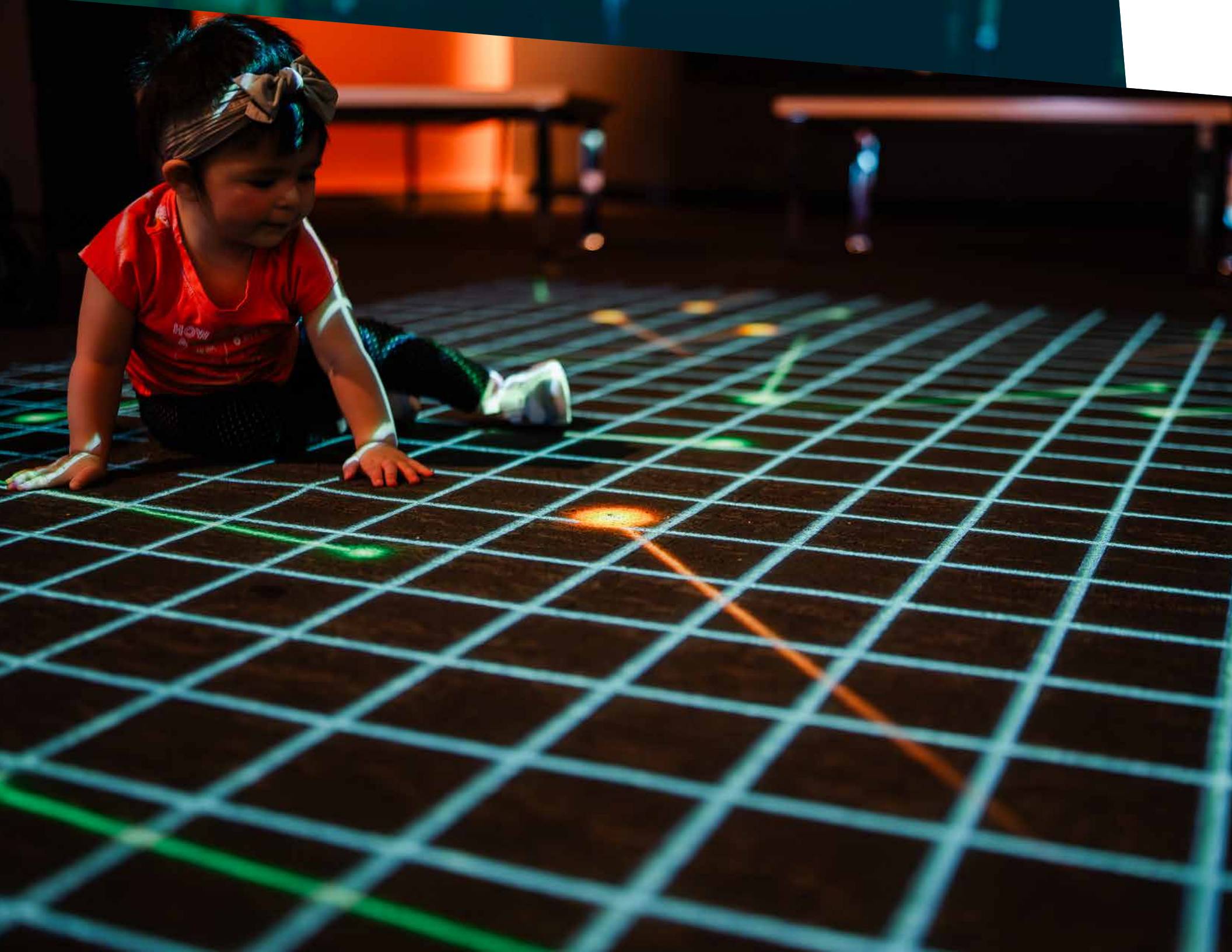
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The Denver Museum of Nature & Science envisions an empowered community that loves, understands, and protects our natural world.

# Table of Contents

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Letter From the President & Board Chair .....	7
2023 Year in Review .....	8
The Treasurer’s Report .....	10
Leading the Way in Scientific Discovery .....	13
Driving Curiosity, Engaging Communities .....	14
Charting a New Path Forward on Science & Policy .....	17
Nature Play: An Urban Gateway to Colorado’s Wilderness .....	18
Leading in Excellence: Inspiring Our Community Through World-Class Exhibitions .....	21
2023 Board of Trustees .....	22
Edwin Carter Legacy Society .....	24
Endowments .....	25
Collections Donors .....	26
Individual Donors .....	28
Organization Donors .....	30
Nature Play Donors .....	32
2023 Scientific Publications .....	34
SCFD Acknowledgment .....	38



# Letter From the President & Board Chair

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Dear Friends and Supporters,

We are delighted to present the Denver Museum of Nature & Science's 2023 Gratitude Report. This past year, 2023, has been another one of great success for the Museum. In reflecting on the 12 months, it is with immense pride and gratitude that we share with you the remarkable achievements and milestones we have reached together.

