

**Friends of the North Carolina Museum of Natural Sciences**

**RFP 18-001**

**Proposal to Wake County for Hospitality Tax Small Capital Projects  
Funding**

**Proposal Closing Time and Date:**

**February 8, 2018 before 3:00 pm Eastern Time**



Friends of the North Carolina Museum of Natural Sciences

February 7, 2018

Denise Foreman  
Assistant Manager  
Wake County  
P.O. Box 550  
Raleigh, NC 27602

Dear Ms. Foreman:

On behalf of the North Carolina Museum of Natural Sciences, it is a great pleasure to transmit the enclosed proposal titled **Dueling Dinosaurs: America's Most Spectacular Fossils**. Funding will be used to acquire the most complete pair of skeletons ever discovered of the world's two most popular dinosaurs, *Tyrannosaurus* and *Triceratops*, and to construct a publicly-visible laboratory for research and education on them for all ages and stages of learning – locally, state-wide, nationwide and globally. This iconic undertaking will bring to Wake County a resident-pleasing and tourist-attracting destination of comparable magnitude to the famous *T. rex* named Sue attraction at Chicago's Field Museum.

The **Dueling Dinosaurs** will be prepared, conserved and researched in a new Gensler custom-designed DinoLab in the Museum's public Nature Research Center at 121 West Jones Street in downtown Raleigh—itsself an innovation in the global field of science and nature-focused museums—where the final battle of these ancient creatures will come to “life” in front of enthralled audiences, onsite and online. Uniquely positioned to research, display and engage the public about this remarkable find, the Museum has developed a multi-year plan that joins scientific discovery with cross-generational education, including citizen science opportunities allowing public audiences to engage with authentic science in progress. The **Dueling Dinosaurs** opportunity is a clear testament to the success of the Museum's Nature Research Center – a 2012 wing with visionary County and City capital support and which is without parallel in the world of museums – to attract the most exciting science research at the public forefront.



Independent consultants confirm that this project will prompt a significant boost to Wake County tourism, civic pride, and economic development with an estimated >\$150 million dollars in projected economic impact—a substantial return on investment for the county. Letters of support interspersed through this proposal make clear the groundswell of stakeholder endorsements. This project will also elevate the Museum's stature in national and international scientific and museum circles as well as provide the vital Friends of the Museum with increased revenue opportunities to support the Museum's array of mission-advancing functions.

Should you have any questions or require additional information, please contact Catherine Clark, Head of Grants, at 919-707-9848. Thank you for your consideration.

Sincerely,



Angela Baker-James  
Executive Director, Friends of the Museum



Emlyn Koster, PhD  
Director of the Museum

# Dueling Dinosaurs: America's Most Spectacular Fossils

## Friends of the North Carolina Museum of Natural Sciences

### Table of Contents

1. Executive Summary	2
2. Scope of Project	3
3. Project Budget and Funding Sources	12
4. Project Timeline	14
5. Project Operating Plan	15
6. Estimates on Visitors	19
7. Organizational Information	22

### Exhibits

- A. Smithsonian Magazine article
- B. Concept Drawings and Images
- C. Market Study
- D. *Raleigh Museum Ranks 1<sup>st</sup> In Most Visited NC Attractions*, WRAL
- E. Evidence of Financial Commitment
- F. Cost Estimates
- G. Construction Timeline
- H. Education Program
- I. IRS 990
- J. Financial Audit
- K. Next Generation Museum University Partnerships
- L. Thad Eure, Jr. Award for Economic Impact
- M. American Alliance of Museums Re-Accreditation
- N. Letters of Support
- O. Biographies of Drs. Emlyn Koster and Lindsay Zanno

## 1. Executive Summary

The Friends of the North Carolina Museum of Natural Sciences has been presented with the extraordinary, limited-time opportunity to purchase what the Smithsonian Magazine recently described as “one of the greatest fossil specimens ever unearthed” (see exhibit A.) This spectacular specimen is a once-in-a-lifetime discovery of international acclaim. Known as the Dueling Dinosaurs, the fossil preserves the only complete skeletons yet known of the world’s two most famous species—*Tyrannosaurus rex* and *Triceratops*—frozen in time as they battled for survival during the Cretaceous Period. Each carcass was preserved intact by immediate burial and retains never before seen soft tissue, including skin, that will prompt immense public interest. No other museum in the world currently houses complete skeletons of these amazing animals.

Procurement of these specimens will be transformative for the North Carolina Museum of Natural Sciences (NCMNS); their acquisition will permit us to showcase the process of scientific research in front of public audiences as scientists solve a murder mystery 67 million years in the making. The Dueling Dinosaurs fossils will be professionally restored and conserved in a soon-to-be constructed DinoLab over an extended four-year period. Visitors will witness the gradual uncovering of the skeletal remains in real time with discovery details and interactive educational resources shared live online.

Civic leaders anticipate that the Museum’s research and education mission will help establish the Dueling Dinosaurs as a new county, state and global icon—a “must-see” for visitors to North Carolina. With a projected increase of 1.5 million visitors and resultant \$187 million dollars in economic impact during the four-year restoration period, the project is expected to bring a significant return on investment to Wake County.

This proposal requests \$1.5 million from the Wake County Hospitality Fund to support the project’s capital expenses estimated at \$7,696,716. Wake County’s investment will fund 19% of the project’s capital costs, which include the acquisition of the fossils (\$6,000,000), design and construction of a laboratory (\$1,581,116), and purchase and installation of laboratory equipment (\$115,600).

The project team is led by Friends Executive Director Angela Baker-James, Museum Director Dr. Emlyn Koster, and Head of Paleontology Dr. Lindsay Zanno. The team’s responsibilities related to the items funded in this proposal include purchasing the fossils; overseeing design and construction of the laboratory; purchasing and installing laboratory equipment; supporting maintenance and operation of the building and equipment; and fundraising.

The primary contact for this proposal is:  
Catherine Clark, Head of Grants  
North Carolina Museum of Natural Sciences  
catherine.clark@naturalsciences.org  
Telephone: 919-707-9848  
Fax: 919-733-1573

## 2. Scope of Project

Below are a description and pictures of the project's two main components: acquisition of the Dueling Dinosaur fossils and construction of a new dinosaur laboratory.

**Dueling Dinosaurs: America's Most Spectacular Fossils.** The Dueling Dinosaurs are a spectacular pair of preserved skeletons that were discovered in the badlands of eastern Montana. NCMNS has built a relationship with the discoverer, Clayton Phipps, which has led to an exclusive opportunity to acquire the specimens in 2018. Nicknamed the Dinosaur Cowboy, Mr. Phipps aspires for the Dueling Dinosaurs to be on public view as a research and educational asset of a major U.S. institution. The NCMNS's vision, led by Dr. Emlyn Koster, and its paleontology research unit headed by the renown dinosaur paleontologist Dr. Lindsay Zanno, make it a perfect fit to house these exceptional specimens and unfold their story.



*Dueling Dinosaur Fossils with Discoverer Clayton Phipps*

The Dueling Dinosaurs are scientifically significant, not only because of the preservation of their predator-prey interaction (evidence suggests that they died in combat, making them one of only two predator-prey dinosaur discoveries known worldwide), but also because of the completeness of their preserved anatomy; these specimens represent the only complete skeletons ever discovered of the iconic dinosaurs *Tyrannosaurus* and *Triceratops*. All other skeletons of these species housed in museums worldwide, including those displayed in major U.S. cities such as New York, Chicago, and Washington, D.C., were incomplete at the time of discovery. The completeness of their remains and the fact that each bone is preserved in its life position within the body indicates that these individuals were immediately buried as carcasses with skin, muscles, and soft tissues such as brains, eyes, and digestive organs at the time of their



mutual demise. The specimens are preserved in ancient sand that originated in a river channel on a subtropical coastal plain similar to eastern North Carolina 67 million years ago. Jacketed blocks containing the Dueling Dinosaurs, weighing 15 tons, are currently located in two non-public areas of the Museum.



*An artistic rendering of the Dueling Dinosaurs fossils as discovered intertwined in their death poses, Triceratops (left) and Tyrannosaurus (right.)*



*Close up view of the authentic fossil skull of Triceratops and the T. rex skeleton.*



*Little is known about what the frill of Triceratops looked like in life (left). Evidence of scale patterns on the skull of the Dueling Dinosaurs Triceratops (right) is a first of its kind.*



*A patch of T. rex foot skin on the Dueling Dinosaurs specimen (left). Other patches of skin are likely within the unprepared block, including the possibility of feather preservation that may be detectable macroscopically and/or the same skin and scute pattern on a living dinosaur, an ostrich (right).*

Through Dueling Dinosaurs, Dr. Lindsay Zanno, Head of Paleontology, and her multidisciplinary team of researchers and technicians will investigate all lines of evidence leading to a better understanding of an ecosystem that flourished prior to the asteroid strike that brought about the end of the Age of Dinosaurs.

**Dinosaur Conservation Laboratory.** The Museum's existing third floor Paleontology Research Lab is neither large enough, nor structurally able, to accommodate the size and weight of these large dinosaur specimens. Therefore, a new DinoLab must be constructed to meticulously restore and conserve the specimens. Gensler, an architect firm of global renown, has been engaged to design a new, first floor, street front, 3,300 square foot DinoLab.

The glass-walled lab will be constructed on the first floor of the Museum's Nature Research Center facing Jones Street such that passersby can get a sneak peek of the lab's activities and the specimens in preparation. New exhibitry installed around the inside walls of the lab will support interactive STEM engagement opportunities. Visitors



will witness the gradual uncovering of the skeletal remains and discovery details will be shared live, both onsite and online. As the fossils are separated from the surrounding sediment, the paleontologists researching these specimens will converse with Museum visitors, educators and an online audience about what they are doing and what they are learning. In parallel to the Museum's paleontologists, there will also be opportunities for children throughout Wake County, the state of North Carolina, and nationally to participate in this project from their schools via a newly developed Citizen Science project where real fossils are shipped to schools for children to sift through, identify, and send to the Museum for archiving.

The images below are an artistic rendering of the proposed building improvement; additional images and drawings are provided in exhibit B. The renovation is anticipated to take approximately four months and will open to the public in September 2019.

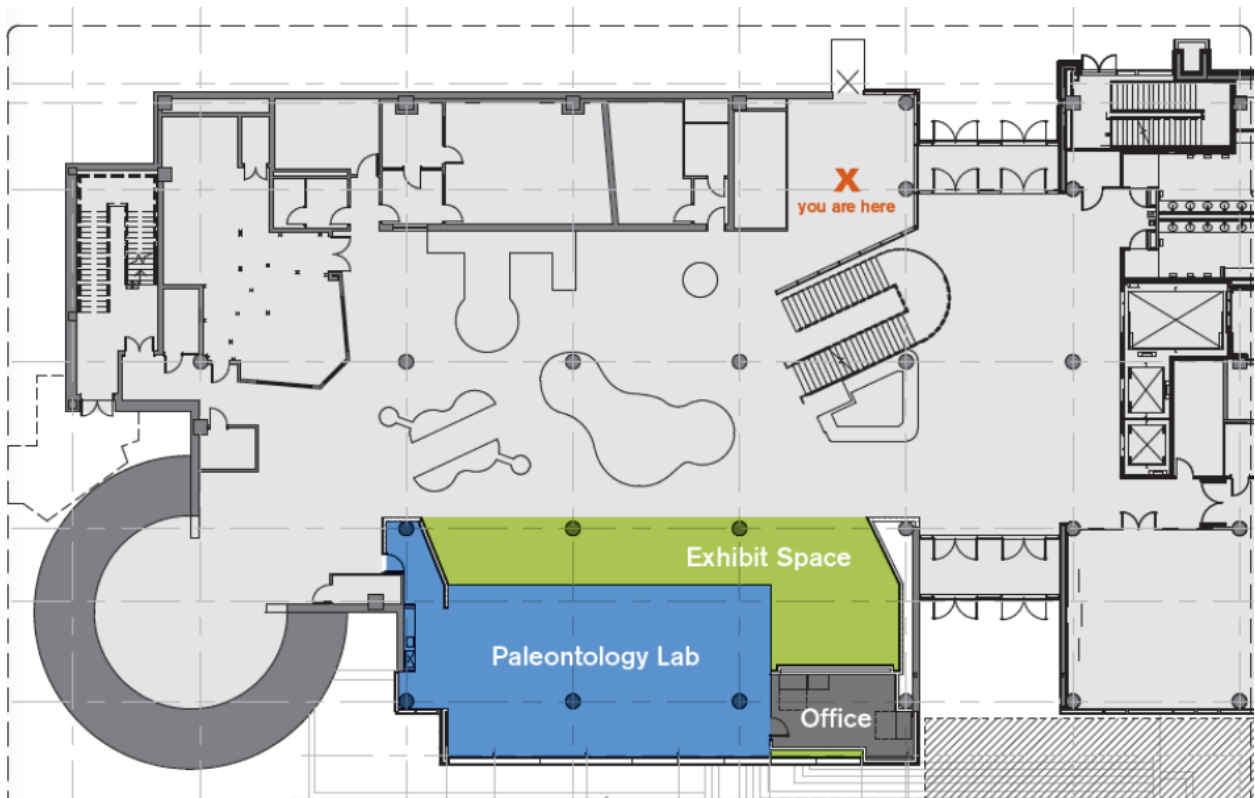


*Street view of the DinoLab as conceived at 121 W. Jones Street.*

*Dueling Dinosaurs: America's Most Spectacular Fossils*  
*Friends of the North Carolina Museum of Natural Sciences*



*Interior view of the DinoLab.*



*Schematic designs of the new DinoLab, showing area to be renovated within the first floor of the Nature Research Center building. Jones Street is at the bottom of image.*

### **Analysis of Demand and Effectiveness in Addressing Community Need.**

Visionary museums, such as the NCMNS, are innovative forces for helping to close the gap between science, society and the environment. As the most attended attraction in Wake County, with nearly 1,000,000 visitors per year, the Museum is proud to be a central location for informal science learning. For a region renowned for its deep roots in a STEM-driven economy, the Dueling Dinosaurs will play an enhancing role as a new high-profile research and education platform.

Delays in the project will not impact viability. The fossils are already housed in a secure location in the Museum, not visible to the public. The building renovation for the laboratory and equipment installation is estimated to take four months.

**Need for County Investment.** Investment from Wake County is critical to the success of this project for two main reasons: (1) this extraordinary opportunity arose quickly without the fundraising window typically allowed capital projects, and (2) as a museum with no admission charge, all project funding – capital and operating – must be raised.

With capital projects, the Friends typically has several years to fundraise prior to construction. However, the opportunity to purchase these remarkable specimens occurred quickly and did not allow the usual fundraising window. Several other major U.S. museums, such as the Smithsonian and the American Museum of Natural History, are currently developing new dinosaur exhibits, and had we delayed commitment to this acquisition, we likely would have lost the opportunity to another institution.

While the fossil purchase is the majority of the cost, the impact of the investment comes from the public access provided to the specimens. Wake County's support of the capital project costs allows the Friends to focus on fundraising for the costs associated with public access - staffing, materials and supplies, education, outreach, and exhibitry. Those expenses will craft the visitor experience and drive attendance. Other museums support those expenses through increased ticket sales, but as a free attraction, the NCMNS does not have that option.

An independent market analysis (see exhibit C) reviewed the economic impact of the Dueling Dinosaurs in comparison with another famous dinosaur, the "*T. rex* named Sue" at Chicago's Field Museum. The analysis provides comprehensive data on attendance projections, area markets, and tourism economics. The following are excerpts from the report, detailing increases in overnight room stays and food and beverage purchases in Wake County anticipated as a result of the Dueling Dinosaurs:

- ❖ "Beginning with the first year of exhibition and over the next four years, the consultants project the Dueling Dinosaurs exhibit will increase NCMNS annual attendance, which was 944,000 in 2015, by between 282,540 to 377,600, to a new total of 1.2 to 1.3 million. This projection is based on the NCMNS's high attendance count when the new building opened in 2012 and the response of the Chicago market when the Field Museum opened its *Tyrannosaur* exhibit in 2000 (40% increase cumulatively over four years of Sue impact). During the four years after the Dueling Dinosaurs opens at NCMNS, the total additional attendance is

expected to be 1,130,000 (if the museum reaches the NCMNS 2012 numbers again) or 1,510,000 (if it experiences growth similar to what the Field Museum experienced). We have greater confidence in the higher number as it reflects a good case study. NCMNS already demonstrated in 2012 that it can reach the 1.2 million number.”

- ❖ “The visitor origin of this new attendance, discussed above, is of paramount importance to elements calculated into economic impact. Only visitation from beyond the local market counts towards economic impact. The three origin categories for the increased attendance and the anticipated percent and numerical capture of the 1,510,000 over four years are: 1. The local Raleigh/Wake County market – 40% or 604,000, 2. Beyond Raleigh but still within North Carolina – 35% or 528,000, and 3. From outside North Carolina – 25% or 377,000. While the first category is likely to benefit downtown Raleigh, only the second two categories count towards economic impact for Raleigh/Wake County.”
- ❖ “A further distinction of importance is whether the new visitors are day visitors or overnight visitors to Raleigh/Wake County. The breakdown for the two key origin markets is shown below:

New Visitation From Impact Markets		
Origin Market Category	Visitor Category	
	Day	Overnight
Within NC /Outside Wake County	422,912	105,728
Outside North Carolina	188,800	188,800
<b>Total</b>	<b>611,712</b>	<b>294,528</b>
Source: MFA		

**Collaborations.** Collaboration with community partners is particularly important in fulfilling our mission to serve underserved and underrepresented communities with the Dueling Dinosaurs program.

- ❖ Urban, At-Risk Youth - We partner with youth-serving institutions such as the YMCA and Boys & Girls Club to provide on-site science education at their locations. Sponsored funding is also utilized to pay for group transportation to the Museum.
- ❖ Persons with Disabilities - We offer programming specific to populations who may face barriers when interacting with the Museum. Low-sensory and STEM career events are examples of programs that cater to the needs and interests of persons with disabilities and are made possible with generous support from sponsors.
- ❖ Female and Minority Populations - Females and minorities are underrepresented in the sciences, and sponsored Museum programs such as Girls in Science and the STEM Minority Opportunity Fair allow us to reach these audiences and grow a STEM field that better represents the makeup of our community.
- ❖ Major U.S. Museums – NCMNS scientists will partner with the Burke Museum in Seattle, Washington, for immediate (launching in year 1) coast-to-coast educational impact. Together, we have co-designed a new Citizen Science



project where fossils of tiny animals that lived in the same ecosystem as the Dueling Dinosaurs and associated lesson plans will be sent to schools. Additionally, a new teacher-field experience will bring Wake County school teachers to Montana to engage in real expedition experiences.

**Tracking and Measuring Success.** Success will be measured by attendance as reported by the Museum's electronic counting system. In addition to quantitative data, reports to the County will also include qualitative measures such as attraction of conferences and large professional meetings, regional and national recognitions, and awards of federal and foundation funding.

The Friday Institute at North Carolina State University will partner with the Museum to provide formative and summative evaluation of Dueling Dinosaurs education programs. As a long-standing partner of the Museum, the Friday Institute is intimately familiar with staff and programs of the Museum and is well suited to evaluate the impact of and measure progress toward the educational goals established for Dueling Dinosaurs.

**Consistency with Wake County Room Occupancy and Prepared Food and Beverage Operating Principles.** This project is consistent with many of the Wake County Room Occupancy and Prepared Food and Beverage Operating Principles. Below is a discussion of those that are most prominent.

*Principle A, Prioritize use of funds for projects that drive measurable, regular overnight visitation or positive return on investment (ROI) –* An independent analysis of the project estimates 611,712 overnight visitors in Dueling Dinosaurs first four years. Using Wake County's multiplier of 1.69 visitors per room and a room rate of \$102, overnight visitors will spend nearly \$18 million in room fares alone. Given that visitors are likely to stay in the downtown area where room rates are higher, the actual room spending – and occupancy tax collected – is likely to be substantially higher.

*Principle B, Support and promote the on-going capital expenditure program and expansion of existing investments in major facilities to keep them current, relevant and competitive in market –* Museums must constantly evolve to remain relevant. Wake County's support will build on the investment in the Nature Research Center which opened in April 2012. The Nature Research Center increased the stature and relevance of the NC Museum of Natural Sciences, as evidenced by the Museum's skyrocketing attendance figures; in the year following its opening, attendance reached 1.2 million visitors. In awarding reaccreditation to NCMNS in 2017, the American Association of Museums' peer reviewers lauded, "The Museum has forthrightly evolved its interpretative philosophy and strategy to address bigger stories about humans as an inseparable element in the ecosystem of all life, and therefore to be concerned about matters of conservation and sustainability."