Here are a few of the historic milestones that the Denver Museum of Nature & Science celebrated over the course of the past 12 months:

- After years of talking to thousands of community members and careful study and deliberation, we broke ground on the transformative four-acre Nature Play installation, located just outside the Museum in City Park. The project is moving forward on time and is slated to open in late 2024.
- The Museum remains deeply committed to scientific research. This year we received our largest federal research grant ever — \$1.3 million — to study how life rebounded after the mass extinction event 66 million years ago that wiped out the dinosaurs.
- We were also honored with the “Best Host Organization” award by the Traveling Exhibits Community, recognizing the Museum for its excellence, exceptional design and pioneering innovation in museum traveling exhibitions.
- The Museum’s Institute for Science & Policy secured a \$100,000 grant, paving the way for the creation of an innovative Colorado science policy fellowship to connect scientists with state legislators.

Another significant achievement in 2023 was the increase in the number of people we served. More than 2,400,000 individuals engaged with our exhibits, programs and educational initiatives this past year, marking a remarkable 37% increase over 2022. Our onsite and offsite programs both experienced substantial growth, with onsite visitation reaching more than 1,300,000 individuals, a 13% increase from the previous year, and offsite engagement soaring by an impressive 80%, reaching nearly 1,170,000 people out in our communities across the Front Range.

These numbers underscore the profound impact of our efforts to expand access to science education and experiences beyond the walls of our Museum, reaching diverse audiences and communities across Colorado and beyond. This growth and recognition are a testament to the unwavering support and dedication of our community – whose enthusiasm and passion continue to drive our success – and our positive impact in our communities and beyond.

As we venture into 2024, we are deeply grateful for your continued support and generosity that ensures our Museum’s work in service of the community extends far into a bright and hopeful future that we all share together.

With gratitude,



**George Sparks**  
President & CEO

A handwritten signature of George Sparks in cursive.



**Steve McConahey**  
Board Chair

A handwritten signature of Steve McConahey in cursive.

# 2023 YEAR IN REVIEW

# 2,473,496

## Total People Served

# ANNUAL Increase 37%

ONSITE ↑ 13% OFFSITE ↑ 80% VIRTUALLY

1,305,696 1,167,800 624,280

# 203,401

STUDENTS & EDUCATORS SERVED

# \$259,232

DONOR-FUNDED SCHOLARSHIPS PROVIDED

# 5 TEMPORARY EXHIBITS

# 625,964 VISITORS



# CURIOSITY CRUISER

# 20,104 CONNECTIONS

21 CITIES 50 EVENTS



# SCIENTISTS IN ACTION

15,046 STUDENT PARTICIPANTS

673 CLASS-ROOMS 26 STATES Canada & Mexico



## CREATIVE TECH

785 <sup>new</sup> YouTube Subscribers 5.4 MILLION YouTube Views

35,800 HOURS OF Programming Watched

THE INSTITUTE FOR SCIENCE & POLICY

17,700 PODCAST DOWNLOADS

1 CONVENING 9 WEBINARS

## MEMBERSHIP

50,415 Member Households Served

## VOLUNTEERS

900 ACTIVE VOLUNTEERS

104,638 HOURS CONTRIBUTED

## SCIENCE DIVISION

112 OUTGOING Collections Loans 5,253 OBJECTS

37 EXCURSIONS over 246 Days

35 INTERNS 20 Teen Science Scholars MENTORED

37 PEER REVIEWED journal articles, books, and book chapters

606 EXPERIENCES DELIVERED reaching 44,175 People





# The Treasurer's Report

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The Denver Museum of Nature & Science is pleased to have ended 2023 continuing to recover from the COVID-19 pandemic. The Museum achieved strong operating revenues of \$49,572,000, evidence that we are enjoying a continued rebound of our attendance, membership program and retail and catering businesses. Overall operating revenues for the Museum were up by 12% from 2022.

We owe special recognition to the citizens of the seven-county metro region, the City and County of Denver and the SCFD for their ongoing operational support. A reflection of citizens being unsure about the economy, SCFD revenue for the Denver metropolitan area was flat in 2023 from the previous year. The District's renewal was approved by voters in 2016.

Operationally, the Museum had expenditures of \$50,443,000 which is in line with pre-pandemic levels as staffing levels and costs, and supplies and services continue to grow to meet increased attendance volume. In 2023, the Museum served approximately 2.4 million people.