*Principle D, Ensure project investments are secured by solid long-term plans, both operational and financial, that demonstrate viability and sustainability.* The NC Museum of Natural Sciences will celebrate its 140<sup>th</sup> anniversary next year. A combination of

steady operational support from the State of North Carolina and vigorous fundraising through the Friends of the Museum have allowed the Museum to dynamically grow and responsibly support that growth to ensure a sustained investment. This project adds to the list of projects this successful partnership has afforded since 2000: the Nature Exploration Center and Nature Research Center, both in downtown Raleigh, and the Prairie Ridge Ecostation and Research Lab, in west Raleigh.

*Principle F, Support investments that complement economic development efforts and enhance quality of life experiences for visitors, newcomers and long-time residents.* The market analysis of this project demonstrates the balance of benefits this project provides for economic development and for local residents. Of the anticipated 1,510,000 visitors in the project's first four years, 40% will originate locally from Raleigh/Wake County and 60% will be day or overnight visitors.

*Principle J, Ensure that investments support the long-term vision of Wake County and its cities and towns as a tourism destination* – The NCMNS is the most highly visited museum in the state (see exhibit D). The Museum puts Raleigh and Wake County on the map as a tourism destination.



### 3. Project Budget and Funding Sources

**Sources of Funding and Evidence of Commitment.** The Friends of the Museum have raised \$3,276,790, which exceeds the required half of non-county funding. Evidence of commitments is provided as exhibit E. Wake County's contribution is 19% of the total.

<u>Source of Funding</u>	<u>Amount</u>	<u>Year of Commitment</u>	<u>Status</u>
Friends of NCMNS	\$2,000,000	2017	Received
Individual Donors	2,909	2017	Received
State of North Carolina	273,881	2017	Committed
Corporate Donors	1,000,000	2018	Committed
<i>Subtotal Received &amp; Committed</i>	<i>\$3,276,790</i>		
State of North Carolina	1,726,119		Pending
Individual and Corporate Donors	1,059,160		Pending
<i>Subtotal Pending</i>	<i>\$2,785,279</i>		
Wake County	1,500,000		
<i>Total</i>	<i>\$7,562,069</i>		

**Ratio of private to public investment.** For the capital project costs, the ratio of private to public investment is 1 to 1.52. While the amount of public investment is higher than private for capital, the remaining project costs, including staffing, materials and supplies, education, outreach and exhibitry, will largely be funded by private sources. The budget for these components is provided in this proposal under *Section 5. Project Operating Plan*.

**Expenditures by Category and Schedule of Expenditures.** The following chart displays the project's expenditures and schedule of expenditures. Construction costs include a 10% contingency and no inflation factor. All other costs are fixed.

Source documentation of all cost estimates is provided as exhibit F, with the exception of planning and design costs which are estimated by staff based on earlier projects. Construction costs were prepared by Brasfield & Gorrie. Equipment and furnishings costs were prepared by Lisa Herzog, Assistant Lab Manager of Paleontology at NCMNS. Fossil costs are based on contractual agreement.

*Dueling Dinosaurs: America's Most Spectacular Fossils*  
*Friends of the North Carolina Museum of Natural Sciences*

		<u>Schedule of Expenditures</u>		
<u>Category</u>	<u>Total</u>	<u>CY 2018</u>	<u>CY 2019</u>	<u>CY 2020</u>
Planning and Design	\$100,000	\$100,000	-	-
Land Acquisition/Right of Way	N/A	-	-	-
Construction	1,346,469	-	\$1,347,469	-
Equipment / Furnishings	115,600	-	115,600	-
Other – Fossils	6,000,000	2,000,000	2,000,000	\$2,000,000
Contingency*	<u>134,647</u>	<u>-</u>	<u>134,647</u>	<u>-</u>
Total	\$7,696,716	\$2,100,000	\$3,597,716	\$2,000,000

\*Contingency on construction only

**Impact on Existing Infrastructure.** The DinoLab will not impact existing infrastructure.

## 4. Project Timeline

The following chart shows the major project actions related to the capital project funded by Wake County. The construction timeline, prepared by Brasfield & Gorrie, is provided as exhibit G.

<u>Project Action</u>	<u>Start Date</u>	<u>Finish Date</u>
Study and Analysis of Project	January 2016	August 2017
Site Identification	N/A	
Land/Site Acquisition	N/A	
Architectural/Engineering Studies	July 2018	January 2019
Facility Construction	April 2019	September 2019
Equipment Installation	August 2019	September 2019

As evidenced, the vision and planning for this project have been underway for over a year. The bullets below paint a broader picture of the milestones completed to date and what is to come.

- ❖ January 2016: Drs. Koster and Zanno travel to New York to visit the fossil discoverers and examine the fossils in person.
- ❖ June 2016: Dr. Zanno visits the site of discovery to authenticate the fossils.
- ❖ August 2016: Market study of economic impact complete.
- ❖ April 2017: Dueling Dinosaur fossils relocated to NCMNS from storage in NY.
- ❖ June 2017: Initial funding of \$273,881 secured from NC General Assembly. Fossils are collected from around the site of discovery for Citizen Science public school project.
- ❖ September 2017: Gensler completes initial DinoLab drawings.
- ❖ February 2018: Purchase agreement finalization with Dueling Dinosaurs discoverer.
- ❖ September 2019: Dino Lab opens, fossil restoration beings, and educational programs are launched in concert with the Museum's 140th Anniversary.
- ❖ 2019 – 2022: Fossil restoration and scientific research continues. Educational programs offered onsite, in schools across NC, and online to a worldwide audience.
- ❖ 2022: Fossil preparations complete. Ongoing education program with Dueling Dinosaurs continues. The specimen will be relocated to Museum's renovated dinosaur hall on Nature Exploration Center building's 3rd floor, at which point the Dino Lab would feature new dinosaur discoveries. Dueling Dinosaurs would continue to be a major visitor attraction, with docents and educational offerings onsite and online.

## 5. Project Operating Plan

**Ten-Year Operating Budget.** The project's ten-year operating budget totals \$4,908,260. Of that, 86% will be expended in the first four years. A detailed discussion of the operating plan follows the table below.

	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
<i>Anticipated Revenue</i>					
Donations and Grants	1,137,380	400,960	401,960	1,769,360	-
State of North Carolina	<u>132,360</u>	<u>132,360</u>	<u>132,360</u>	<u>132,360</u>	<u>132,360</u>
<b>Total Revenue</b>	<b>1,269,740</b>	<b>533,320</b>	<b>534,320</b>	<b>1,901,720</b>	<b>132,360</b>
<i>Anticipated Expenditures</i>					
Specimen Preparation & Research	288,440	328,420	328,420	328,420	107,360
Dino Lab Supplies	15,000	15,000	15,000	15,000	15,000
STEM Outreach	179,900	179,900	180,900	180,900	-
Community Engagement	18,000	-	-	-	-
Exhibitry	758,400	-	-	1,367,400	-
Facility and Equipment Maintenance & Operation	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>
<b>Total Expenditures</b>	<b>1,269,740</b>	<b>533,320</b>	<b>534,320</b>	<b>1,901,720</b>	<b>132,360</b>

	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>
<i>Anticipated Revenues</i>					
Donations and Grants	-	-	-	-	-
State of North Carolina	<u>132,360</u>	<u>132,360</u>	<u>132,360</u>	<u>132,360</u>	<u>132,360</u>
<b>Total Revenue</b>	<b>132,360</b>	<b>132,360</b>	<b>132,360</b>	<b>132,360</b>	<b>132,360</b>
<i>Anticipated Expenditures</i>					
Specimen Preparation & Research	107,360	107,360	107,360	107,360	107,360
Dino Lab Supplies	15,000	15,000	15,000	15,000	15,000
STEM Outreach	-	-	-	-	-
Community Engagement	-	-	-	-	-
Exhibitry	-	-	-	-	-
Facility and Equipment Maintenance & Operation	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>	<u>10,000</u>
<b>Total Expenditures</b>	<b>132,360</b>	<b>132,360</b>	<b>132,360</b>	<b>132,360</b>	<b>132,360</b>

**Operations from 2019-2022.** In the first four years of the project, 86% of the ten-year operating budget will be spent.

- Specimen Preparation and Research (\$1,273,700) – Specimen preparation will require five new full-time employees consisting of a lab manager and four preparators. These professionally trained individuals will restore and conserve the fossil. Salaries and benefits of the preparation staff are estimated at

\$246,440 annually for four years. In years two through four, a researcher will join the lab staff to analyze CT scans of the prepared specimens and conduct body morphology research. The research budget of \$297,400 also includes funds to pay for CT processing (we expect to receive CT scanning pro-bono as a result of the profile of the specimen) and research analysis supplies; Dr. Zanno and other researchers to travel to present findings to academic audiences; and publication costs in scientific journals.

- DinoLab Supplies (\$60,000) – A budget of \$15,000 annually will provide consumables supplies used by the preparators in their daily work. Gloves, drill bits, brushes, powders, plaster, and epoxy are examples.
- STEM Outreach (\$721,600) – A full-time outreach coordinator and part-time NCSU graduate student will be employed to manage and deliver outreach. Half of the outreach budget funds teacher education and supplies and materials for schools. A detailed description of the outreach efforts planned for Dueling Dinosaurs is available in exhibit H.
- Community Engagement (\$18,000) – A part-time position will support the Museum event staff as they plan and execute large public events in the first year of Dueling Dinosaurs.
- Exhibitry (\$2,125,800) – After completion of the laboratory, new exhibitry will be installed in four locations adjacent to the lab. Exhibitry will educate the public and display the specimens as preparation is completed. Exhibits will employ technology to be engaging and dynamic. Installations may include a children's area and a youth news program area. The estimated budget for exhibitry is \$600 per square foot, with 4,141 square feet on the first floor of the Nature Research Center and 6,616 square feet on the third floor of the Nature Exploration Center.
- Facility and Equipment Maintenance and Operation (\$40,000) – A budget of \$10,000 annually will provide funding for maintenance and operation of the laboratory and its equipment. The Museum maintains a single budget to support these expenses for the downtown facilities, so there are additional funds available to meet the laboratory's needs should they exceed the annual budget.

The Museum is pursuing an annual operating budget increase of \$132,360 from the State of North Carolina to support two full-time positions, annual laboratory operating supplies, and annual maintenance and operation expenses. The Friends will raise the balance of the operating expenses, which are either one-time or time-limited, through private donations and foundation and federal grants.

**Operations from 2023-2028.** Upon completion of the Dueling Dinosaurs research, the laboratory will continue operations on specimens collected by Dr. Zanno and other paleontology researchers. These expenses will be supported through annual state appropriations.

- Specimen Preparation and Research (\$644,160) – Specimen preparation will continue with two full-time employees. Research work will be conducted by Dr. Zanno and other paleontology researchers.

- Dino Lab Supplies (\$90,000) – A budget of \$15,000 annually will provide consumables supplies used by the preparators and researchers as well as equipment replacement as needed.
- Facility and Equipment Maintenance and Operation (\$40,000) – A budget of \$10,000 annually will provide funding for maintenance and operation of the laboratory and its equipment. The Museum maintains a single budget to support these expenses for the downtown facilities, so there are additional funds available to meet the laboratory's needs should they exceed the annual budget.

After the completion of Dueling Dinosaurs work in 2022, staff will reassess opportunities for education and outreach. The Friends will fundraise for these efforts through private donations and foundation and federal grants.

**Project Management.** The operations of this project will be managed with existing staff. These duties are within the normal scope of responsibilities for these individuals.

- Dr. Zanno will direct all work in the laboratory and STEM education programs as well as procurement of laboratory supplies and equipment maintenance and operation.
- Debra Gardner, Deputy Director, is responsible for facility maintenance and operation.
- Roy Campbell, Chief of Exhibits, will direct the creation and installation of exhibitry.
- The Chief of Community Engagement (position currently vacant) will manage all public events and oversee marketing and public relations for the project.

**Marketing.** National media coverage of this project is anticipated. The Friends has engaged a nationally recognized firm to design and execute a strategic public relations and communications plan for Dueling Dinosaurs that will complement these extraordinary specimens with heightened public awareness. It will also serve as a platform for Dr. Zanno and her team to share their expertise and thought leadership.

The firm will apply its experience to Dueling Dinosaurs and anticipates securing regular coverage throughout the project, both in local and national media. Even in this early stage of planning, we are confident this acquisition, and subsequent research and educational milestones, will garner media interest from outlets across every platform. Targeting top-tier, mainstream media including The New York Times, The Washington Post, USA Today, NBC News, Good Morning America and NPR, as well as national trades such as Discovery Magazine, National Geographic and Popular Science has potential to garner more than 300 million impressions – nearly 100 percent of the United States. Local media outreach also will be impactful, targeting influential outlets such as Our State Magazine, WRAL and other North Carolina news affiliates, and printed news like The News & Observer and The Charlotte Observer. Already, Smithsonian Magazine has confirmed plans to feature the Museum's acquisition as a follow up story to its July 2017 article (see exhibit A.) Additionally, discussions are underway to explore a documentary film with Atlantic Productions and renowned broadcaster and naturalist David Attenborough. In all, media exposure around Dueling Dinosaurs will raise the



profile of the Museum as destination for scientific, educational and public engagement for the Southeast region.

**Approach and Funding Commitment to Facility Maintenance and Upkeep.** To ensure the ongoing operating viability and sustainability of the project, the Museum will pursue an annual operating budget increase from the State of North Carolina in support of facility maintenance and upkeep. The State typically authorizes new positions and operating funds when a facility is expanded, and the DinoLab should qualify accordingly.

**Operating Budget & Financial Results.** The most recent IRS form 990 and audit are attached as exhibits I and J respectively. Please note that the 990 for 2017 and audit for FY17 are not finalized as of the time of proposal submission, and will be submitted as soon as available.

## 6. Estimates on Visitors

A market analysis of the project was performed by Informal Learning Experiences, Inc. of Denver (ILE) and Market & Feasibility Advisors, LLC of Chicago/Austin (MFA) in July 2016. The analysis is provided as exhibit C.

**Visitor Estimates.** The following visitor estimates are specific to new visitors who will be attracted to the Museum solely because of Dueling Dinosaurs. Estimates do not include the Museum's current annual attendance of approximately 960,000 visitors to the Nature Exploration Center and Nature Research Center in downtown Raleigh.

Using comparison data with the Field Museum in Chicago, IL, which opened the major dinosaur exhibit for the T. Rex named Sue in 2000, the consultants estimate the Dueling Dinosaurs will bring 1,510,000 visitors in its first four years. Of those visitors, 40% will be from within Wake County and 60% from outside of Wake County. Correlating with Wake County's visitor definitions in the RFP's *Attachment 4: Visitor Estimates and Return on Investment*, the analysis further segments the 60% of visitors outside Wake County into 611,712 day visitors and 294,528 overnight visitors (see exhibit C, page 5, *New Visitation From Impact Markets* chart.)

Using actual attendance trends from the Museum's Nature Research Center which opened in April 2012 and the visitation figures from the market analysis, the following chart shows the increase in visitors anticipated in the seven years following the completion of construction of the DinoLab for the Dueling Dinosaurs.

	Dueling Dinosaurs Visitors			
	Wake County	Day	Overnight	Total
FY2019-20	173,614	175,831	84,659	434,104
FY2020-21	147,968	149,857	72,154	369,979
FY2021-22	145,980	147,843	71,184	365,007
FY2022-23	136,439	138,181	66,531	341,151
FY2023-24	132,345	134,035	64,535	330,916
FY2024-25	128,375	130,014	62,599	320,989
FY2025-26	124,524	126,114	60,721	311,359
<b>Total</b>	<b>989,244</b>	<b>1,001,875</b>	<b>482,384</b>	<b>2,473,504</b>

**Annual Economic Impact.** Using the above visitor projections and the County's multipliers provided in *Attachment 4: Visitor Estimates and Return on Investment*, the following chart shows the estimated annual economic impact of visitors for the project for the first seven (7) years of operation after completion of the capital investment.

	<b>Estimated Food and Beverage and Hotel/Motel Spending</b>			
	<b>Day Meals</b>	<b>Overnight Meals</b>	<b>Overnight Room</b>	<b>Total</b>
FY2019-20	\$4,114,437	\$2,209,605	\$5,109,608	\$11,433,649
FY2020-21	\$3,506,661	\$1,883,207	\$4,354,828	\$9,744,696
FY2021-22	\$3,459,536	\$1,857,899	\$4,296,304	\$9,613,739
FY2022-23	\$3,233,427	\$1,736,470	\$4,015,506	\$8,985,404
FY2023-24	\$3,136,425	\$1,684,376	\$3,895,041	\$8,715,842
FY2024-25	\$3,042,332	\$1,633,845	\$3,778,190	\$8,454,367
FY2025-26	\$2,951,062	\$1,584,830	\$3,664,844	\$8,200,736
<b>Total</b>	<b>\$23,443,879</b>	<b>\$12,590,231</b>	<b>\$29,114,321</b>	<b>\$65,148,432</b>

**Return on Investment.** Wake County's investment of \$1.5 million in the Dueling Dinosaurs project will be returned in 4.78 years based on occupancy, prepared food and beverage taxes collected. This ROI assumes a room rate of \$102 per room night. However, many visitors to the Dueling Dinosaurs will stay in accommodations in the downtown area which charge higher room rates. Using a rate of \$169 per night, the Dueling Dinosaurs project will generate over \$48 million hotel/motel spending and over \$2.8 million in occupancy taxes in the seven-year period. This reduces the return on investment to 2.93 years.

	<b>Estimated Taxes Collected</b>			
	<b>Food &amp; Bev Tax</b>	<b>Occupancy Tax</b>	<b>Total</b>	<b>Cumulative Total</b>
FY2019-20	\$63,240	\$306,576	\$369,817	
FY2020-21	\$53,899	\$261,290	\$315,188	\$685,005
FY2021-22	\$53,174	\$257,778	\$310,953	\$995,958
FY2022-23	\$49,699	\$240,930	\$290,629	\$1,286,587
FY2023-24	\$48,208	\$233,702	\$281,910	\$1,568,498
FY2024-25	\$46,762	\$226,691	\$273,453	\$1,841,951
FY2025-26	\$45,359	\$219,891	\$265,250	\$2,107,200
<b>Total</b>	<b>\$360,341</b>	<b>\$1,746,859</b>	<b>\$2,107,200</b>	

**Additional Project Financial Impacts.** An independent marketing study (see exhibit C) estimates \$187 million of economic impacts from the Dueling Dinosaurs: "We estimate that a visit to the Dueling Dinosaurs by day visitors will result in economic impact per visitor of \$105 while the comparable figure for overnight visitors is \$419 per visitor (all figures are based on 2016 dollars). The impact will be felt by other local Raleigh/Wake County attractions, retailers, restaurants, hotels, gas stations, and other businesses. Assuming 611,712 day visitors and 294,528 overnight visitors from beyond the museum's market area, the expected economic impact, over four years, will be \$64

million from the day visitor market and \$123 million from the overnight visitor market for a total economic impact over four years of approximately \$187 million.”

## 7. Organizational Information

Incorporated in 1979, the Friends of the North Carolina Museum of Natural Sciences is a 501(c)3 nonprofit organization whose purpose is to support the NC Museum of Natural Sciences. The Friends accepts and manages earned and contributed revenues for the Museum. All Friends activities serve the broader goal of helping the Museum illuminate the interdependence of nature and humanity.

Executive Director Angela Baker-James has been a Friends employee for more than 20 years. The Friends employs 11 full-time staff members and is overseen by a 25-member Board of Directors, each serving a three-year term. The 2017-2018 board of directors are listed below. There is currently one vacancy due to a recent resignation.

<b>Name, Board Role (if applicable)</b>	<b>Professional Association</b>
Amy Baldwin, <i>Chair, Development Committee</i>	Community Relations & Event Manager, BASF
Jason Barron	Attorney, Morningstar Law Group
Deborah Y. Clarke	Special Consultant to the Executive Vice Chancellor & Provost, UNC-CH
Satish Garimella	Principal Technical Architect, AT&T
Chris Dillon	Judge, NC Court of Appeals
Paul Garofolo	Managing Director, APT Consulting
David Gwyn	President, French/West/Vaughan
John A. Hardin	Attorney, Manning Fulton & Skinner
S. Scott Hensley	Partner of Taxation, Stancil & Company
Marc Hoit	Vice Chancellor for IT & CIO, NCSU
Emlyn Koster, <i>Museum Director</i>	Director, NCMNS
Alfred M. Mays	Program Officer, Burroughs Wellcome Fund
Mark McIntire, <i>Vice President</i>	Director of Environmental Policy & Affairs, Duke Energy
Andrea Nixon	Senior Vice President, Enterprise Data Management, PNC Bank
Dhruv Patel	VP, Technology Banking, Square 1 Bank
Keith Poston, <i>Immediate Past President</i>	President & Executive Director of Public School Forum of NC

John Sall	Co-founder and Executive Vice President, SAS
Ashton Smith	Community and Employee Engagement Manager, Citrix
Alice Tate	Community Volunteer
Anita Watkins, <i>President</i>	Director, Rex Health Ventures
James White	Executive VP, Organizational Relations, YMCA of the Triangle
Tyrone Williamson, <i>Treasurer</i>	Sr. Management Accountant, City of Raleigh
Elaine Wood	Agent, Prudential York Simpson Underwood
Jason York	VP, Private Advisor, BB&T Wealth

**About the North Carolina Museum of Natural Sciences.** Opened in 1879 and greatly expanded in 2000 and 2012, the NC Museum of Natural Sciences illuminates the interdependence of nature and humanity through what do we know?, how do we know?, what is happening now?, and how can the public participate? questions. Supported by a State appropriation with contributed and earned revenues managed by its nonprofit Friends organization, the Museum ranks highly in national efficiency comparisons of facility size and annual data of budgets, visitation, staffing, and volunteerism. Its engaging visitor experience combines elements of a natural history museum, science-technology center, children's museum, aquarium and zoo. With 4.5+ million individual impacts in 2016, onsite resources are well integrated with offsite, online and outdoor resources.

The Museum is Raleigh's top-rated attraction, the State's most well-attended museum, and an exemplar of progressive trends in nature and science museums globally (see exhibit K.) Recognized in 2014 with a national medal for outstanding community service at the White House, in 2015 by the Greater Raleigh Convention and Visitors Bureau with its top award for economic impact (see exhibit L), and in 2016 by the Raleigh Mayor's Award for service to those with disabilities, the Museum is a Smithsonian Affiliate and one of three nationwide partners of the Smithsonian Science Education Center.

In 2016-17, reaccreditation by the American Alliance of Museums (see exhibit M) reported these observations: The museum has succeeded in regenerating itself over the past several years ... this institution does so many things so well; overall, it is in amazing shape for any museum, much less a state museum ... the museum has forthrightly evolved its interpretative philosophy and strategy to address bigger stories about humans as an inseparable element in the ecosystem of all life, and therefore to be concerned about matters of conservation and sustainability ... succeeded in becoming a locus of significant research ... NCMNS is a leader in integrating onsite and offsite resources and in integrating various modes of communication effectively ...



embraced new forms of learning ... developed an extensive network of partnerships to expand its educational outreach ... efforts to become more accessible to the large share of its service population with physical and intellectual challenges is notable and exemplary ... deeply respected by community leaders ... embraced and perhaps pioneered new forms of learning using multimedia tools and partnerships with local and national organizations ... reflects and reinforces the Research Triangle reputation of innovation and learning ... aspires to be – being asked to be – a leading component of the region's desire to be seen as an international magnet for innovation and talent ... the museum has taken a leadership role in developing important partnerships within and beyond North Carolina ... the NCMNS is preparing to apply for accreditation by the Association of Zoos and Aquariums – this voluntary step has resulted in further self-analysis and improvement of its work.

Among the most published contributors to the advance of nature-focused museums which seek to be participatory school and public resources for understanding the Earth and mitigating its human-influenced changes, Director Emlyn Koster, leads a remarkable staff assisted annually by four dozen university interns and 70,000 hours of volunteerism. Invited external roles include consultancy to the Dorothea Dix Legacy Committee and board membership on the International Committee for Museums and Collections of Natural History.

**Letters of Support and Endorsement.** Letters of support from the following individuals and organizations are attached as exhibit N to this proposal:

- ❖ Mr. Jim Beley, Chairman, Board of Directors, Greater Raleigh Convention and Visitors Bureau
- ❖ Mr. Kristopher Larson, President and CEO, Downtown Raleigh Alliance
- ❖ Ms. Virginia Parker, Senior Vice President of Triangle Market, Bank of America
- ❖ Ms. Margo Metzger, Marketing Director, Our State Magazine
- ❖ Mr. Wade Smith
- ❖ Ms. Anita Watkins, President, Board of Directors, Friends of the North Carolina Museum of Natural Sciences
- ❖ Ms. Diane Wood, President, National Environmental Education Foundation
- ❖ Mr. Dan Martin, Managing Principal, Market & Feasibility Advisors, LLC, and Dr. Robert West, President, Informal Learning Experiences, Inc.

**Litigation or Governmental or Regulatory Action.** There is no litigation or governmental or regulatory action pending against the Friends organization.

**Conflict of Interest.** There are no contractual relationships with other organizations that would be a conflict of interest or have the appearance of conflicts of interest in partnering with Wake County to deliver the capital project.

**Proposer Team Experience.** Angela Baker-James, Executive Director of the Friends, will manage all legal affairs regarding the purchase of the fossils and oversee all financial aspects of the project, including collection of project donations, approval of

project expenditures, payments to vendors, accounting, and auditing. Ms. Baker-James reports of the Board of the Friends of the NC Museum of Natural Sciences.

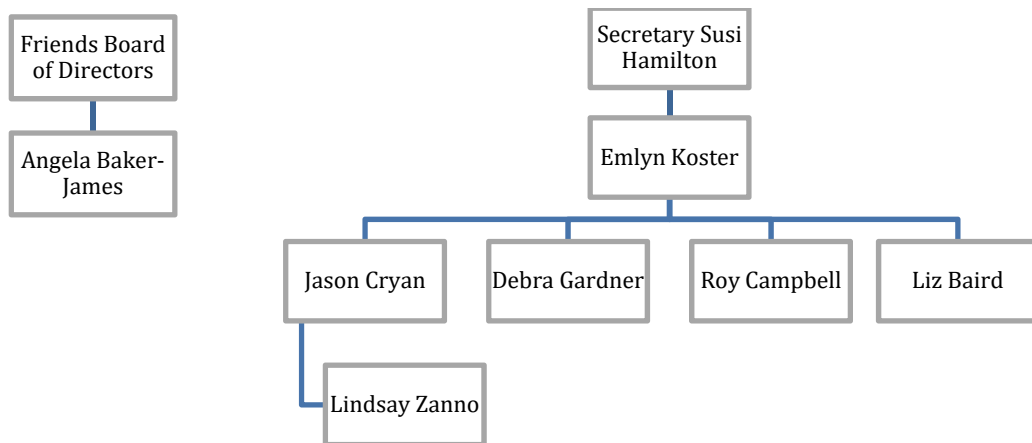
Dr. Emlyn Koster, Museum Director, will lead the overall vision for the project. He will be instrumental in fundraising efforts and promotion of public events. Dr. Koster reports to Susi Hamilton, Secretary of the North Carolina Department of Natural and Cultural Resources. Secretary Hamilton is an appointee of Governor Roy Cooper. Dr. Koster's biography is provided in exhibit O.

Dr. Lindsay Zanno, Head of Paleontology, will consult on all aspects of the project, including laboratory design, exhibitry, and public education. Once operational, she will be responsible for the day-to-day operations of the laboratory. Dr. Zanno has served as the Museum's Head of Paleontology since the opening of the Nature Research Center in 2012. Dr. Zanno's biography is provided in exhibit O.

Roy Campbell, Chief of Exhibits and Digital Media, will oversee the design, build and installation of the public signage and exhibitry that supports and compliments the Dueling Dinosaurs laboratory. Mr. Campbell has performed this role for all of the exhibits on the seven floors of the current downtown museum buildings.

Debra Gardner, Deputy Director, will oversee construction of the laboratory in partnership with the State of North Carolina Construction Division. Employees of this division, who are knowledgeable of and experienced with the Museum's facilities, will conduct the construction bid process, select and manage the contractors, and oversee daily project construction.

Liz Baird, Chief of School and Lifelong Education, and her team will design and implement an educational program for Dueling Dinosaurs, which reaches visitors on-site, online, and in schools across North Carolina.



**Similar Projects.** The North Carolina Museum of Natural Science's 79,400-square-foot wing, the Nature Research Center (NRC), opened to the public on April 20, 2012 and attracted 70,000 visitors during its 24-hour opening. The mission of the NRC is to engage the public in understanding the scientific research that affects their daily lives. Its goals are to inspire youth to seek careers in science, motivate educators to be passionate about teaching science and demystify science research for the public.

The NRC's focus is contemporary research and it houses five, glass-walled Research Labs for scientists: 1) Genomics & Microbiology; 2) Biodiversity; 3) Paleontology; 4) Evolutionary Biology & Behavior; and 5) Astronomy & Astrophysics. Each Research Lab is staffed by full-time scientists and a host of visiting scientists, post-doctoral scholars, and students who conduct research while visitors observe "science in action". These researchers frequently leave their labs to talk directly with visitors about their research and why it is important. In addition, there are three Investigate Labs where visitors are guided by full-time scientists and science educators to learn skills, participate in ongoing research or engage in other hands-on activities that illustrate how research is done. The NRC provides unique opportunities for students, teachers and the general public to see for themselves how research is conducted and become active participants in the research process. At the same time, the NRC serves as a resource to scientists throughout North Carolina—and beyond—who wish to use the NRC's state-of-the-art laboratories to further their multidisciplinary research while communicating their research findings to their colleagues and to public audiences.

The NRC is the centerpiece of Green Square, a mixed-use complex that also serves as the headquarters for the NC Department of Environmental Quality. The NRC and the larger Green Square are built according to Leadership in Energy and Environmental Design standards and received a gold certificate from the Downtown Raleigh Alliance February 13, 2013. On June 12, 2014, it was awarded platinum certification, the highest standard in environmental design that recognizes best-in-class building strategies and practices. The State Employees Credit Union (SECU) high-rise tower is located adjacent to the NRC. SECU was a loyal and generous supporter of the Green Square project and the NRC in particular, providing a \$4 million donation toward the SECU Daily Planet, securing naming rights.

In 2014, the Museum received the National Medal for Museum Service from the Institute of Museum and Library Sciences, the nation's highest honor conferred on museums and libraries for service to the community. First Lady Michelle Obama presented the Museum with its Medal at a White House ceremony in May, acknowledging the Museum's significant and successful efforts to engage diverse and nontraditional audiences. Later that year, the Museum hosted the annual Association of Science-Technology Centers' annual conference, bringing in 1,700 attendees from 42 different nations and contributing nearly \$3 million to the local economy.

The impact of the NRC on the Wake County hospitality industry was recognized by the Greater Raleigh Convention and Visitors Bureau at its 2015 annual meeting when museum director Emlyn Koster, Ph.D., was awarded the Thad Eure Jr. Memorial Award

(see exhibit L), the Bureau's longest running and most prestigious award recognizing an individual or organization that has made a major impact on the Wake County hospitality industry. The addition of the NRC has attracted a myriad of conferences. In June 2014, the Evolution 2014 conference - the premier annual opportunity for sharing scientific research related to evolution - brought close to 2,000 attendees from 38 countries to the Triangle. In October 2014, the museum hosted the annual conference of the Association of Science-Technology Centers, drawing more than 1,700 delegates representing 42 countries, and generating \$2.25 million dollars of direct visitor spending. Other international conferences include The Wildlife Society Annual Conference, held in Raleigh in fall 2016, and CitSci2019, the annual meeting of the Citizen Science Association, scheduled for March 2019.

## Dueling Dinosaurs: America's Most Spectacular Fossils Friends of the North Carolina Museum of Natural Sciences

### Exhibits

- A. Smithsonian Magazine article
- B. Concept Drawings and Images
- C. Market Study
- D. *Raleigh Museum Ranks 1<sup>st</sup> In Most Visited NC Attractions*, WRAL
- E. Evidence of Financial Commitment
- F. Cost Estimates
- G. Construction Timeline
- H. Education Program
- I. IRS 990
- J. Financial Audit
- K. Next Generation Museum University Partnerships
- L. Thad Eure, Jr. Award for Economic Impact
- M. American Alliance of Museums Re-Accreditation
- N. Letters of support
- O. Biographies of Drs. Emlyn Koster and Lindsay Zanno

Smithsonian.com

## Will the Public Ever Get to See the “Dueling Dinosaurs”?

America’s most spectacular fossil, found by a plucky Montana rancher, is locked up in a secret storage room. Why?



Clayton Phipps looks over the massive ceratopsian fossil. The ancient creature’s rib cage is on the left and the pelvis on the right. (Robert Clark)

By [Mike Sager](#)  
Smithsonian Magazine | [Subscribe](#)  
July 2017

The Dinosaur Cowboy sits behind an old desk in the dusty basement workshop of the ranch house where he grew up, wearing a denim shirt and blue jeans, his thinnish brown hair bearing the impression of his black Stetson, which he’s left upstairs in the mudroom, along with his boots. Behind him, peering down over his shoulder from its perch atop an antique safe, is the fearsome, dragon-like head of a horned *Stygimoloch*, a replica of an important fossil he once found. The way it is mounted, jaws agape, it appears to be smiling, captured in a moment of prehistoric mirth.

The Dinosaur Cowboy is smiling, too. You could probably say it’s an ironic smile, or a little bit of a grimace. His real name is Clayton Phipps. A wiry 44-year-old with a weathered yet impish face, he lives on the ranch with his wife, two sons, a few horses and 80 cows in the unincorporated community of Brusett, Montana. Located in the far north of the state, near the rim of the Missouri River Breaks, it is all but impassable during winter; the closest shopping mall is 180 miles southwest, in Billings. Of his spread, Phipps likes to say: “It’s big enough to not starve to death on.”

Phipps is the great-grandson of homesteaders—pioneers who were given the right to claim, improve and buy land at bargain prices. Most became cattle ranchers, the only logical choice in this unforgiving region. Little did they know the land they’d claimed was sitting atop the Hell Creek Formation, a 300-foot-thick bed of sandstone and mudstone that dates to a period between 66 million and 67.5 million years ago, the time just before dinosaurs went extinct. Stretching across the Dakotas and Montana (in Wyoming, it’s known as Lance), the formation—one of the richest fossil troves in the world—is the remnant of great rivers that once flowed eastward toward an inland sea.

Before his father died, and the homestead was divided among four descendant families, including Phipps and his two siblings, Phipps scraped by as a ranch hand on a neighboring ranch. He and his wife, Lisa, a teacher’s aide at the local school, lived in a cabin on the rancher’s property. One day in 1998, Phipps says, a man showed up and asked the landowner’s permission to hunt fossils. Given consent to roam the property for a weekend, the man returned Monday morning and showed Phipps a piece of triceratops frill—part of the shield-like structure that grew around the massive plant-eater’s head.

“He told me: ‘This piece is worth about \$500,’” Phipps recalls. “And I was like, ‘The heck it is! You found that just walking around?’”

From that day on, whenever Phipps wasn’t doing ranch work, he was out looking for fossils. What he found he prepared in his basement workshop, or consigned to others to prepare, for sale at trade shows and to museums and private collectors. In 2003, he unearthed the head of the horned *Stygimoloch*—from the Greek and Hebrew, roughly, for “demon from the river Styx”—a bipedal dinosaur, about the size of a bighorn sheep, prized by collectors for its highly ornamented skull. Phipps sold the fossil for more than \$100,000 to a private collector, who placed the specimen in a museum in Long Island, New York.

Then, one hot day in 2006, Phipps and some partners made the discovery of a lifetime—experts say it might well be one of the greatest fossil specimens ever unearthed. Or, more accurately, two specimens. Jutting out from a desiccated hillside were the remains of a 22-foot-long theropod and a 28-foot-long ceratopsian. Locked in mortal combat when they were instantly buried in sandstone, perhaps along a sandy riverbed, the incredibly well-preserved pair is forever captured in a moment in time from

more than 66 million years ago. "There's an entire skin envelope around both dinosaurs," Phipps says. "They're basically mummies. There could be soft tissue inside." If true, the specimen offers the possibility that scientists might recover tissue cells or even ancient DNA.

The exact species of the Montana Dueling Dinosaurs, as the specimens have become known, are still in contention. The larger of the two appears to be a ceratopsian, from the family of beaked and bird-hipped plant-eaters beloved by children for their horned faces. The existence of additional horns on the animal's faceplate, however, has led to some speculation that it may be a rare or new species. The smaller specimen appears to be either a juvenile *Tyrannosaurus rex* or a *Nanotyrannus*, a dwarf species, rarely documented, the very existence of which some scientists dispute.

Scott Sampson, a paleontologist and the president of Science World, a nonprofit education and research facility in Vancouver, is among the few academics, museum officials and commercial collectors who have viewed the specimen. "The Dueling Dinosaurs is one of the most remarkable fossil discoveries ever made," he says. "It is the closest thing I have ever seen to large-scale fighting dinosaurs. If it is what we think it is, it's ancient behavior caught in the fossil record. We've been digging for over 100 years in the Americas, and no one's found a specimen quite like this one."

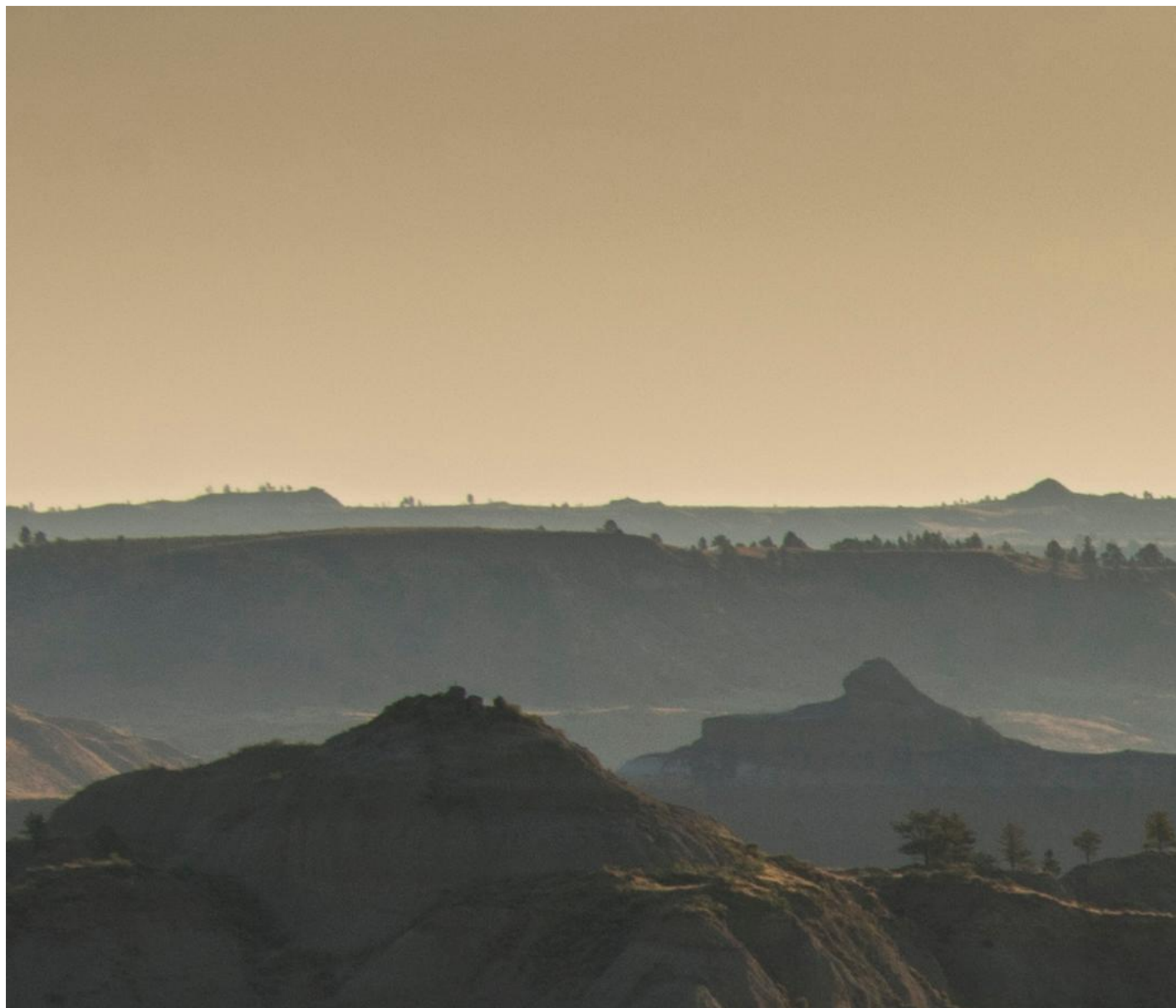
And yet there is a chance the public will never see it.