The Museum continued with important and exciting capital projects in 2023. In the Everyone, Everywhere Strategic Plan, we finished schematic design for an updated Gems & Minerals experience and construction on Nature Play was well underway and expected to be completed in 2024. Design work also began on a restoration and renovation of the East side plaza and theater thanks to the Museum's largest private donation in its history from the Sturm Family Foundation.

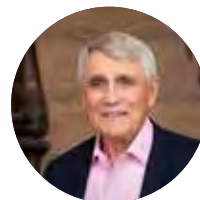
On the following page, we present our financial results with the strategic activities separated from operations. The Museum ended with a stated operating deficit of \$871,000, due in large part to anticipated one-time expenditures in 2023.

The Museum received a clean audit opinion from our independent accounting firm.



**Edward D. Scholz**  
Executive Vice President,  
Finance and Business Operations

*Edward D. Scholz*



**Steve Halstedt**  
Co-Chair,  
Finance and Audit Committee

*Steve C. Halstedt*

# 2023 YEAR END FINANCIAL REPORT

YEAR ENDING DEC. 31, 2023 (IN THOUSANDS)

*\*Excludes DMNS Foundation operating results*

## SUPPORT & REVENUE

	OPERATIONS	INITIATIVES	ALL MUSEUM
ADMISSIONS	11,166	—	11,166
SCFD	12,495	—	12,495
GIFTS & GRANTS	9,262	5,707	14,969
MEMBERSHIPS	5,271	—	5,271
GIFT SHOP & FOOD SERVICE (NET)	6,518	—	6,518
CITY & COUNTY OF DENVER	1,961	430	2,391
PROGRAM	1,078	—	1,078
OTHER	1,821	—	1,821
<b>TOTAL SUPPORT &amp; REVENUE</b>	<b>49,572</b>	<b>6,137</b>	<b>55,709</b>

## EXPENDITURES

### PROGRAM ACTIVITIES

	OPERATIONS	INITIATIVES	ALL MUSEUM
EXHIBITS/VISITOR EXPERIENCES	10,965	7,283	18,248
PHYSICAL PLANT	9,334	543	9,877
ADMISSIONS	4,222	—	4,222
COLLECTIONS & RESEARCH	7,346	602	7,948
EDUCATION	4,926	157	5,083
<b>TOTAL PROGRAM ACTIVITIES</b>	<b>36,793</b>	<b>8,585</b>	<b>45,378</b>

### SUPPORTING ACTIVITIES

	OPERATIONS	INITIATIVES	ALL MUSEUM
GENERAL AND ADMINISTRATION	8,040	411	8,451
MARKETING	2,981	—	2,981
FUNDRAISING	1,636	203	1,839
MEMBERSHIP	993	—	993
<b>TOTAL SUPPORTING ACTIVITIES</b>	<b>13,650</b>	<b>614</b>	<b>14,264</b>

	OPERATIONS	INITIATIVES	ALL MUSEUM
<b>TOTAL EXPENDITURES</b>	<b>13,650</b>	<b>614</b>	<b>14,264</b>
Changes in net assets from operations	(871)	(3,062)	(3,933)



# Leading the Way in Scientific Discovery

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The Denver Museum of Nature & Science is incredibly grateful for the generous support of the National Science Foundation (NSF), which has awarded us our largest research grant to date – approximately \$1.3 million as part of a larger \$3 million grant. This funding will play a pivotal role in advancing our understanding of Earth's history and will allow the Museum to lead the way in exploring how life rebounded following the extinction of over 75% of species due to an asteroid impact. This ambitious five-year project, led by our Curator of Vertebrate Paleontology, Dr. Tyler Lyson, brings together a diverse and multidisciplinary team of scientists. Together, we are unraveling the mysteries of life's resurgence following the end-Cretaceous mass extinction event 66 million years ago.

The research grant will not only help grow the Museum scientific team and fund extensive fieldwork and chemical analyses across the Rocky Mountain region, but also create a long-lasting impact in the field of paleontology. It aims to shed light on the evolution of modern plants and animals, as well as the ecological and environmental changes that occurred on land after the catastrophic end-Cretaceous mass extinction event. This event drastically altered the evolutionary tree of life and ultimately led to the emergence of today's extraordinary mammal diversity and serves as a natural laboratory for studying ecosystem reorganization with unprecedented precision. Significantly, the project will provide a lens through which to view the modern world as Earth grapples with its sixth major extinction event.

The research grant involves collaboration with 12 Principal Investigator scientists from eight distinguished institutions, reinforcing the project's comprehensive approach to scientific exploration. These institutions include Brooklyn College – City University of New York, College of Charleston, Colorado College, Smithsonian National Museum of Natural History, University of British Columbia, University of Colorado Boulder, University of Oregon and University of Wyoming. The project is scheduled to span from Sept. 1, 2023, to Aug. 31, 2028.