\*\*\*\*\*

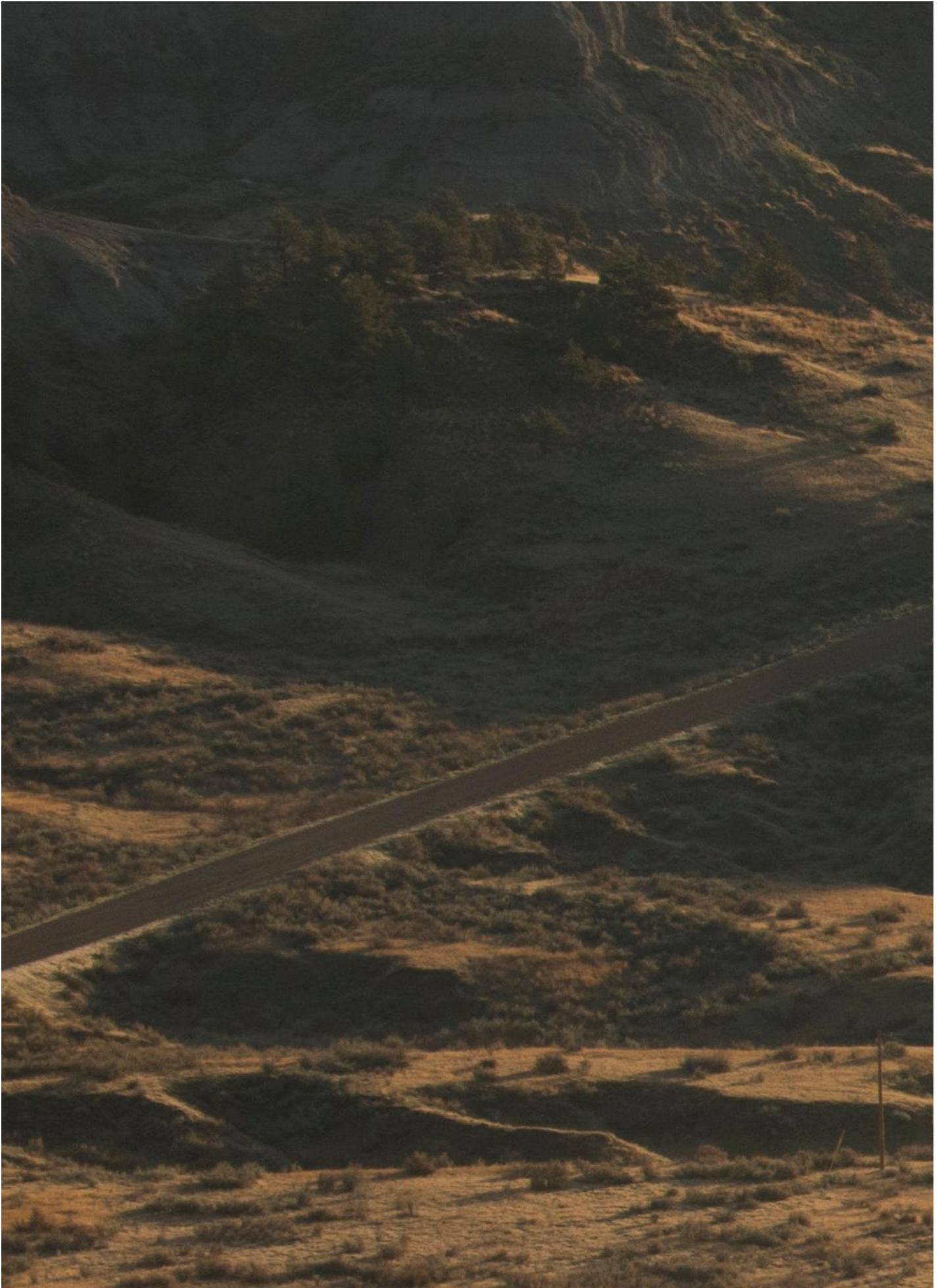
We may speculate romantically about how far into the past dinosaur fossils were collected by our hominin ancestors, but the study of dinosaurs is a relatively new science. Deep thinkers in ancient Greece and Rome recognized fossils as the remains of life-forms from earlier epochs. Leonardo da Vinci proposed that fossils of marine creatures like mollusks found in the Italian countryside must have been evidence of ancient seas that once covered the land. But for the most part, fossils were regarded as the remains of gods or devils. Many believed they had special powers of healing or destruction; others that they were left behind from Noah's flood, a notion still held by creationists, who deny evolution.

Dinosaurs inhabited much of the earth, but their fossils are not easily found in most places. The western United States is a treasure trove due to a combination of factors: We live during a sweet spot in time when the rock layers laid down during the end of the Cretaceous Period have become exposed after eons of erosion, a process accentuated by the stark environment, lack of plant life and extreme weather conditions that continually reveal ever new layers of ancient rock. As layers of the earth's surface erode, fossilized bones of dinosaurs, more solid than the sand and clay in which they are buried, peek through.

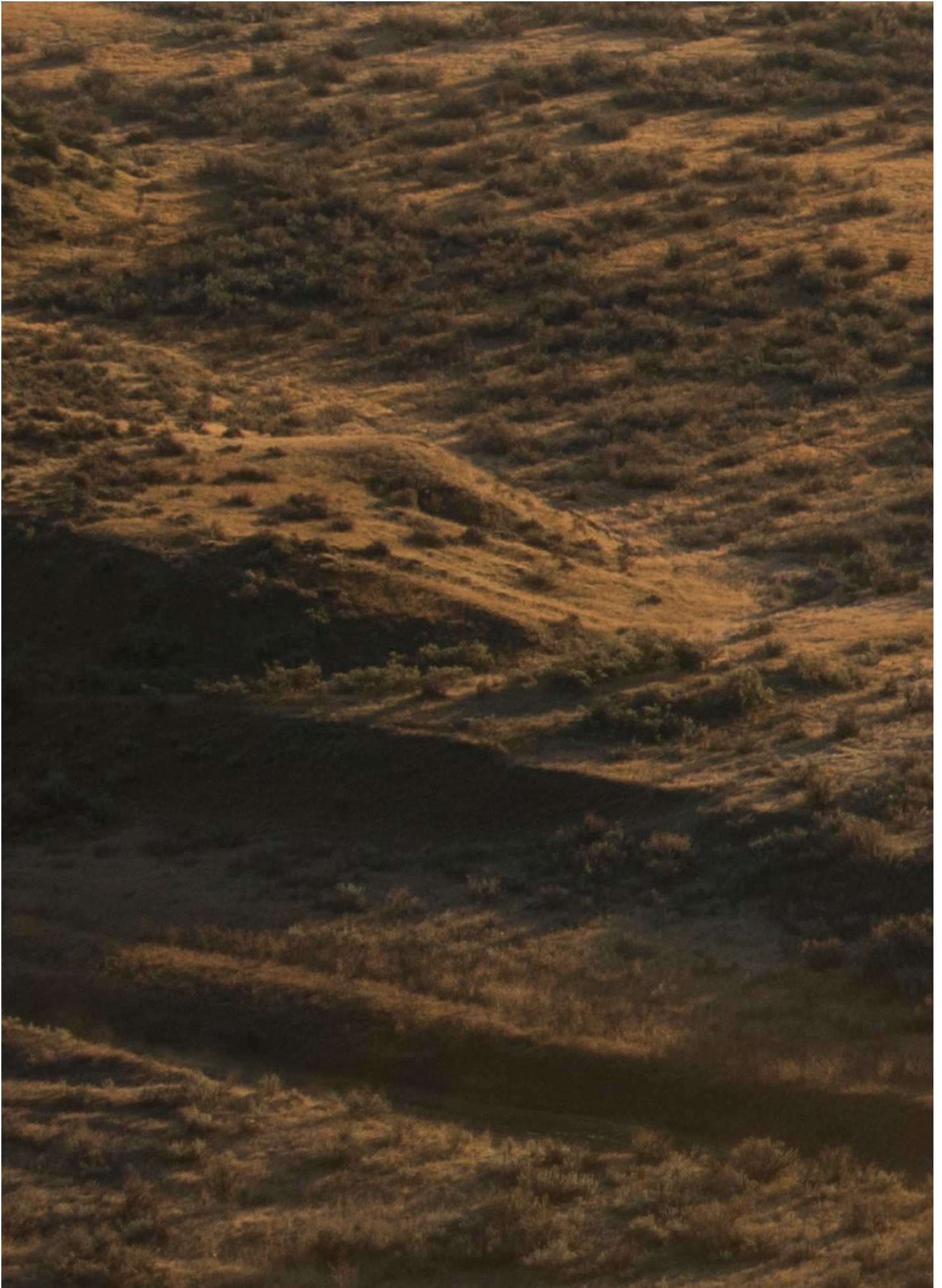
In the early 20th century, universities and museums frequently commissioned commercial bone diggers to excavate dinosaur fossils. Many of the oldest specimens on display in museums in the United States and Europe were uncovered and harvested by these "professional amateurs." While federal land can only be prospected by accredited academics in possession of a permit, dinosaur bones found on private land are private property: Anybody can dig with the permission of the owner.



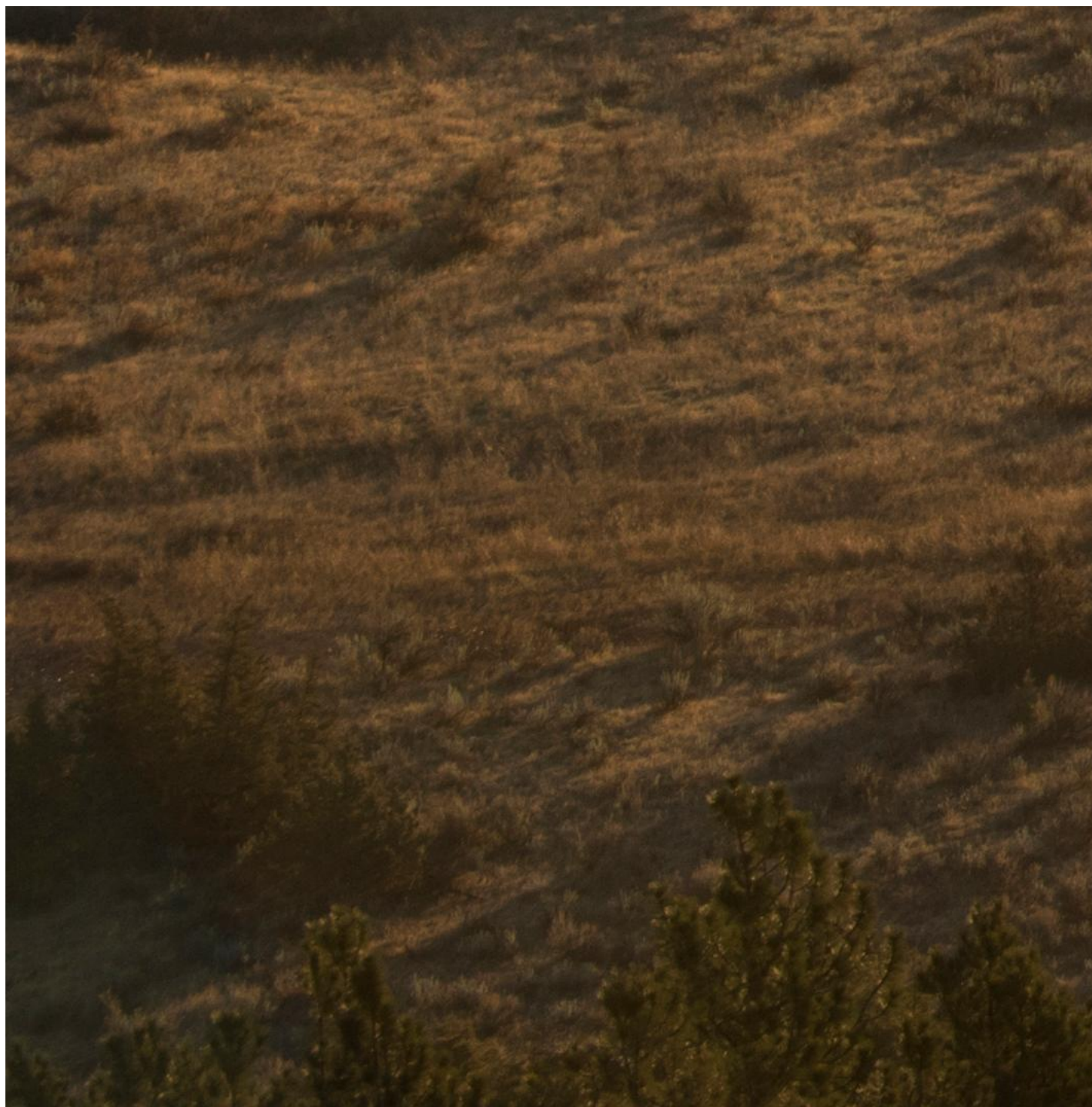












The Hell Creek Formation gets its name from this tributary, which flows into the Missouri River north of Jordan, Montana. (Bill Hatcher)

In 1990, a group of paleontologists digging on the Cheyenne River Indian Reservation, in South Dakota, unearthed an enormous and incredibly well-preserved *T. rex*. Later named “Sue,” it is to date the largest and most complete specimen ever found, with more than 90 percent of its bones recovered. Sue was auctioned in 1997 for \$7.6 million to the Field Museum of Natural History in Chicago, the most ever paid for a dinosaur fossil.

The record sale was publicized around the world and kicked off a sort of dinosaur bone “gold rush.” Scores of prospectors descended on Hell Creek and other fossil beds in the West, drawing the ire of academics, who contend that fossils should be extracted according to scientific protocols, not ripped from the ground by profit-seeking amateurs. To scientists, every site contains much more than fossil trophies—the plant, pollen and mineral records, as well as the exact placement of the find, are critically important to understanding the history of our planet. Over the following decade, the mania for dinosaur bones was fueled by the popularity of movies like *Jurassic Park*, booming wealth in Asia, where fossils became ultra-chic for use in home décor, and the media’s attention to celebrity collectors like Leonardo DiCaprio and Nicolas Cage. At the height of the bone rush, there were perhaps hundreds of prospectors conducting digs across hundreds of thousands of square miles, ranging from the Dakotas to Texas.

One of them was Cowboy Phipps.

\*\*\*\*\*

It was a typical day in early June, clear with the mercury in the triple digits, when Phipps discovered the Dueling Dinosaurs.

He was prospecting with his cousin Chad O’Connor, 49, and a friend and fellow commercial bone digger named Mark Eatman, 45. O’Connor, strong and good-humored, is partially disabled by cerebral palsy. This was his first time hunting for dinosaur bones. He’d later say he accompanied his cousin on the expedition in the hope he’d

“find something that could change my life.”

Eatman had been a full-time prospector for many years before falling demand and prices for fossils, along with a three-year stretch of bad luck, forced him to give up the game. “His wife told him it was time to get a real job,” Phipps says.

Eatman found work selling carpet in Billings. On occasion he’d join Phipps for an expedition, sometimes camping out for a few days at a time. Bone diggers across the spectrum—commercial, academic, amateur—would probably agree that the hunt is often as important as the find, an opportunity to get out into nature and to collaborate with like-minded people beneath the same ancient stars the dinosaurs stood under.

Phipps and his partners were checking out an area about 60 miles north of Phipps’ ranch. Because he was using “a small map of a big area,” Phipps says, he believed they were on land his brother was leasing, in the Judith River Formation, which predates Hell Creek by at least ten million years. Later, Phipps discovered they were actually prospecting about ten miles north of where he thought they were, in the area that Phipps, like most of the locals, calls *Hell Creek*. The land was part of a 25,000-acre ranch owned by Mary Ann and Lige Murray.

The men picked their way through the sunburnt environment, the ground a mix of eroded clay, shale and sand. The topography is riven with canyons, ravines and gullies, interrupted by striated buttes, hunkered beneath the cloudless sky like silent messengers from the past. In the time of the dinosaurs, the Hell Creek area was subtropical, with a warm and humid climate. The swampy lowlands were rich with flowering plants, palmettos and ferns. At higher elevations were forests of shrubs and a variety of broad-leaved trees and conifers.

About 66 million years ago, an asteroid collided with the earth, leading to the extinction of the dinosaurs and much of the earth’s fauna and paving the way for the evolution of mammals and modern plants. Today, Hell Creek is stark, hot and seemingly deserted. The crew made its way around low-growing cactuses, through prickly and fragrant sage, over tufts of wild grasses. Phipps was riding a small, off-road motorcycle. The other two men were on foot.

Along the way they encountered an occasional set of sun-bleached bones, late of a grazing cow or other denizen: prairie dog, mule deer, antelope, coyote.

At about 11 a.m. Eatman spotted what looked like a piece of massive bone sticking out of a sandstone bank. Phipps approached the hillside for closer inspection. Right away, he says, “We knew we had a pelvis, possibly of a ceratopsian. And we knew we had the femur articulated into the pelvis—we could see the head of the femur.” What they didn’t know was whether any more of the creature was buried beneath the sand, or whether the rest of the dinosaur had already been washed away from erosion.

Phipps marked the spot carefully in his mind’s eye, and then he and the party headed home. The answers to these mysteries would have to wait for another time.

“I had 260 acres of hay to cut,” he says.

## Prehistoric Beasts of the Badlands

*From remarkable T. rex skeletons to a 66-million-year-old mummy, here are 10 celebrated fossils unearthed at Hell Creek (Map credit: Guilbert Gates; Research credit: Ginny Mohler)*

\*\*\*\*\*

Later that summer, after the hay was mowed, rolled and put up—feed for his cattle over the long winter—Phipps returned to the secret location, this time in the company of Lige Murray, the landowner.

Now Phipps found pieces of ceratops frill that had already weathered out of the bank. He could also see a line of vertebrae leading toward a skull. It seemed likely the dinosaur’s back end was buried in the hill—meaning there was a good chance it was still intact.

Murray gave his approval, and Phipps began the painstaking process of excavating, starting with a brush and a penknife. Meanwhile, business partners were gathered; contracts were signed. A \$150,000 loan was arranged. A road to the site was constructed.

Most of the arduous work of extraction was done by Phipps and O’Connor. “He doesn’t get around very good, but he’s got a great sense of humor,” Phipps says of his cousin, who helped ease the burden of their long, hot days. Eatman came up on weekends to help, as did a small cast of confidants and colleagues, who lent elbow grease and expertise. The find was kept secret throughout the entire process. “I didn’t even tell my family until just before we finished the excavation,” Phipps says.

After two weeks, Phipps had established a perimeter around the ceratopsian from head to tail. “We had basically all the bones to his body mapped out at that point,” he says. One day he was sitting in the cab of a backhoe he’d borrowed from his uncle, which he was using to remove the soil behind and around the specimen to prepare the area for the fossil’s removal.

“I went to dump my bucket—as usual I was watching very carefully,” Phipps recalls. “Suddenly I see these bone chips. The bones were easy to tell from the light-colored sand because they were dark in color, like dark chocolate.”

Phipps clambered down off the backhoe and began to sift the contents of the bucket by hand. That’s when he saw it: “There was a claw,” he says. “And it was a carnivore claw. It’s not any bone that goes with a ceratopsian.”

Phipps smiles at the memory. “Man, my hat went in the air,” he recalls. “And then I had to sit down and think, like, What’s going on? Here is this meat-eater in with this plant-eater, and obviously they weren’t friends. What are the odds of another dinosaur being there?”