Thanks to grants such as this one, the Denver Museum of Nature & Science continues to solidify its position as a leading institution in the scientific community and on a global scale. This monumental NSF research grant represents a promise of discoveries that will enrich our understanding of Earth's history and the diverse life forms that call it home.

# Driving Curiosity, Engaging Communities

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What a year it's been! Thanks to your continuous support, we've been able to hit the road and empower our communities across the state in amazing ways.

Our Curiosity Cruiser has become a recognizable star along the Front Range. This custom-built trailer isn't just a vehicle; it's a rolling hub of science, education and fun. Packed with hands-on experiments, interactive exhibits and a team of friendly educators, it's been our way of saying, "Science is for everyone!" You may have seen us at fairs, festivals, parks and corporate events, making sure folks of all ages get a taste of the wonders of science. With the Museum's growing presence at events across the state, we're once again leading our community forward by championing science education and enrichment for all.

With your support, we were able to bring the Curiosity Cruiser to 21 cities, participating in 50 events and connecting with more than 19,500 people, further solidifying our commitment to reaching diverse audiences outside the walls of our Museum. Did we mention we present the content in English and Spanish, too?

We also hosted many other community events, including our Annular Solar Eclipse viewing party. On Oct. 14, 2023, we invited folks from all over to join us at the Museum and City Park for a day of solar spectacle. With an estimated attendance of 3,300, the event was filled with everything from craft activities to peering through solar telescopes — it was a day to remember!

As we look to the future, we're filled with excitement for what's to come. The Curiosity Cruiser will keep on rolling — bringing science and smiles to communities far and wide. And with your continued support, we'll keep dreaming up new ways to spark curiosity and inspire wonder in the world around us.

We are incredibly grateful for your partnership as we lead the way in exploring, learning and inspiring curiosity within our community. Whether you've experienced the wonders of our Museum firsthand, engaged with our Curiosity Cruiser or supported us in other meaningful ways, your enthusiasm and generosity mean the world to us.

Here's to another year of discovery, friendships and endless curiosity.



DENNY MUSEUM OF NATURE & SCIENCE  
**CURIOSITY CRUISER**

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# Charting a New Path Forward on Science & Policy

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The year 2023 brought a wave of gratitude and excitement to the Museum as we celebrated significant strides to lead and empower our community through science and socially impactful programs.

Thanks to the generous support of the National Conference of State Legislatures (NCSL) State Science Policy Fellowship Planning Grant Initiative backed by the Gordon and Betty Moore Foundation, the Institute of Science & Policy kicked off planning to launch a groundbreaking Colorado-based fellowship program. This initiative aims to foster meaningful collaborations between scientists and policymakers, ensuring that decisions impacting society are better informed by evidence and expertise.

The response from our community and beyond has been heartening. Colorado State Senators Chris Hansen and Cleave Simpson demonstrated that there is bipartisan support for evidence-based policymaking, by being champions and advisors for this initiative. Additionally, the Colorado Local Science Engagement Network, a partnership between the University of Colorado Boulder and the American Association for the Advancement of Science (AAAS), added their endorsement, emphasizing the collective impact we can achieve through collaboration.

Your support also allowed the Institute to bring diverse groups of people together to tackle complex societal issues through public programming, storytelling and convenings. The Institute held critical discussions about the ethics of science communication at their annual symposium to support rebuilding trust in science and scientists. Through the Laws of Notion podcast and a convening of thought leaders and community advocates, they took on the complex issue of Colorado's air quality and its impact on our health, economy and climate.

The Institute also celebrated winning the National Academies Eric and Wendy Schmidt Awards for Excellence in Science Communication for our podcast for the second year in a row. Finally, the Science at the Edge webinar series was launched to focus on innovations in science and technology and their impacts on policy and public perception. These are just a few of the programs that continued to broaden the Institute's reach and impact throughout Colorado and the global community.

We are immensely grateful to our donors and partners for your incredible support, which has helped us lead the way in science-informed decision-making. Together, we're creating a brighter future where science can drive positive change.

# Nature Play: An Urban Gateway to Colorado's Wilderness

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The Museum, in partnership with Denver Parks & Recreation, broke ground in 2023 on a project that promises to redefine the way we connect with the world around us. With the project moving full speed ahead, Nature Play, a four-acre interactive experience, is reflective of our state's adventurous nature and deeply resonates with our Museum values, bridging our indoor nature exhibitions directly with the community beyond our walls.

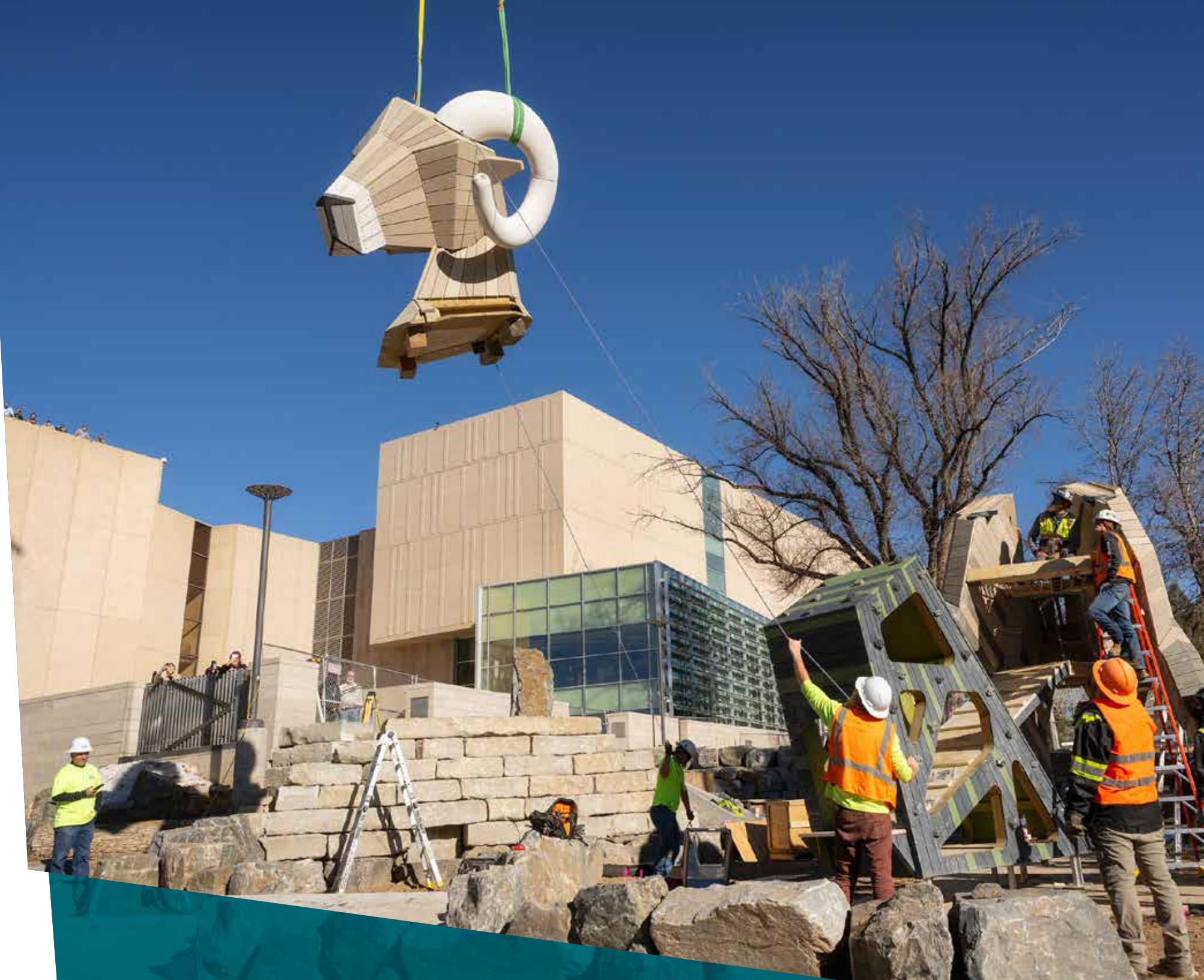
Nature Play is an ecosystem, designed to celebrate Colorado's spectacular natural beauty and wilderness and create a new special place for community connection and fun in Denver's historic City Park. When Nature Play opens in late 2024, visitors can anticipate thrilling highlights, including scaling a colossal 20-foot Rocky Mountain bighorn sheep, Colorado's state mammal, offering both fun and a test of agility.

By recreating the ecosystems featured in the Museum's beloved Explore Colorado dioramas, we invite our community to come explore the same habitats and wildlife they admired in the Museum halls while deepening their understanding and appreciation for Colorado's natural heritage. The Nature Play project will restore a historic waterway, reintroduce hundreds of native plants and trees, showcase local artistry, provide accessible pathways and foster self-directed play. It's an inclusive space for all ages and abilities, offering opportunities for reflection, relaxation and community engagement.