It took Phipps and his partners three months to extract the specimens from the remote site. The sinewy Phipps lost 15 pounds in the process. Railroad ties were inserted beneath the Dueling Dinosaurs to preserve their position and integrity. Plaster jackets were placed around the exposed bone, a standard procedure among paleontologists. In the end there were four large sections and several smaller ones—all together they weighed nearly 20 tons. The section of earth containing the theropod alone was the size of a small car, weighing some 12,000 pounds.

Phipps enlisted the help of friends at CK Preparations, run by a preparer named Chris Morrow and the paleoartist Katie Busch. The multi-ton blocks were transported to a facility in northeastern Montana, where Phipps and his partners carefully removed the jackets. Next the specimens were “cleaned down to the outline of the bones, so you could see everything that was there, how each animal is arranged,” Phipps says. About 30 percent of the fossils were exposed, the bones shiny and dark.

In situ, Phipps explains, using a model he holds in his lap, the skeletons overlapped, with the tail of the theropod, which was about the size of a polar bear, resting beneath the back foot of the elephant-size ceratopsian. Both dinosaurs, buried in some 17 feet of sand, are fully articulated, meaning their skeletons are intact from nose to tail.

Phipps speculates that on the day in question, scores of millions of years ago, one or more *Nanotyrannuses* attacked the ceratopsian. A number of theropod teeth were found around the site, and at least two were embedded in what were the ceratopsian’s fleshy areas, one in the throat and one near the pelvis. Scientists believe that theropods shed teeth and quickly regrew them, like sharks. In this case, Phipps says, some of the theropod’s teeth are broken in half, indicating a violent fight.



A pitched battle ensued. "The ceratopsian is almost ready to die," Phipps says, picking up the narration and growing animated. "He's hot, he's tired, he's whipped, he's bleeding from all the bite marks in him. Just as the ceratopsian is about to tip over, he staggers around and steps on the nano's tail. Well that hurts, right? So the nano bites the ceratopsian's leg. And what's the ceratopsian gonna do? Instinctively he kicks the nano in the face. The nano's skull is actually cracked. When the ceratopsian caved in the side of the nano's head, the force slammed him into a loose sandbank—and the wall of sand came down," burying them both instantly.

"There's so much science in these dinosaurs!" Phipps exclaims, a rare show of emotion from a guy who likes to wear his black cowboy hat low on his brow. "There may be last meals, there may be eggs, there may be babies—we don't know."

\*\*\*\*\*

Well aware he'd found something special, Phipps set out to alert the world.

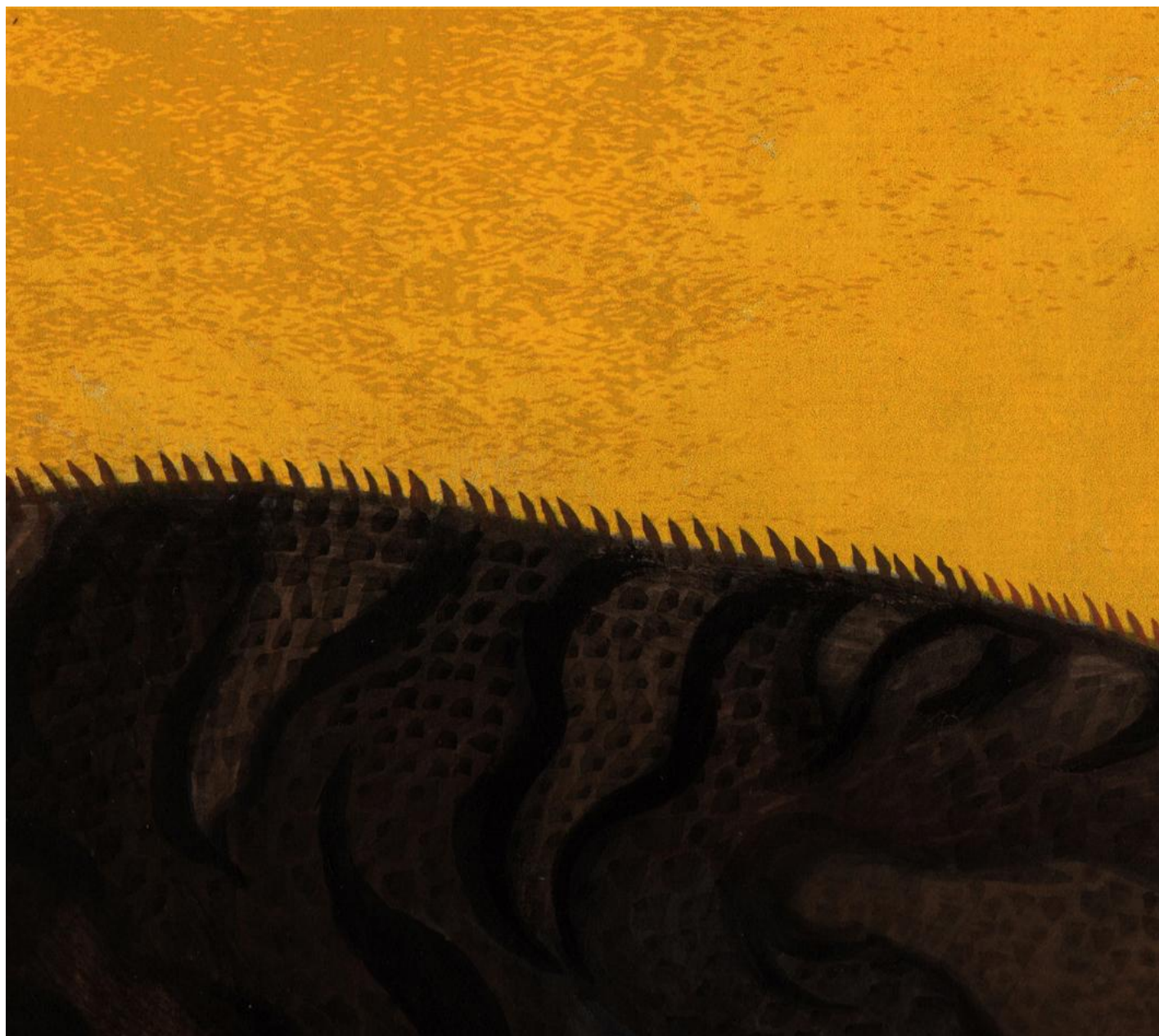
There was only one problem: Nobody would listen. "We called every major American museum and told them what we had," Phipps says. "But I was a nobody. A lot of them probably thought, Yeah, right. This guy is crazy. Nobody sent anyone to verify what we'd found."

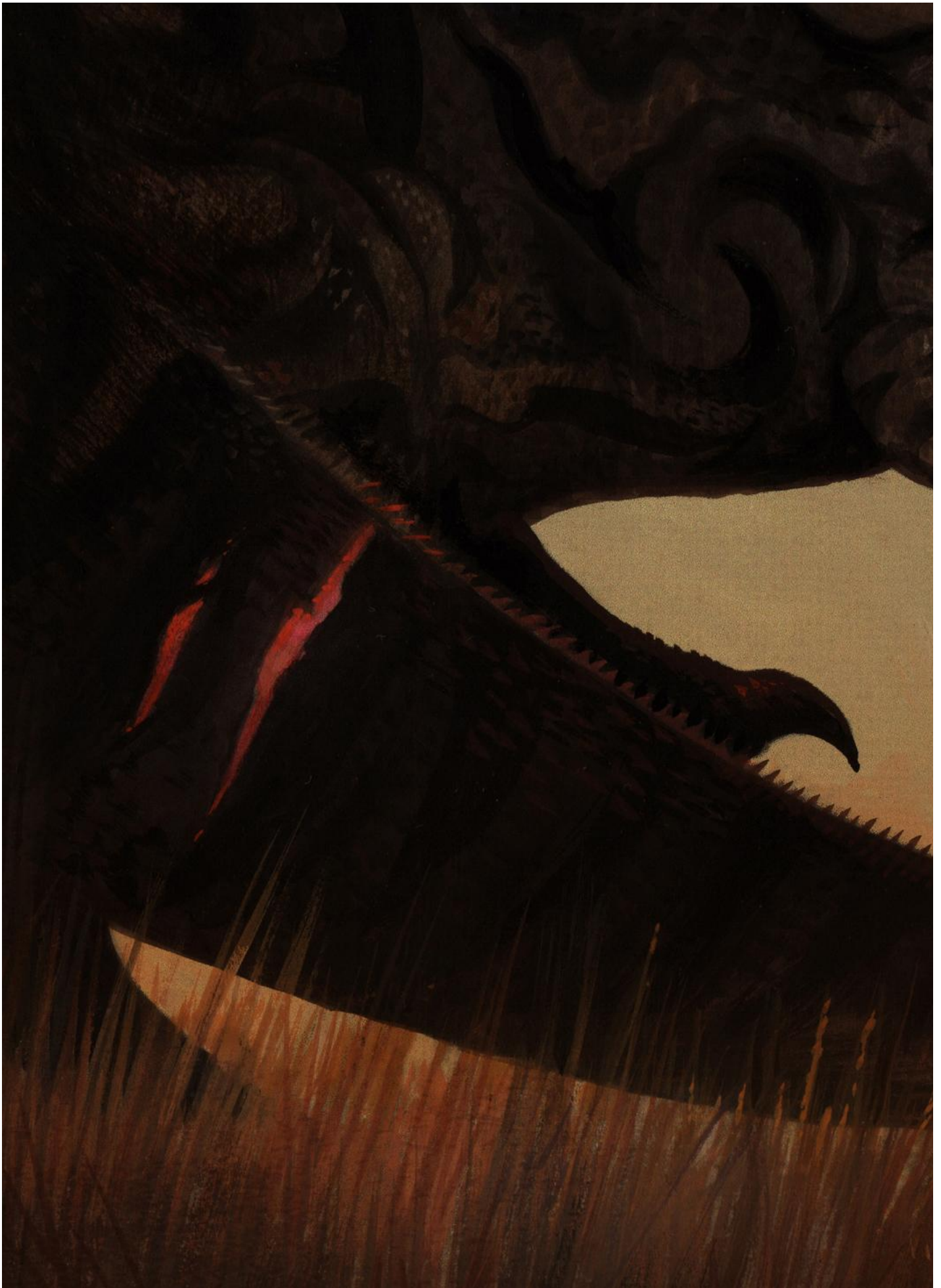
In time, though, word got out. Sampson, the Canadian paleontologist, then with the Denver Museum of Nature & Science, spent an hour with a group from the museum examining the fossils in a Quonset hut in eastern Montana. "We were blown away," Sampson says. "It's an amazing specimen."

Several other experts who've seen the Dueling Dinosaurs have come to the same conclusion. "It's exquisite," says Kirk Johnson, director of the Smithsonian's National Museum of Natural History. "It's one of the more beautiful fossils found in North America, ever." Tyler Lyson, a curator at the Denver Museum of Nature & Science, calls it a "spectacular discovery. Any museum would love to have it."

But not everyone agrees. "As far as I'm concerned, those specimens are scientifically useless," says Jack Horner, the pioneering and world-famous paleontologist who was the inspiration for the dinosaur expert played by Sam Neill in *Jurassic Park*. "Every single specimen collected by a commercial collector is useless, because they do not come with any of the data" that academically trained paleontologists are careful to collect, Horner says.

As time dragged on, Phipps tried everything he could think of to find a buyer for the Dueling Dinosaurs. "There were a few museums that were interested," he says. "We got close with one. I was negotiating with the director, and we actually came to an agreement on a price at one point. And then—nothing happened. They didn't get back to us. I don't know more than that."









This interpretation shows the bared teeth of the Nanotyrannus; several nano teeth were found embedded in the ceratopsian. (Illustration by Bill Mayer. Reference sou

\*\*\*\*\*

In 2013, after seven years in the lab of CK Preparations, the Dueling Dinosaurs were brought to auction at Bonhams, in New York City. It was valued by appraisers as high as \$9 million, according to Phipps.

To transport the specimens from Montana, custom crates had to be built for each section. A special semi-truck with an air-ride suspension was hired. Phipps and his party flew to New York.

Bonhams displayed the fossils in a large atrium room at its facility on Madison Avenue. The crowd at the event was a mix of “professorial baby boomers, wily prospectors, impeccably dressed collectors,” according to an account of the event published by the website Gizmodo. Phipps, the website reported, “wore a rancher’s vest, neckerchief and black cowboy hat.”

The bidding on the Dueling Dinosaurs lasted just 81 seconds. The only offer was \$5.5 million, which failed to meet the reserve. (Although the reserve price was not publicly announced, Phipps says it was closer to the appraised figure of around \$9 million.) “I just felt that they were worth probably twice what we were offered,” Phipps says. “We were expecting better, and we weren’t willing to take that.”

Perhaps reflecting the falling market for fossils, a number of other items failed to sell that day, including a triceratops skeleton, valued between \$700,000 and \$900,000, and a *Tyrannosaurus rex* valued at up to \$2.2 million.

Three years later, sitting in his office, there is regret in his voice. “The reason they went to auction was sort of out of frustration on my part. And then it was over before it started. It was disappointing that we couldn’t make a sale, but I guess I was half expecting it. My attitude is always the same: You don’t count your chickens before they hatch.”

Since then, the Dueling Dinosaurs have been housed in a storage facility at an undisclosed location in New York. They remain unstudied more than a decade after they were exhumed. In the meantime, Phipps has been regarded by some, however undeservedly, as a privateer devoted more to money than to science.

“I’ve never had any money, so money’s never been all that important to me,” he says. “But I’m not gonna just give them away. There were people that said I should just donate them. Well, no. I’ve got partners. I’ve put too much into the project. I was out there trying to make a living. It’s just like them academics that come out every summer between classes to look for fossils—they’re trying to make a living, too.”

Johnson, of the Smithsonian, says there is tremendous value in the Dueling Dinosaurs, despite some of the criticisms leveled against how the specimens were excavated. “There’s scientific value, there’s display value, there’s the novelty of the two of the dinosaurs being adjacent,” he says. But, he adds, “the price tag is sort of out of reach of most museums, unless somebody comes along who wants to buy it and donate it. And that hasn’t happened yet.” Johnson says he viewed the Dueling Dinosaurs in the company of a wealthy museum supporter whom he invited, hoping the man might take an interest in the fossil. It turned out the donor had already seen it—with an official from another museum. “There really aren’t that many buyers for something like this.”

The sale of Sue, the *T. rex*, for more than \$7 million, was a “high-water mark” for fossils, Johnson says, reflecting unprecedented donations by corporate sponsors like McDonald’s and Disney. “Sue changed everything, because ranchers went kind of nuts when they realized that dinosaurs weren’t just old bones, they were a source of money—and that screwed everything up.”

Tyler Lyson, of the Denver Museum, says it would unquestionably be “a shame if it ultimately doesn’t end up in a museum.” A Yale-trained paleontologist who grew up about three hours southeast of Phipps, along the Montana-North Dakota border, Lyson got his start hunting fossils on ranch land homesteaded by his mother’s family. Improbably, through a series of scholarships, his childhood hobby became his life’s work.

“There’s only a certain percentage of people on the planet who are interested in fossils to begin with,” Lyson says. “We all share that common bond, even though we might be interested for different reasons.”

\*\*\*\*\*



Phipps with his son Luke, who holds a fossil he found while prospecting with his father, in their basement workshop in Montana's far northeast. (Tom Fowlks)

At five o'clock, Phipps' wife rings the dinner bell. Phipps hoists himself out of the chair and gingerly climbs the stairs. Three months ago, he and his 12-year-old son were cutting a calf from the herd when Phipps' horse slipped and rolled over on top of him. Phipps broke his leg in several places; his foot was turned the wrong way. His son, thinking he was dead, began to administer CPR. Last week the screws were removed from the leg; it looks like he will recover full use. Of course, during his convalescence, an entire prospecting season was lost, along with any hope of any income from fossils—revenue that over the years has accounted for two-thirds of his annual income, he says.

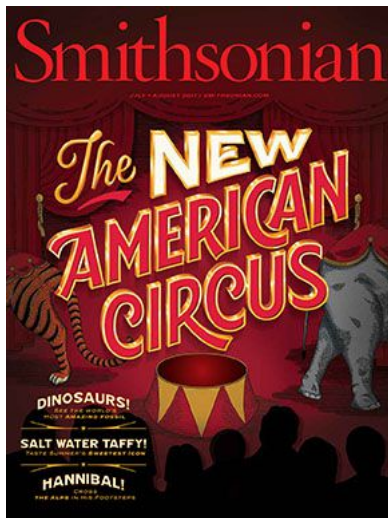
Besides her duties at the nearby one-room schoolhouse, Lisa Phipps has published two children's books. We are joined at the table by the couple's two boys, the younger of whom is 10. (Their eldest, a daughter, is in nursing school.) We eat a convivial supper of shredded chicken, potatoes and squash. The windows frame the rugged beauty of the surrounding countryside. The early evening sunlight creates an intimate glow. Beside my plate, in two little plastic bags, are a pair of triceratops teeth that Phipps has given me as a remembrance of my visit.

"The academics think what I'm doing is horrid," Phipps is saying. "They think I'm destroying fossils and selling them to the highest bidder. But that's not true," he says, anger rising in his voice. "I love fossils as much as they do. Granted, I'm self-taught. I'm just a cowpoke, I don't know everything. But I've had several paleontologists, even ones who don't exactly condone what I do, tell me I did a good job getting the fossils out. Maybe I didn't do the totally detailed scientific work like they do, but I don't have 30 college students under me working for nothing. When we found the Dueling Dinosaurs, I thought the academics would be big enough to bridge the gap. I figured they'd say, 'OK, this is a once in a lifetime find.'"

Someday, Phipps hopes, the divide with the academic community will be bridged and whatever valuable scientific data the Dueling Dinosaurs retain will be reaped. "The dinosaurs have been removed," he says. "If we left them in the hill, the weather would have destroyed them in the last eight or ten years since we dug them out. We did the best we could with what we had at our disposal. You gotta make up your own mind if what I do is wrong or not. But to me, it's not."

After my visit, not long before this article went to press, Phipps told me that there have been renewed overtures from a museum interested in buying the Dueling Dinosaurs. "There are some things happening, but I'm not at liberty to discuss it," he said. But he did suggest that sufficient funds haven't yet been raised. "It's like anything in business, I guess. You want a fair price. I'm gonna wait and see what happens. I'm not in any hurry."

In the meantime, Phipps says, "I've paid back my debts, and I'm trying to build the ranch up a little more, and to get more cattle. I'm leasing more ground now, too. I'm trying to focus on that, because fossils aren't a guarantee, you know?"



[Subscribe to Smithsonian magazine now for just \\$12](#)

This article is a selection from the July/August issue of Smithsonian magazine

[Buy](#)

About Mike Sager

Mike Sager is the author of a dozen books and a 2010 National Magazine Award winner. He's also the founder of the Sager Group, a publisher and movie distributor.



# North Carolina Museum of Natural Sciences **Perfecting Investments**

Summary of Work to Date



# **“A finished museum is a dead museum.”**

— Herbert Hutchinson Brimley, zoologist and first director of the North Carolina Museum of Natural Sciences







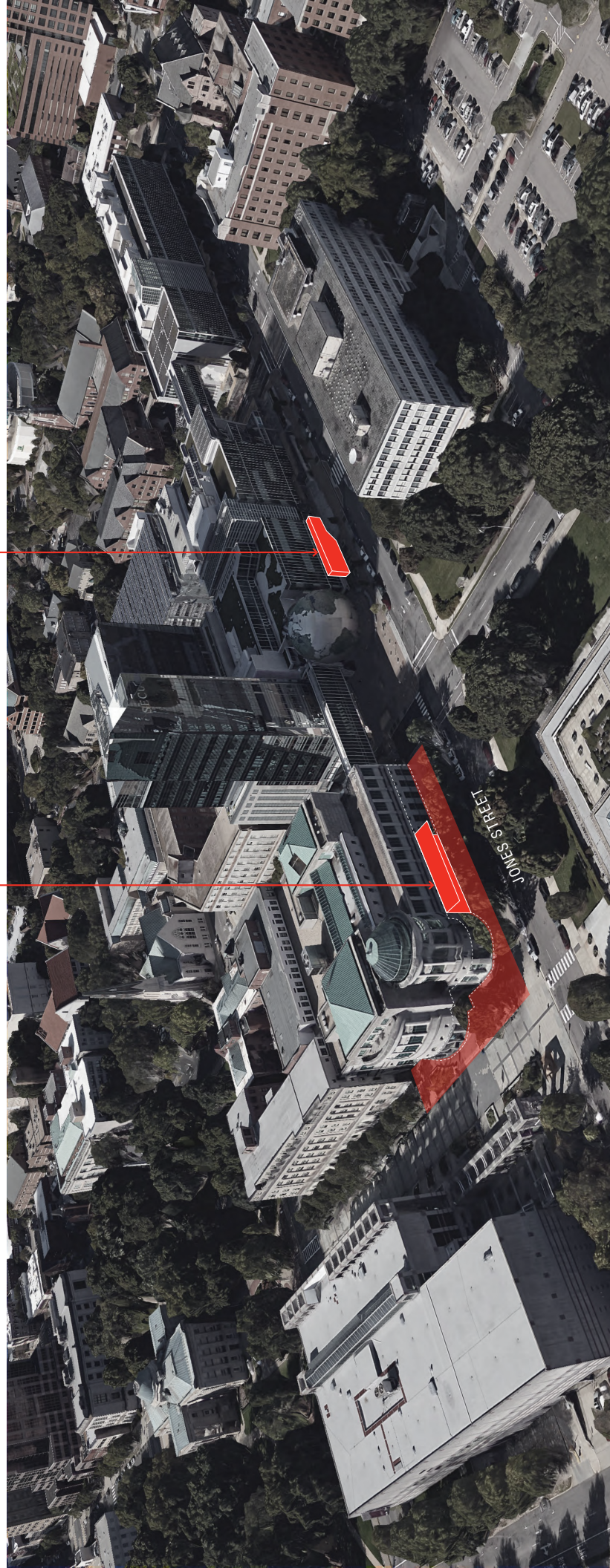
**“To illuminate the interdependence of nature and humanity** became the mission of the NC Museum of Natural Sciences. This statement declares the institution’s purpose and value. It is the compass for our plans and actions in distinctive case-for-support terms.”

—North Carolina Museum of Natural Sciences: Mission and Values (<http://naturalsciences.org/about/mission-values>)