As Denver Parks & Recreation and the Museum bring Nature Play to life, the involvement of our community has been pivotal. In 2018, we started community engagement, gathering insights and preferences from thousands of community members to shape this project. We listened to children, who asked for slides, and we proudly incorporated three of them into the installation. Inclusivity is also paramount, with accessible play stations that seamlessly integrate with the city's pedestrian and biking infrastructure. Additionally, a lifelike natural waterway with a captivating beaver dam sculpture enhances the park's ecological diversity and sensory experience.

With its planned opening in September 2024, Nature Play will be an innovative blend of natural beauty, interactive play areas, artistic installations and ecological education. It's a testament to our commitment to bringing the Museum and the natural world closer together, extending the Museum's reach beyond our walls and actively engaging the community by bringing a deep love for science and nature into the shared public space of City Park.

As we embark on this transformative journey, we extend our gratitude to our generous supporters, Trustees, community members and staff. A special thank you to Nature Play Board Champions Happy Haynes and Susan McIntire for their personal dedication and leadership in making this project a reality. For a list of major supporters, please go to Page 32.





# Leading in Excellence: Inspiring Our Community Through World-Class Exhibitions

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In the fall of 2023, the Museum was honored with the “Best Host Organization” award by the Traveling Exhibits Community. An organization composed of traveling exhibition lenders, producers and host institutions on an international scale, the Traveling Exhibits Community recognized the Museum for its excellence, exceptional design and pioneering innovation in museum traveling exhibitions. This is a testament to the exceptional work of our installation and planning teams and the long-lasting impact we’re creating within our community and beyond.

Together, the Museum aims to continue pushing the boundaries of innovation, creativity and excellence as we strive to deliver unparalleled experiences to visitors and uphold our position as leaders in the fields of experiential education and community engagement.

In 2023, we inspired our guests with four world-class temporary exhibitions, each diving into different scientific wonders, from land to sea, past and present:

- **Unseen Oceans:** This exhibition transported visitors to a mysterious and spectacular aquatic world, discovering the ocean’s best-kept secrets, including alien-like creatures, glow-in-the-dark fish and other spectacular ocean life through movies, videos and exhibits.
- **Bugs:** With precision flight, swarm intelligence and mind control, the world of “Bugs” invited visitors to marvel at the adaptive genius of insects through immersive games and live-action sets.
- **Mysteries of the Ice Ages:** Visitors discovered the fascinating stories and mysteries of ice and adaptation through hundreds of artifacts and fossils, models and interactive experiences, traveling back in time through Earth’s icy history.
- **Wild Color:** The visually stunning exhibition celebrated the vibrant and untamed beauty of the natural world, showcasing a diverse collection of vivid flora and fauna.

We’d like to extend our gratitude to our generous donors whose unwavering support has been instrumental in facilitating the creation and hosting of these amazing exhibitions. Your commitment to advancing science and nature education not only enriches the experiences of our visitors but also propels us forward as leaders in our field. Together, we inspire curiosity, foster deeper connections with the natural world, and pave the way for a brighter future of discovery and appreciation.

# 2023 Board of Trustees

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The Museum extends its deepest gratitude for your support, which makes science accessible, understandable, fun and meaningful — creating a vibrant Colorado community today and far into the future.

## 2023 TRUSTEES

**Chair:** Stephen G. McConahey

**Vice Chair:** Jena Hausmann

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Matthew Burkett

Christopher Chavez

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Naresh Mandava

Christine Márquez-Hudson

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Eric Sipf

Thomas Swanson

Sondra Talley

M. Ray Thomasson

Mike Wilfley



**Back row:** Mark Spiecker, Henry Gordon, Naresh Mandava, Bruce Oreck\*, John Couzens, Jesus Salazar, Alice Jackson, Richard Ambrose, Matthew Burkett, Harold R. Logan Jr., Leo Tilman.

**Front row:** Paul Washington, Christopher Chavez, Kristen Richardson, Christine Márquez-Hudson, Hayden Hirschfeld, Allegra 'Happy' Haynes, Jena Hausmann, Steve Halstedt, Jandel Allen-Davis, Susan McIntire, Don Law, Steve McConahey.

**2023 Trustees not included in photo:** Montgomery Cleworth, John Levisay, Dave Liniger, Jenny Hopkins

\*NEW 2024 TRUSTEE



# Edwin Carter Legacy Society

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Thank you to these individuals for remembering the Museum in their estate plans.

Anonymous  
Marcelle Arak & Hal Landen  
Hartman Axley\*  
Mr. Paul Barrett  
Mrs. Barbara B. Becker  
& Mr. Benjamin Cordova  
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Dr. Vickie M. Wilson  
Joan E. Wood  
Robert Zupkus & Janet Burda  
Peter E. & Lucille F. Zwanzig

\*Passed away in 2023



# Endowments

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Thank you for supporting these endowment funds that will sustain the Museum for years to come.