**NEC:** 1ST FLOOR INTERIOR &  
EXTERIOR ENTRY EXPERIENCE

**NRC:** DINOLAB



**SCOPE OF WORK**

**Gensler**

**NATURE RESEARCH CENTER**  
DINOLAB





**DINOSAUR SPECIMENS IN SITU**



DINOSAUR SPECIMENS IN STORAGE





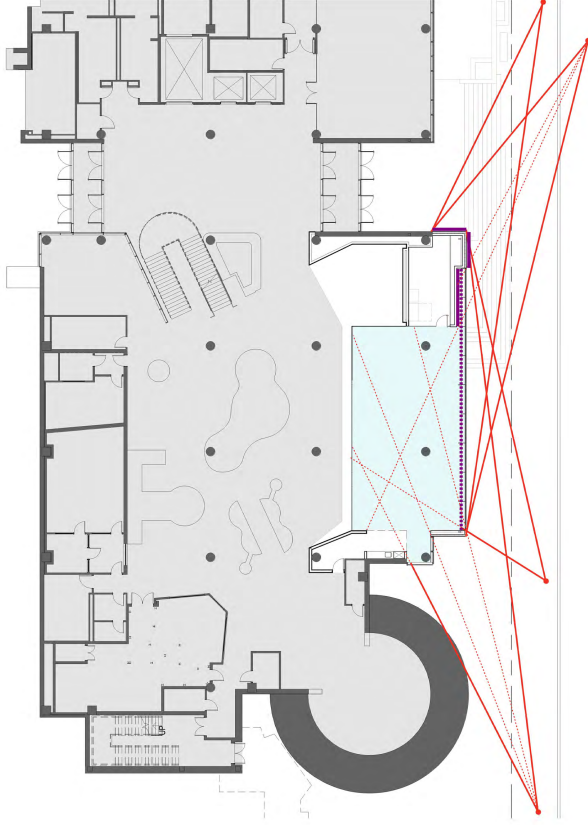




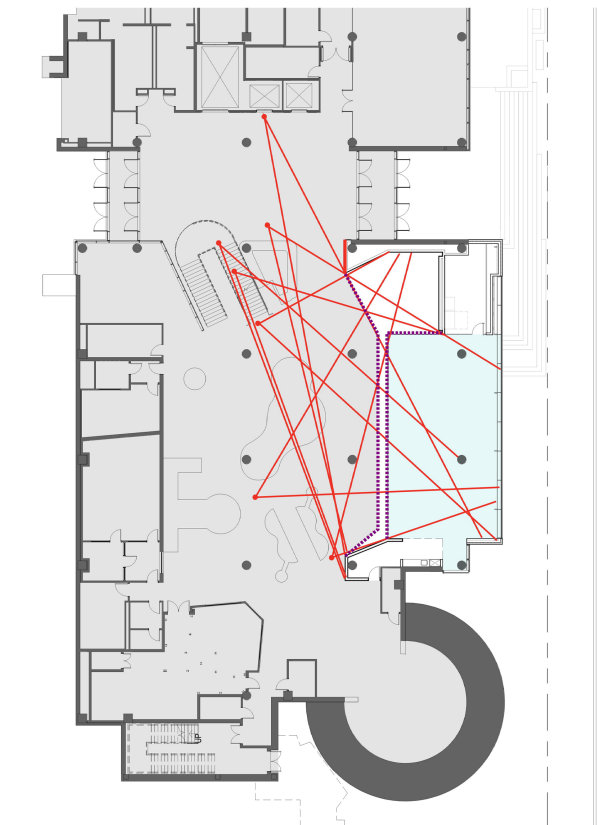




**Gensler**

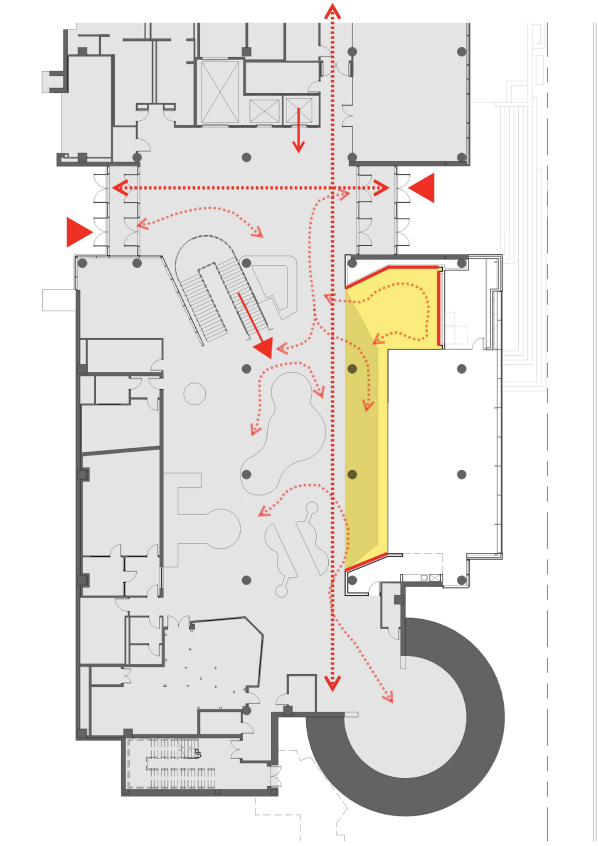


## EXTERIOR VISIBILITY & COMMUNITY ENGAGEMENT

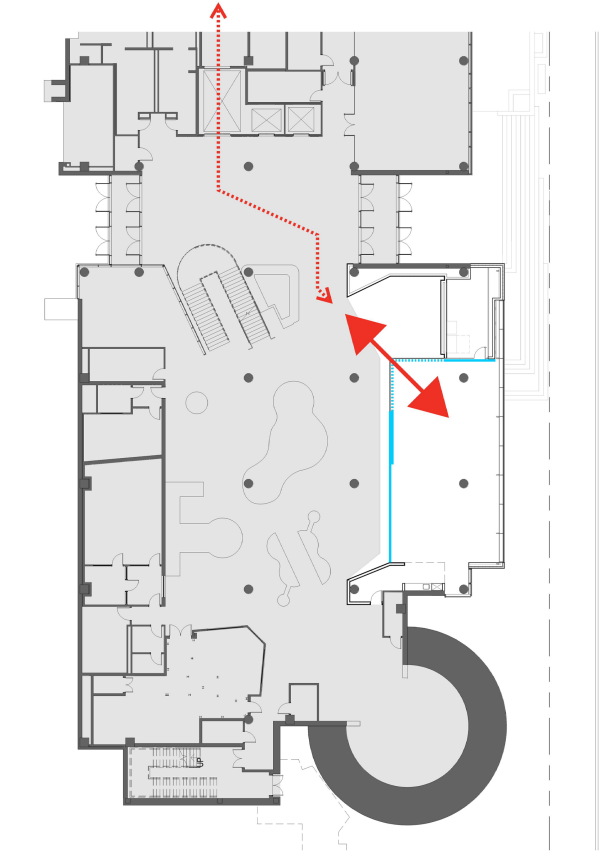


INTERIOR VISIBILITY





**VISITOR FLOW & ENGAGEMENT**



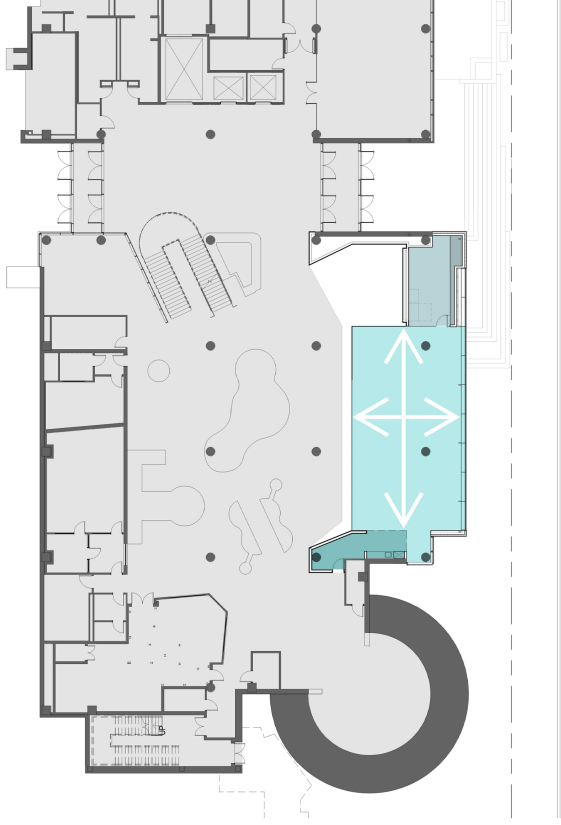
FOSSIL & EQUIPMENT ACCESS

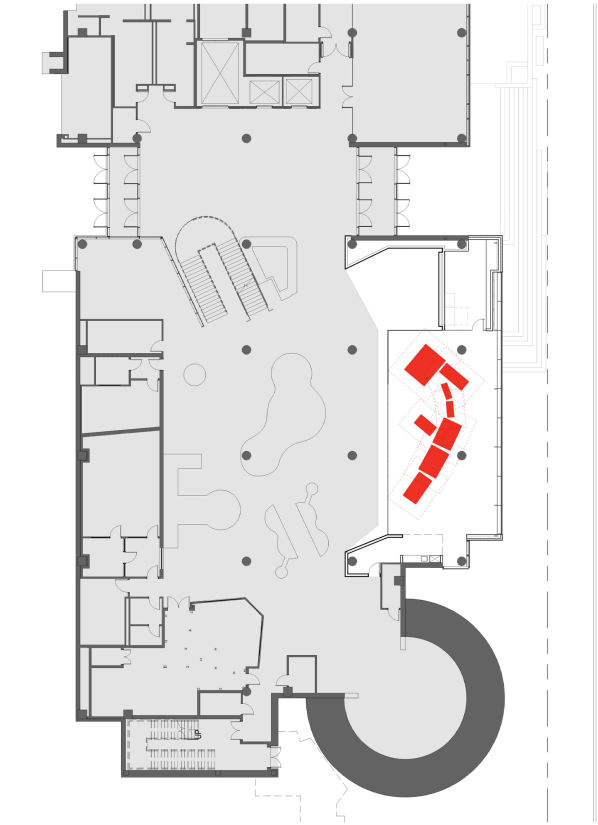




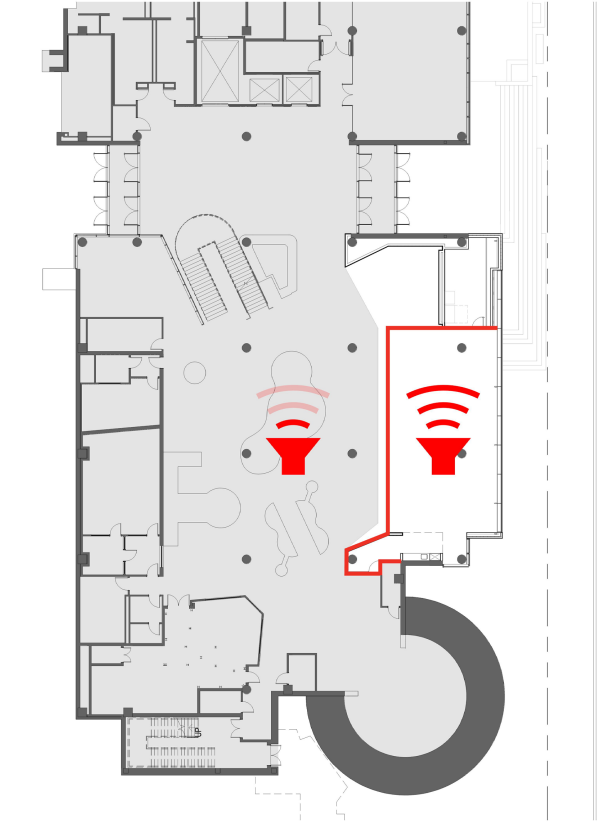
LAB FUNCTION & FLEXIBILITY

Gensler

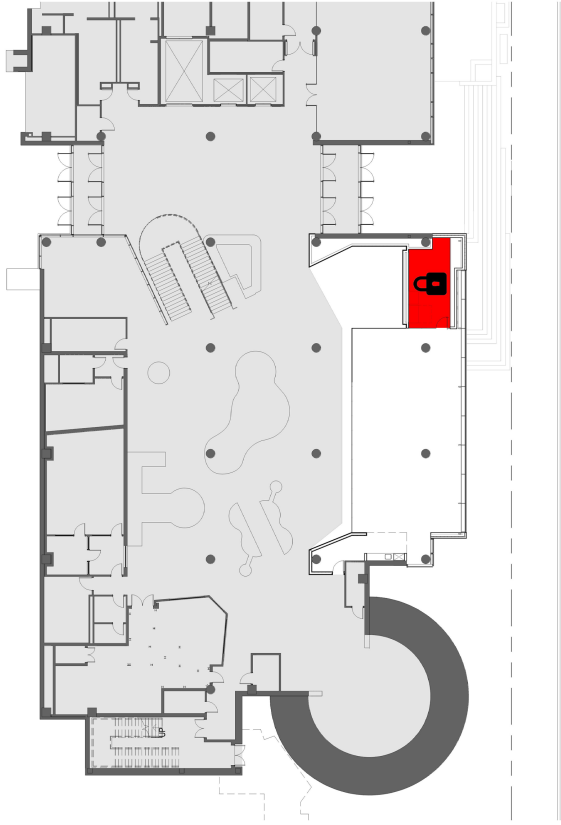




FOSSIL CONFIGURATION

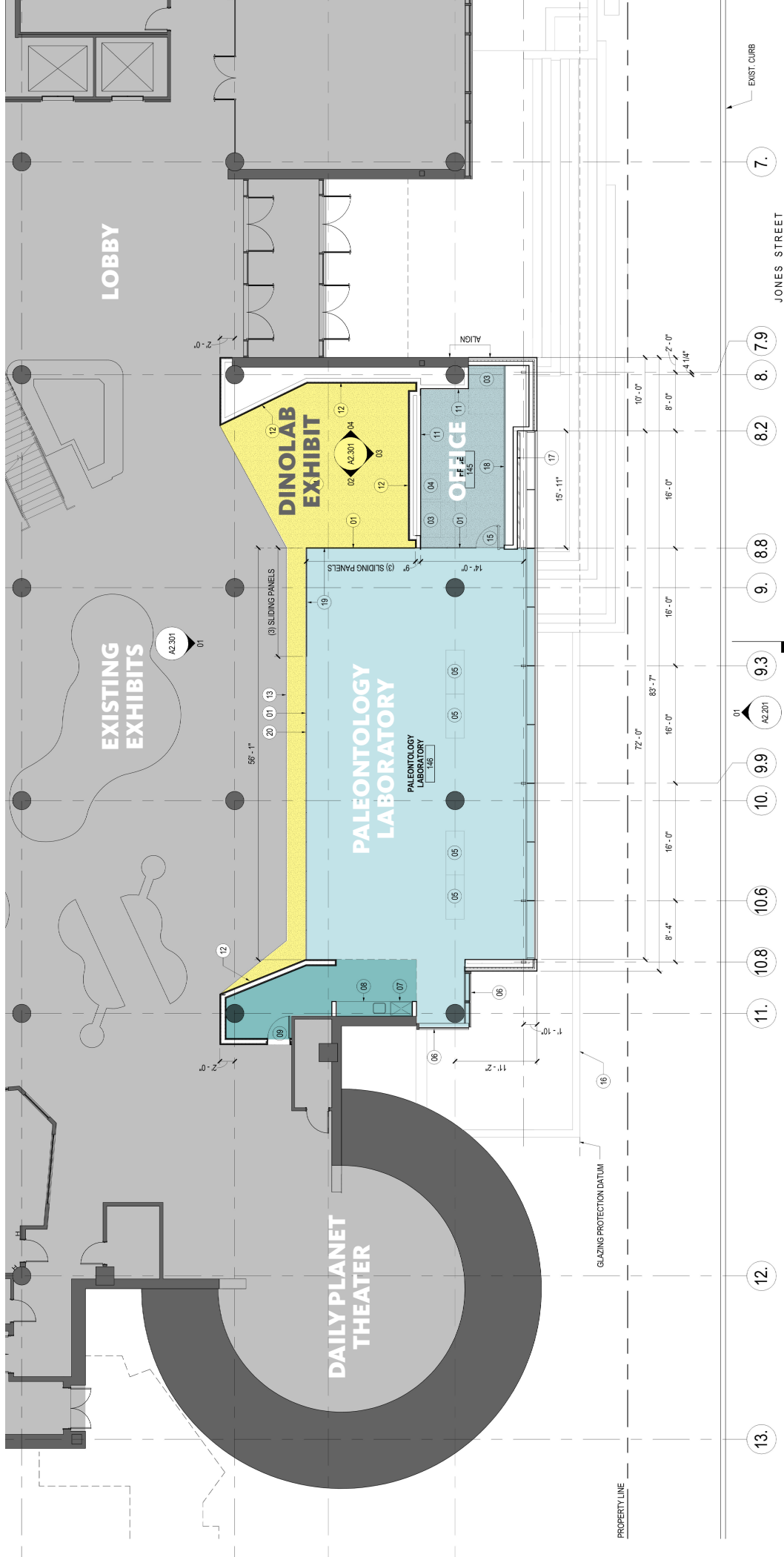


## ACOUSTIC ISOLATION



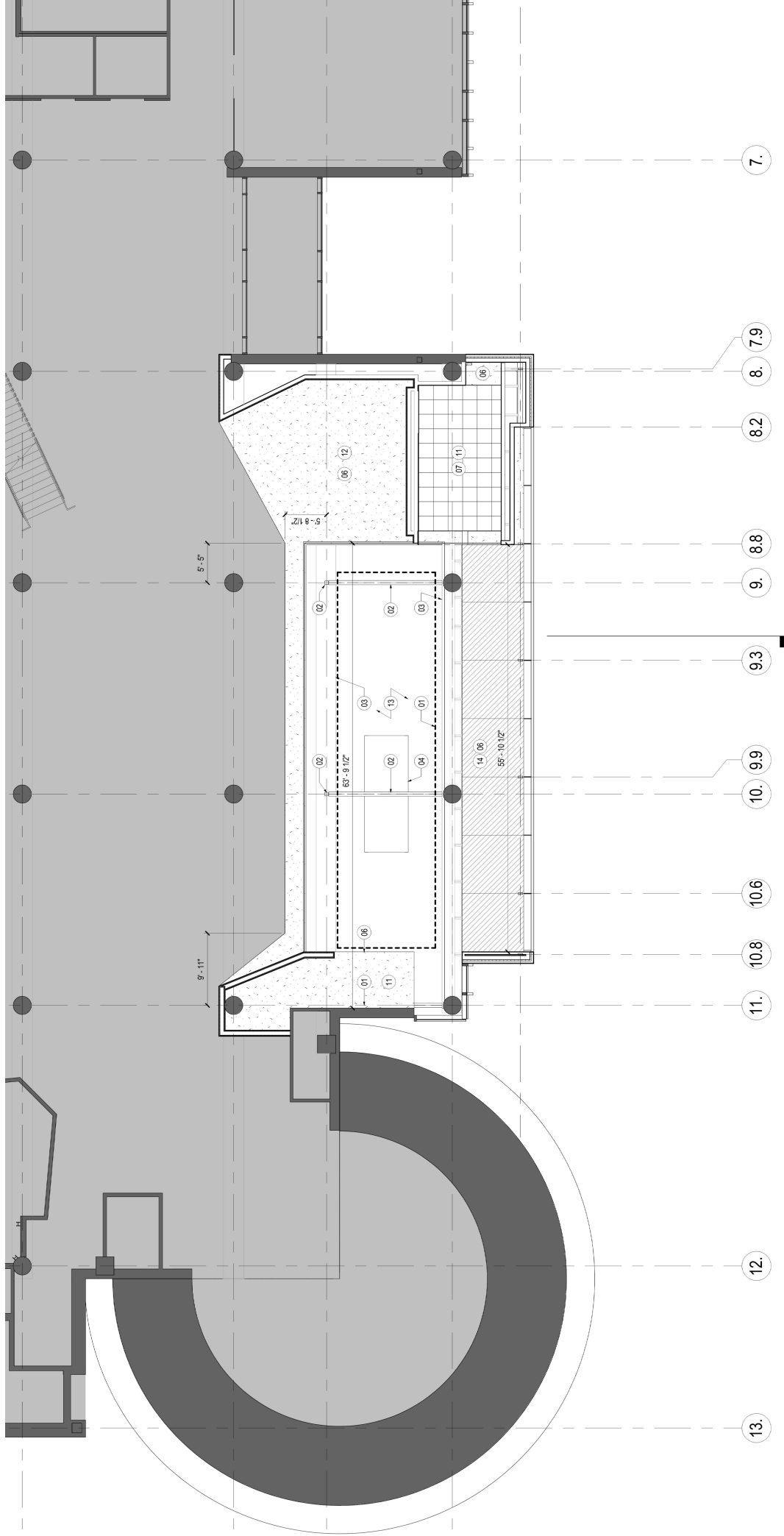
STAFF PRIVACY

Gensler



NRC DINOLAB 1st FLOOR PLAN

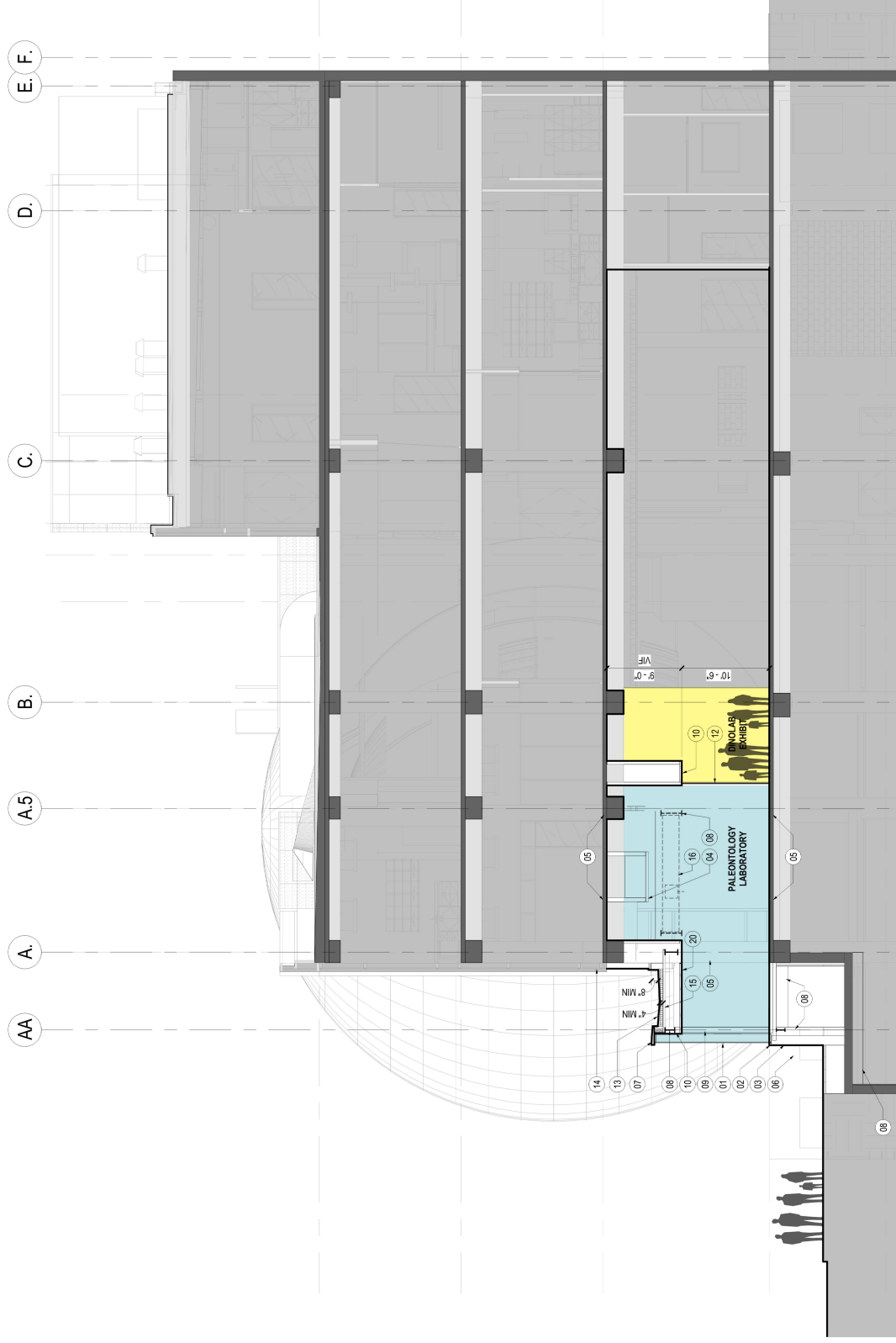




NRC DINOLAB 1st FLOOR REFLECTED CEILING PLAN







**NRC DINOLAB BUILDING SECTION**

DUELING DINOSAURS  
MEMORANDUM:  
NORTH CAROLINA  
MUSEUM OF  
NATURAL SCIENCES  
(NCMNS)

## Contents

<b>Topline Points .....</b>	<b>2</b>
<b>Summary of Findings.....</b>	<b>3</b>
<b>Calculating the Impact.....</b>	<b>5</b>
<b>Statement of Situation: Opportunity of the Dueling Dinosaurs.....</b>	<b>7</b>
Profiles of Similar Situations .....	8
The Field Museum of Natural History Case Study .....	12
Attendance Projections for NCMNS with the Dueling Dinosaurs.....	20
Profiles of the Subject Markets and Tourism Economies .....	22
Raleigh .....	22
Chicago .....	22
Rockford .....	23
North Carolina Tourism and Economic Impact of Tourism .....	25
2014 North Carolina Visitor Profile.....	25

## Memorandum

Monday, August 15, 2016

**Emlyn Koster**  
**Director**  
**North Carolina Museum of Natural Sciences**  
**Raleigh, North Carolina**

## Topline Points

---

- *The Dueling Dinosaurs will be a significant addition to the NCMNS, the NRC, and Wake County*
- *In addition to the fossil, the new space to offer viewing of the preparation and study of the fossil would be an investment*
- *It will be a new and active scientific mission that would be viewed “live” by large numbers of people from inside and outside of the building in a new “show window” research space*
- *The 4-year event would attract an additional 1,510,000 visitors from the Raleigh/Wake County area, throughout North Carolina and visitation from out of state including overseas*
- *The economic impact on Raleigh and Wake County of these new day and overnight visitors from outside the Raleigh area and out of state is estimated to be \$187 million over the 4-years*
- *Tourism is already a major Wake County industry, employing more than 20,000 people with an annual economic impact of \$1.8 billion – second highest county impact in NC*
- *It is also likely that the increased attendance would result in increased gift shop and food service sales, facility rental activities, 3D movie ticket sales, special exhibition entries, memberships in and donations to the Friends of the Museum, and an increase in the general awareness of the museum*
- *This has been done before: Chicago’s Field Museum did an excellent job of securing major donations and creating substantial economic impact with its tyrannosaur “Sue”*
- *At the Field Museum the 3-year attendance gain was 2 million, membership revenues grew almost five-fold and admissions and food and gift revenues almost trebled*
- *NCMNS may increase revenue at least 50% to 100% given the rise in attendance and its composition -out-of-town visitors spend more per capita*



- *16 years later, Sue is still a regular feature in Chicago and Illinois' tourism campaigns – in a metro area five times Raleigh's size with many more iconic assets*
- *Since Sue, overall yearly revenues and fundraising at the Field Museum have almost doubled regardless of attendance. The Field used Sue to completely reposition with respect to all sources of revenue - NCMNS may also have a positioning "reset" benefit*
- *Given the NCMNS' 16-year success of increasing and attracting broad audiences, the hospitality industry in Wake County and particularly downtown Raleigh should expect to enjoy a return on the investment (ROI) in the Dueling Dinosaurs from significant growth in visitor spending*

## Summary of Findings

---

*This document is the result of a collaboration between Informal Learning Experiences, Inc. of Denver (ILE) and Market & Feasibility Advisors, LLC of Chicago/Austin (MFA)*

The Dueling Dinosaurs will be a significant addition to the North Carolina Museum of Natural Sciences (NCMNS), the Nature Research Center (NRC), and Wake County, especially with the dedicated preparation laboratory being designed by Gensler.

In addition to the fossil, a major investment would be the cost of that new space to offer viewing from the museum's exterior of the preparation and study of the Dueling Dinosaurs. The result will be a new and active scientific mission that would be viewed "live" by large numbers of people, from both within the NRC – an area within the NCMNS – and the exterior of the museum.

We expect that the Dueling Dinosaurs four-year long event would attract visitors from the Raleigh/Wake County area, throughout North Carolina and visitation from out of state including overseas. Visitors' interaction with the scientists in the Dueling Dinosaurs lab will greatly enhance the NRC experience.

Over the four-year public preparation of the artifacts and the opening of the new exhibit, total *additional* attendance at the NCMNS is expected to increase by approximately 1,510,000 visitors. The economic impact on Raleigh and Wake County of these new day and overnight visitors from outside the Raleigh area and out of state is \$187 million over the four years.

Tourism is a strong industry in Wake County, employing more than 20,000 people with an annual economic impact of \$1.8 billion. Wake County trails only one other North Carolina county in tourism impact. Adding the Dueling Dinosaurs to the tourism attractions would enhance the county's tourism landscape, specifically downtown. The Dueling Dinosaurs would be a "branded" addition exclusively to the downtown area, where Wake's tourism product is concentrated.

The Dueling Dinosaurs is a truly unique paleontological experience because of the remarkably preserved interactions between two individuals of distinctly different species. This particular preservation is fascinating because it is both a biological interaction and a sedimentary geological process that preserved them as in real life. Thus, the publicly accessible investigation of the specimens will be engaging on two levels – connecting a paleontological inquiry with both geological and animal behavior questions. It will also link the

museum's study of past life with its rich examinations of living organisms and demonstrate that the two approaches to biology are closely related.

The cost to purchase and study the Dueling Dinosaurs may well be at least partially covered by sponsorships and other private investments, depending on effective branding and promotion of this unique specimen. Chicago's Field Museum did an excellent job of securing major donations for its tyrannosaur which was branded, or named, Sue. We anticipate that the NCMNS could generate substantial funding from public and private organizations in Raleigh, Wake County, and North Carolina.

It is likely that the increased audience would result in increased gift shop and cafeteria sales, facility rental activities, 3D movie ticket sales, special exhibition entries, memberships in and donations to the Friends of the Museum, and an increase in the general awareness of the museum.

At the Field Museum, the impact was that from 2000, the year Sue opened, to 2003, when attendance at the Field returned to normal levels, membership revenues grew almost five-fold and admissions and food and gift revenues almost trebled. Probably the most interesting consequence was that overall revenues at the Field Museum which include all forms of fundraising have almost doubled in the years since Sue debuted – regardless of attendance. In other words, the museum itself was completely repositioned with respect to all sources of revenue.

The NCMNS may therefor benefit financially during the Dueling Dinosaurs “era” from increased food and gift sales and increased memberships. And it may also benefit from the positioning “reset” that has boosted the Field Museum's overall revenue picture since the year 2000. However, as there is no general admission fee to the NCMNS, no gain is expected in that category.

The actual increased impact on membership revenues – almost five-fold for the Field Museum – can be calculated with more precision in a separate analysis that focuses on museum membership pricing and market penetration for free museums but it would be difficult to image that it would not at least treble for the NCMNS. Part of the reason for the near trebling of revenues in food and gift revenue at the Field was due to a revamping of those systems in anticipation of Sue. As with membership, a more detailed study of the increased food and gift revenue potential at NCMNS should be done by experts. That said, we would anticipate a revenue increase of at least 50% to 100% given the rise in attendance and its composition (more visitors from out-of-town – they spend more per capita).

Given the NCMNS' 16-year track record of attracting broad audiences, the hospitality industry in Wake County and particularly downtown Raleigh should expect to enjoy a return on investment (RO) on the Dueling Dinosaurs from significant growth in visitor spending.

A challenge to the overall marketing and promotion of the Dueling Dinosaurs is their actual physical size. Clearly they are not Sue or *Acrocanthosaurus*, the magnificent specimen in the Terror of the South Gallery in the Nature Exploration Center at the NCMNS. That specimen contributed significantly to the attendance jump when the Nature Experience Center opened. Indeed, they are closer to the tyrannosaur and ceratopsian which are heavily promoted at another museum, the Burpee Museum of Natural History in Rockford, IL (ninety miles west of Chicago). (Those two dinosaurs have been branded or named “Jane and Homer.”) This requires that NCMNS do a very careful job of describing the Dueling Dinosaurs in advance promotion so visitors are not surprised by their modest size, but rather are enthusiastic and stimulated by the unique preservation and insights into dinosaur behavior and the fact that they were captured in this interactive position in what amounts to a geological “crime scene.” The public will become aware that the NCMNS is conducting new frontier research on this specimen unlike what is done in any other US museum.

## Calculating the Impact

Beginning with the first year of exhibition and over the next four years, the consultants project the Dueling Dinosaurs exhibit will increase NCMNS annual attendance, which was 944,000 in 2015, by between 282,540 to 377,600, to a new total of 1.2 to 1.3 million. This projection is based on the NCMNS's high attendance count when the new building opened in 2012 and the response of the Chicago market when the Field Museum opened its tyrannosaur exhibit in 2000 (40% increase cumulatively over four years of Sue impact). During the four years after the Dueling Dinosaurs opens at NCMNS, the total additional attendance is expected to be 1,130,000 (if the museum reaches the NCMNS 2012 numbers again) or 1,510,000 (if it experiences growth similar to what the Field Museum experienced). We have greater confidence in the higher number as it reflects a good case study. NCMNS already demonstrated in 2012 that it can reach the 1.2 million number.

A caveat that we would like to add is that Wake County's population has nearly doubled in the last two decades. These numbers will be proportionally higher when the Dueling Dinosaurs exhibit opens if the population growth continues.

This attendance increase is not likely to be constant over the four years including the initial year of the exhibit, as it is likely there will be peaks for local market visitors in the first and third years with later peaks for distant market visitors in years two and four. These attendance predictions are assuming the unveiling of the Dueling Dinosaurs will be in the second to third year.

In the fifth year there may still be some impact, but, by then, the Dueling Dinosaurs will be seen by both local and distant markets as simply a part of the collection and not likely to spur special visits.

The visitor origin of this new attendance, discussed above, is of paramount importance to elements calculated into economic impact. Only visitation from *beyond* the local market counts towards economic impact. The three origin categories for the increased attendance and the anticipated percent and numerical capture of the 1,510,000 million over four years are:

1. The local Raleigh/Wake County market – 40% or 604,000,
2. Beyond Raleigh but still within North Carolina – 35% or 528,000, and
3. From outside North Carolina – 25% or 377,000.

While the first category is likely to benefit downtown Raleigh, only the second two categories count towards economic impact for Raleigh/Wake County.

A further distinction of importance is whether the new visitors are day visitors or overnight visitors to Raleigh/Wake County. The breakdown for the two key origin markets is shown below:

<b>New Visitation From Impact Markets</b>		
<b>Origin Market Category</b>	<b>Visitor Category</b>	
	<b>Day</b>	<b>Overnight</b>
Within NC /Outside Wake County	422,912	105,728
Outside North Carolina	188,800	188,800
<b>Total</b>	<b>611,712</b>	<b>294,528</b>
<b>Source: MFA</b>		

The impact is greater for overnight visitors than day visitors. We estimate that a visit to the Dueling Dinosaurs by day visitors will result in economic impact per visitor of \$105 while the comparable figure for overnight visitors is \$419 per visitor (all figures are based on 2016 dollars). The impact will not be felt directly as admissions revenue at the NC Museum of Natural Sciences as it is a free institution, although there will be substantial collateral benefits, as mentioned above. Almost all of the impact will be felt by other local Raleigh/Wake County attractions, retailers, restaurants, hotels, gas stations, and other businesses.

Assuming 611,712 day visitors and 294,528 overnight visitors from beyond the museum's market area, the expected economic impact, over four years, will be \$64 million from the day visitor market and \$123 million from the overnight visitor market for a total economic impact over four years of approximately \$187 million.

As with the visitation, we do not expect this impact to remain constant. It is likely to peak in the third or fourth year with the first year being the lightest as it can take some time for word to get out and people from more distant places to plan trips.

Key points about the potential for economic impact at the museum:

- The museum is well located in the center of Raleigh among other cultural attractions, including the State Capitol and other museums. The setting already helps it draw visitors as there are a number of attractions to see on one visit. The "time-value" or length of stay once you come from out-of-town to visit the museum is higher, thanks to these other cultural attractions.
- Seldom is a major museum like this situated as well in an urban downtown as the NCMNS. It is within a short walk of restaurants, shops, and hotels and it will be easy for visitors to the Dueling Dinosaurs to find places to spend money and create economic impact.
- During the four-year period we measured for the Dueling Dinosaurs, the other nearby attractions will enjoy some benefits from people who will be drawn to the Dueling Dinosaurs but who will also visit their establishments. Nevertheless, we give the Dueling Dinosaurs full credit for the visitor spending by people coming to town as it can be considered the "magnet" that drew them to town.
- There are also meeting facilities near the museum for which an evening reception with the Dueling Dinosaurs may be a "closer" for booking meetings in the years ahead.

In short, the museum setting in a rich, urban environment like downtown Raleigh improves the likelihood that these impacts will be realized.



## **Statement of Situation: Opportunity of the Dueling Dinosaurs**

As we look at the potential for the Dueling Dinosaurs to be a significant part of the immediate future of the NCMNS, it is useful to quickly examine the role of so-called “iconic” specimens in the natural history museum world.

It is very common for natural history museums to feature specimens of organisms that are both visually dramatic and often environmentally or evolutionarily significant. Size often is an important element here, as is representation of an exotic or dramatic environment. Thus, most of the featured specimens are dinosaurs, huge marine mammals or sharks, or large African or Asian mammals. Marketing programs love these opportunities; educational initiatives often use them as entry points into the much larger natural world as presented by a given museum.

Hence, the potential for the Dueling Dinosaurs to be a “front-page” aspect of the NCMNS is clear.