Anonymous  
Avenir Conservation Fund  
Avenir Endowment for Conservation  
Bouslog Fund  
Collections Fund  
Coors Exhibit Fund c/o Adolph Coors Foundation  
Education Endowment Fund  
Vida F. Ellison Fund  
Founders Fund  
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Gates Family Foundation Capital Fund  
Gates Family Foundation Hall of Life Fund  
Robert P. & Mary S. Hackstaff Fund  
Wm. R. Hearst Endowed Fund for Education & Outreach Programs  
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Geraldine Pawley Endowed Fund  
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Phipps Family Fund  
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Paul & Harriet Rosen Teen Science Scholars Endowment Fund  
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Stucky Postdoctoral Fellowship Fund  
Volunteer Fund  
Dodge Wallace Endowment Fund  
Dodge Wallace Fellowship Fund  
Wilfley Fund  
Melvin & Elaine Wolf Foundation Scholarship Fund



# Collections Donors

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Thank you for enhancing the Museum's research collections with your in-kind donations.

## **EARTH SCIENCES**

Jim Carner  
Nate Hill  
C. Leonard Himes  
Wayne Itano  
Dana Licking  
Andre Lujan  
National Institute of Standards  
and Technology  
Nor'Wood Development Group  
PaleoDiscover Inc.  
Philip Persson  
Thomas Pulda  
Savory Institute  
Dennis & Tammy Schneider  
Spruce Mountain Properties Inc.

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Wendy Shattil & Bob Rozinski

## **ZOOLOGY**

Lawrence Barringer and Pennsylvania Department of Agriculture  
Gail M. Denney McGowan & Richard N. "Dick" Denney  
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Dr. Frank T. Krell  
Dr. Philip Lavretsky  
Michael Mason  
S. Mark Nelson  
Dr. Richard S. Peigler  
Rapa Nui people  
Phyllis Sharp  
Dr. Jean-François Treves



# Individual Donors

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## **\$100,000-\$999,999**

Montgomery Cleworth  
Don & Susie Law  
Mary Lynne & Stephen Kneller  
Kristin & Blair Richardson Family  
The Estate of Glenn Tucker

## **\$10,000-\$99,999**

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& Merrill Shields  
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Mr. David J.  
& Mrs. Sally J. Warren

## **\$5,000-\$9,999**

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# 2023 Scientific Publications

Denver Museum of Nature & Science staff published 37 peer-reviewed journal articles, edited volumes, books and book chapters.

Askelson, K.K., **Spellman, G.M.** & Irwin, D. 2023. Genomic divergence and introgression between cryptic species of a widespread North American songbird. *Molecular Ecology* 32 (24): 6839–6853. <https://doi.org/10.1111/mec.17169>

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Ferreira, M.S., Thurman, R.J., Jones, M.R., Farelo, L., Kuman, A.V., Mortimer, S.E., **Demboski, J.R.**, Mills, L.S., Alves, P.C., Melo-Ferreira, J. & Good, J.M. 2023. The evolution of white-tailed jackrabbit camouflage in response to past and future seasonal climates. *Science* 379 (6638): 1238–1242. <https://doi.org/10.1126/science.ade3984>.

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Kulkarni, S.S., Steiner, H.G., **Garcia, E.L.**, Luri, H., **Jones, R.R.**, Ballesteros, J.A., Gainett, G., Graham, M.R., Harms, D., Lyle, R., Ojanguren-Affilastro, A.A., Santibañez-López, C.E., Silva de Miranda, G., **Cushing, P.E.**, Gavish-Regev, E. & Sharma, P.P. 2003 Neglected no longer: phylogenomic resolution of higher-level relationships in Solifugae. *iScience* 26: 107684 (16 pp.). <https://doi.org/10.1016/j.isci.2023.107684>

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- Luke, S.H., Roy, H.E., Thomas, C.D., Tilley, L.A.N., Ward, S., Watt, A., Carnaghi, M., Jaworski, C.C., Tercel, M.P.T.G., Woodrow, C., Aown, S., Banfield-Zanin, J.A., Barnsley, S.L., Berger, I., Brown, M.J.F., Bull, J.C., Campbell, H., Carter, R.A.B., Charalambous, M., Cole, L.J., Ebejer, M.J., Farrow, R.A., Fartyal, R.S., Grace, M., Hight, F., Hill, J.K., Hood, A.S.C., Kent, E.S., **Krell, F.-T.**, Leather, S.R., Leybourne, D.J., Littlewood, N.A., Lyons, A., Matthews, G., McNamara, L., Menéndez, R., Merrett, P., Mohammed, S., Murchie, A.K., Noble, M., Paiva, M.-R., Pannell, M.J., Phon, C.-K., Port, G., Powell, C., Rosell, S., Sconce, F., Shortall, C.R., Slade, E.M., Sutherland, J.P., Weir, J.C., Williams, C.D., Zielonka, N.B. & Dicks, L.V. 2023. Grand challenges in entomology: priorities for action in the coming decades. *Insect Conservation and Diversity* 16 (2): 173–189. <https://doi.org/10.1111/icad.12637>
- Miller, J.B.**, Schweitzer, C.E. & Feldmann, R.M. 2023. New Decapoda (Brachyura) from the Paleocene Kambühel Formation, Austria. *Annalen des Naturhistorischen Museums Wien (A)* 124: 125–148. <https://www.jstor.org/stable/27213512>
- Malaney J.L., Wilford, C.R., Woods, J., Christman, B.L., Jennings, R.D., Chambers, C.L., Zahratka, J.L., Liphardt, S.W., **Demboski, J.R.** & Cook, J.A. 2023. Wagering with an incomplete deck—refining conservation plans for the New Mexico jumping mouse (*Zapus luteus luteus*). *Journal of Mammalogy* 104 (5): 1019–1035. <https://doi.org/10.1093/jmammal/gyad049>
- Murray, A.M., Brinkman, D.B., Friedman, M. & **Krause, D.W.** 2023. A large, freshwater chanid fish (Ostariophysii: Gonorynchiformes) from the Late Cretaceous of Madagascar. *Journal of Vertebrate Paleontology* 43: e2255630 (20 pp.). <https://doi.org/10.1080/02724634.2023.2255630>
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- Nash, S.E.**, Riebe, D.J., Feinman, G.M. & Ferguson, J.R. 2023. Obsidian use and circulation in the greater Reserve area in American Southwest: new analysis of the Martin Collection at the Field Museum. Pp. 194–217 in **Nash, S.E.** & **Baxter, E.L.** (eds.): *Pushing Boundaries in Southwestern Archaeology: Chronometry, Collections, and Contexts*. Boulder, Colorado: University Press of Colorado.

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- Ortiz Zevallos, J., Trever, L., Ochatoma Cabrera, J.A. & **Koons, M.** Reporte: Redescubrimiento de una Sala Hipóstila Moche con pintura mural en Pañamarca, Valle de Nepeña, Perú. *Arqueológicas* 32: 107–123. <https://revistas.cultura.gob.pe/index.php/arqueologicas/article/view/446/527>
- Peacock, J., Spellman, G.M., Field, D., Mason, M.J. & Mayr, G. 2023. The comparative morphology of the avian bony columella. *Anatomical Record, Early View* (29 pp.). <https://doi.org/10.1002/ar.25278>
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- Rowland, S.M., Korolev, S., **Hagadorn, J.W.** & Ghosh, K. 2023. Frenchman mountain dolostone: a new formation of the Cambrian Tonto Group, Grand Canyon and Basin and Range, USA. *Geosphere* 19 (3): 719–747. <https://doi.org/10.1130/GES02514.1>
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- Swain, A., Azevedo-Schmidt, L.E., **Maccracken, S.A.**, Currano, E.D., Dunne, J.A., Labandeira, C.C. & Fagan, W.F. 2023. Sampling bias and the robustness of ecological metrics for plant–damage-type association networks. *Ecology* 104 (3): e3922 (15 pp.). <https://doi.org/10.1002/ecy.3922>
- Theodosopoulos, A.N., **Spellman, G.M.** & Taylor, S.A. 2023. Survey of haemosporidian parasite infections in an endangered high alpine bird. *Parasites & Vectors* 16: 67 (7 pp.). <https://doi.org/10.1186/s13071-023-05667-7>
- Williams, P.R., Sharratt, N., Banikazemi, C., Roddick, A., **Koons, M.L.**, Gabler, C. & Vance, A. 2023. Ceramic production in the Tiwanaku sphere: LA-ICP-MS in the Moquegua, Titicaca, and Cochabamba regions. *Journal of Archaeological Science: Reports* 50: 103874 (10 pp.). <https://doi.org/10.1016/j.jasrep.2023.103874>
- Yu, K.C.** 2023. A guide to communicating astronomy with storytelling in planetariums. *Communicating Astronomy with the Public* 33: 13–20. [https://www.capjournal.org/issues/33/33\\_13.pdf](https://www.capjournal.org/issues/33/33_13.pdf)
- Zink, R.M., **Spellman, G.M.**, Canales-del-Castillo, R., Epperly, K. & Klicka, J. 2023. Mitochondrial DNA phylogeography of the Bushtit (*Psaltriparus minimus*). *Wilson Journal of Ornithology* 135 (1): 22–30. <https://doi.org/10.1676/22-00013>





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