***The Dueling Dinosaurs specimen in advance of full preparation.***



***This photo shows the tyrannosaur's skull.***

The Dueling Dinosaurs offers the NCMNS a remarkable paleontological research and investigation opportunity. Unlike the vast majority of dinosaurs on exhibit around the world, here is a situation where two virtually complete animals of different species are caught in a “real-life” situation. They are physically and antagonistically engaged with good evidence already identified. They fit very well into the educational mission of the Nature Research Center, clearly encouraging questions (and answers) about actual engagement as well as the remarkable situation which enabled them to be preserved as exceptional fossils. Right now it is not possible to predict what new facts about dinosaurs may be encountered, but there is reason to expect some important discoveries about the lives (and deaths) of dinosaurs. Thus, the preparation laboratory that will likely devote a year or two to cleaning, preserving, and preparing the specimens for exhibition will be a focal point of the presentation of modern paleontological investigations. None of the “iconic” specimens that we have encountered in our research have offered this remarkable array of opportunities.

This will be a significant addition to the already substantial array of educational opportunities available at the NCMNS. Our additional investigation below looks at current economic and attendance data, the community circumstances, and the experiences of other museums that have used “iconic” dinosaurs as part of their marketing and branding. We have also sought other natural history materials to compare with, but there are very few. In essence, these are attempts to use dinosaur specimens as magnets, as well as large whales and some large African mammals.

## Profiles of Similar Situations

We have identified several similar situations where museums have presented presumably iconic fossils like the Dueling Dinosaurs although this situation is uncommon and unusual in recent history. The three situations are: a tyrannosaurus branded with the name “Sue” that opened at the Field Museum of Natural History in Chicago in 2000; a pair of juvenile dinosaurs branded with the names “Jane and Homer” that opened at a small museum, the Burpee Museum of Natural History, in Rockford, Illinois; and the recent

opening of an as yet unnamed titanosaur at the American Museum of Natural History in New York City on Central Park West.

Basic comparative market data for five-mile rings around each of Chicago, Rockford and Raleigh are shown in Table 1 below. All three are center city locations proximate to other museums and community attractions. By all statistical measures, the Field Museum, which is located close to downtown Chicago on Lake Michigan, as part of a collection of three major museums referred to as the Museum Campus, is in a much larger, more complex, and stable market than both the Burpee Museum and the NCMNS. The last line of statistics shown in Table 1 illustrates that the Field Museum is in the heart of a large daytime working population with the ratio of daytime workers to residents at a high 1.43 to 1. Museums with a high ratio like that tend to have stronger connections to the local market. The drawback for the Field Museum is that it stands apart from downtown (a 15-minute walk through parkland) with its own parking lot. Most visitors come to the museum and then leave without ever interacting with the downtown; therefore, they are not spending money downtown. If visitors aren't spending money downtown, the economic impact will be affected.

The Burpee Museum is near the heart of Rockford, a small city 90 miles from Chicago whose population and urban development trail off quickly just beyond the five-mile ring. It is also a city that has struggled for several decades with a shrinking economy. The ratio of daytime employees to residents is less than half that of the Field Museum. Similarly, the Burpee is off the downtown Rockford street grid and just outside the heart of that downtown.

By comparison to both the Field and the Burpee museums, the NCMNS is located in the heart of Raleigh near many other attractions, including the State Capitol complex, in a market that has been growing at a fast pace in population, physical scale, and economic complexity for decades. The ratio of daytime employees to residents is almost 1:1 for the NCMNS but it is a different situation than in the other two cities. Downtown Raleigh continues to grow in both employment and residents, with most of the newcomers possessing the educational backgrounds that suggests they will have future interactions with the museum. This is further supported by the location of the museum right in the heart of the downtown street grid.

The museum's central location encourages a two-way interaction by museum visitors between the museum and surrounding attractions and businesses and therefore heightens the potential for economic impact. For example, out-of-town visitors to the NCMNS can comfortably walk to the museum from many different hotel choices.

<b>Table 1. 5-Mile Economic Data Around Three Museums</b>			
<b>Museum</b>	<b>Field Museum of Natural History</b>	<b>Burpee Museum of Natural History</b>	<b>NC Museum of Natural Sciences</b>
City	Chicago	Rockford	Raleigh
2015 Population	652,378	167,524	205,443
2015 Households	299,407	66,226	78,901
2015 Median Disposable Income	\$41,306	\$30,346	\$34,406
2015 Per Capita Income	\$39,406	\$20,761	\$25,743
Total Businesses:	48,253	7,240	13,685
Total Employees:	935,500	107,519	201,203
Total Residential Population:	652,378	167,524	205,443
Employee/Residential Population Ratio:	1.43:1	0.64:1	0.98:1
<i>Source: ESRI and MFA</i>			

While the titanosaur at the American Museum of Natural History (AMNH) in Manhattan is too new for inclusion in this survey, it is valuable to note that the AMNH and the NCMNS have similar urban locations that while not built for maximum economic impact, are fortuitously located to amplify it.



## **Sue and the Field Museum of Natural History**

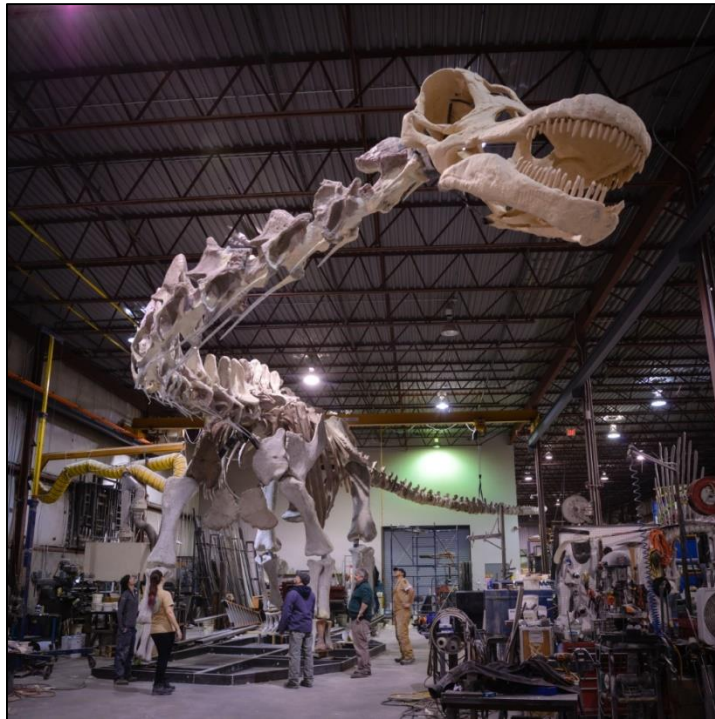


*Sue in the Great Hall of the Field Museum of Natural Sciences*



*Sue, at the Field Museum of Natural History, viewed from an upper floor*  
**The Titanosaur and the American Museum of Natural History (AMNH)**





*AMNH's titanosaur prior to exhibition opening.*



*The titanosaur peering out the exhibit gallery entry on opening day.  
Jane, Homer and the Burpee Museum of Natural History*



*Jane, the tyrannosaurus*



*The skull of Homer, the ceratopsian in the lab*

## The Field Museum of Natural History Case Study

Of the similar situations, we believe that the Field Museum's is the most similar to that of the NCMNS. While Raleigh is a smaller market area, it is growing and has population characteristics such as well-educated individuals compared to US norms that make it well-suited for an educational attraction like the NCMNS. Both Raleigh and Chicago have growing tourism sectors, museums located in museum clusters, and urban downtown settings although, as previously noted, Raleigh's is a likely better setting for economic impact.

There are many reasons why visitors come to Chicago and Cook County. It is a major business and meetings center. But it is in the leisure sector that Chicago has seen its strongest growth in recent decades and the Field Museum is one of many contributors to the leisure time product drawing this growing visitation.

Similarly, Raleigh and Wake County's functions as a Capitol city, research center, and collegiate center have long been the source of its visitor growth, but that is changing. The state's number two county for tourism expenditures is drawing more leisure visitation and, as one of a smaller circle of leisure attractions, the NCMNS is a more significant part of the leisure time product in Raleigh and Wake County than the Field Museum is in Chicago.

The cost to the Field Museum for Sue and its value can be calculated in a several ways. Table 2 below shows the direct costs and grants and sponsorship revenues from Sue for 2000 to 2003, the first three years the exhibit was open, without regard to increased membership sales, admissions revenue, and business enterprise sales. A total of \$10.1 million in grants and sponsorship revenue was generated while related costs totaled \$16.6 million. This results in a loss of approximately \$6.5 million – on the basis of fundraising alone.

However, with the arrival of Sue, revenues at the museum rose significantly. In 1990 and 1995 operating revenue at the Field Museum was \$24 million and \$28 million, respectively. The increase was the result of pricing and inflation rather than any notable increase in attendance. In 1999, the year prior to Sue's opening but with some Sue related displays open, revenue grew to \$43 million. For 2000, 2001, and 2002, revenue was significantly higher at \$60, \$50.9 and \$52.9 million -- largely attributable to the arrival of Sue in 2000.

Even as attendance declined after the peak in 2000, and down to the 70-year-typical level of 1.3 million (see attendance discussion below), revenue stayed high. Following Sue through 2016, revenue at the Field Museum has been in the \$50 to \$60 million range and mostly in the \$60-plus millions. It would appear that The Field Museum took the opportunity of Sue to revamp its revenue generating apparatus completely and reset its yield, by category, at a higher level that it has successfully maintained since the arrival of Sue. Interestingly, this growth is not connected to actual attendance. It could be said that since Sue, the Field became the institution that people and organizations wanted to support. As always seems to be the case, it is critical to point out that expenses rose to meet the new higher revenues too.

The chart below illustrates some of the key lines within the overall revenue category. For the three years of 2000 to 2003, membership revenue averaged \$2.4 million in contrast to the half a million in 1995. Admissions averages \$11.5 million in contrast to \$3.0 million in 1995 and business enterprise (food and gifts) \$12.5 average over the three years of Sue compared to \$4.2 for 1995.

The year 1995 is used as that is the closest "normal" year to 1999, when the Sue era began at Field for which we could obtain good figures.

The simple mathematical takeaway from this data is that membership increased almost five-fold and regular admissions and business enterprise revenue almost trebled.

<b>Field Museum Gross Revenue Comparisons Between Years 1995 and 2003</b>								
	1995	1999	2000	2001	2002	2003	Total 2000 to 2003	Average 2000 to 2003
<b>Memberships</b>	\$ 540,526	\$ 1,062,427	\$ 1,850,564	\$ 1,760,239	\$ 1,936,050	\$ 1,685,917	\$ 7,232,770	\$ 2,410,923
<b>Admissions</b>	\$ 3,007,819	\$ 5,536,156	\$ 11,290,733	\$ 8,062,409	\$ 8,004,612	\$ 7,290,579	\$ 34,648,333	\$ 11,549,444
<b>Business Enterprise</b>	\$ 4,248,864	\$ 5,329,165	\$ 10,391,058	\$ 8,725,272	\$ 9,755,322	\$ 8,636,046	\$ 37,507,698	\$ 12,502,566
<b>Total</b>	\$ 7,797,209	\$ 11,927,748	\$ 23,532,355	\$ 18,547,920	\$ 19,695,984	\$ 17,612,542	\$ 79,388,801	\$ 26,462,934

Source: Field Museum

Several tables of note are on the following pages. Table 2 provides the income and expenses of the Sue tyrannosaurus. While the bottom line is a negative, it is important to note that this table is internal to the Field Museum. That is, it is entirely from the museum's financial perspective; further, it does not include the economic value (e.g., admissions) of the more than 1.6 million visitors drawn to the museum to see Sue in the first three years. There is an admission charge for the Field Museum and many of those visitors also purchased the higher value memberships.

Also, not seen on Table 2 is Sue's economic impact on Chicago. While it is difficult to quantify the impact of one artifact in a market of more than 9 million people with many museums, when it is named or branded as Sue was, this particular artifact has had noteworthy additional value for the entire market. For Sue's opening year, and most of the 16 years since, images of Sue have been featured in tourism promotions for the city, not only as a popular destination but because it helps shape the image of the city as an intellectual center. While Chicago tourism started its ascent prior to the arrival of Sue, it is considered one of the contributors to Chicago's annual climb to becoming one of the US's top leisure as well as business visitor destinations.



**Table 2. Sue Project Income and Expenditures Through 1st Quarter 2003, Exhibit opened May 2000**

<b>Income</b>	
<b>Private Gifts and Sponsorship</b>	
McDonald's (headquartered in Chicago)	\$3,000,000
Disney	\$1,025,000
Elizabeth J. Morse Genius Trust	\$315,000
Miscellaneous	\$1,810
Richard L. Adams	\$2,637,324
Com Ed & LaSalle Bank	\$75,000
<b>Total Private Gifts and Sponsorship</b>	<b>\$7,054,134</b>
<b>Government Grants</b>	
State of Illinois (IDNR)	\$850,000
<b>Total Government Grants</b>	<b>\$850,000</b>
<b>Other Income</b>	
Gala Revenue	\$537,730
Sue Traveling Exhibit (19 Venues in three years)	\$1,671,310
(Note: Sue continues to travel - more than 100 venues through 2016)	
Miscellaneous Income	\$10,464
<b>Total Other Income</b>	<b>\$2,219,504</b>
<b>Total Income</b>	<b>\$10,123,638</b>
<b>Expenditures</b>	
Fossil Purchase	\$8,218,409
Prep Labs	\$584,659
Fossil Study	\$1,521,937
Sue Uncrated (Exhibit)	\$7,753
Sue 2000 (Exhibit)	\$2,337,223
Sue Traveling (Exhibit)	\$1,118,958
Legal Fees	\$557,617
Naming Contest	\$36,307
Sue Ventures	\$53,164
Sue Symposium	\$12,572
Sue Programming	\$111,046
Sue in Washington DC	\$114,003
Sue Store Construction	\$469,201
Opening Week Activities	+\$371,566
Sue Impact	\$267,663
Sue Advertising	\$673,440
Sue Additional Casts	\$186,175
Sue Other	\$722
<b>Total Expenditures</b>	<b>\$16,642,415</b>
<b>Total Income over Expenditures</b>	<b>-\$6,518,777</b>
Source: MFA	

Among the drivers of tourism-related cultural economic development that have doubled the economic impact on Chicago's central area in recent decades:

- The arrival of Sue
- Significant additions to the Field's next door neighbor, the Shedd Aquarium (one of the two largest in the United States)
- Additions and expansions to the Field's other neighbor, the Adler Planetarium
- The continued parade of top tier traveling shows to the nearby Art Institute of Chicago and the addition of its Modern Wing
- The addition of Millennium Park and Maggie Daley Park with their mixture of public art and recreation

Table 3 shows the Field Museum's attendance by month from 1970 through 2015. Forty-five years seems like a long stretch, but the intention is to illustrate the impacts on attendance from major shows and the arrival of Sue in 2000. Those years are shown in red in Table 3 in three-year cycles.

Over those 45 years, the museum maintained a visitation level of approximately 1.3 million annually and, in that time, Sue managed to move that needle most significantly, up to 2.36 million in its first year and keep it high at 1.7 and 1.6 million in the two subsequent years.

The impact of major temporary shows -- King Tut first in 1977 and later in 2006 -- drew high-water marks for those years: 2.29 million and 2.13 million although neither were as high as Sue and the impact evaporated in the next year. For comparative fairness it should be noted that while there was an upcharge to see the King Tut shows, seeing Sue was included in the regular price of admission.

Other shows are also indicated and highlighted in Table 3 with a bold red but did not do nearly as well as Tut, and none of the artifacts had attendance value that continued after they left.

One of the reasons for including the monthly attendance totals is to illustrate that while major artifacts like Sue can significantly increase those totals -- for several years in some cases -- normal patterns of attendance by month may continue with varying levels throughout the year.

Finally, it is notable that last year's (2015) attendance is back to the stabilized norm of 1.3 million. As interesting as Sue continues to be, any attraction gets "baked in" to the appeal of a destination after a few years as most of those who specifically want to see the artifact have already done so.

It should be noted that the NCMNS, while a topically similar museum to the Field Museum, is operated very differently. At the NCMNS, research is done out in the public areas and citizen scientists can participate. The Field Museum is the older observational museum model. This difference may mean that the Dueling Dinosaurs will have a continuing impact after the first four years.

Table 4 details how the other museums proximate to the Field Museum fared during the three-year Sue period of impact. Table 4 shows that the museum cluster enjoyed its highest ever collective attendance during the Sue period and that, while the Shedd Aquarium dropped in attendance in the peak Sue year, its attendance in those years was notably up and down for reasons not connected to the Field Museum. When the Shedd Aquarium opened a permanent, blockbuster addition named Wild Reef (highlighted in red in the table), it provided a one-year bump in attendance although it was not as impressive as the impact Sue had on attendance.

Table 4 illustrates the impact of Sue's opening on the other museums in Chicago's Museum Campus plus the nearby Art Institute. The other museums had major events in 2001 (the Art Institute) and 2003 (the Shedd Aquarium) but none of the events yielded as dramatic an attendance increase as Sue brought to the Field Museum. The year Sue opened in Chicago was the best overall for Chicago museum's attendance.

<b>Table 3. Field Museum of Natural History Attendance by Month and Year: 1970 to 2015</b>														
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	7-Year Rolling Average
1970	100,607	138,740	167,766	199,982	214,983	145,811	209,136	136,486	80,912	79,056	91,977	74,076	1,639,532	
1971	70,889	80,337	106,563	140,022	139,436	89,948	143,545	129,243	59,029	80,482	100,627	67,314	1,207,435	
1972	64,109	78,577	111,716	132,692	129,364	112,560	173,304	129,236	53,563	72,438	93,660	62,381	1,213,600	
1973	75,486	82,418	115,147	122,615	131,169	81,680	123,540	108,510	50,579	69,240	92,642	48,688	1,101,714	
1974	55,075	57,180	97,043	110,737	134,606	84,406	124,734	124,142	58,938	71,129	89,477	66,967	1,074,434	
1975	68,209	74,089	109,288	105,096	127,020	85,655	126,746	133,336	53,119	72,132	95,322	66,195	1,116,207	
1976	68,907	78,226	97,121	108,222	139,951	76,857	115,215	116,347	52,626	66,837	82,155	53,721	1,056,185	
1977*	42,438	65,344	97,901	265,565	414,869	428,103	478,882	264,789	46,715	67,491	71,310	47,639	2,291,046	1,201,301
1978	38,781	78,445	145,375	144,335	153,156	83,604	129,269	113,889	51,270	70,649	77,781	45,050	1,131,604	1,294,374
1979	21,435	44,585	89,465	109,411	120,963	86,875	113,054	104,110	48,180	61,595	80,831	59,354	939,858	1,283,541
1980	57,121	57,535	94,734	126,769	143,156	115,022	138,261	175,475	115,475	178,307	80,831	50,244	1,332,930	1,244,435
1981	58,820	56,908	93,492	107,444	118,703	95,359	141,932	129,091	61,961	70,493	94,410	56,137	1,084,750	1,277,466
1982	35,753	55,747	83,002	111,111	107,777	90,359	111,825	100,609	55,680	83,462	79,616	66,551	981,492	1,278,940
1983	55,673	68,100	87,616	106,902	108,676	71,837	99,222	84,546	49,050	70,183	98,388	59,170	959,363	1,259,695
1984	66,484	81,755	95,134	107,172	109,540	83,987	103,308	96,751	51,722	75,052	71,835	62,341	1,005,081	1,245,863
1985	41,041	63,443	112,259	109,699	116,582	98,204	120,645	115,169	55,475	81,758	105,785	69,107	1,089,167	1,062,154
1986	67,381	76,998	130,943	118,198	130,371	106,341	118,686	116,770	52,785	84,212	92,766	69,576	1,165,027	1,056,092
1987	62,711	83,234	104,808	104,363	126,155	87,638	121,175	121,734	59,329	74,449	120,510	90,028	1,156,134	1,088,259
1988	99,365	91,420	115,471	124,434	113,442	102,156	127,509	126,954	65,518	86,417	137,224	142,797	1,332,707	1,063,002
1989	120,774	104,193	154,715	154,822	152,700	128,746	161,042	145,274	73,629	95,054	113,855	92,166	1,496,970	1,098,424
1990	89,034	96,135	160,154	146,500	141,238	122,026	161,860	168,077	80,525	101,238	119,134	80,017	1,465,938	1,172,064
1991	64,423	92,477	120,995	122,850	154,622	111,381	138,197	148,970	64,613	91,639	100,398	84,043	1,294,608	1,244,432
1992	73,179	79,219	105,319	124,962	127,100	105,239	174,542	166,354	67,213	66,815	89,742	74,733	1,254,417	1,285,793
1993	60,068	61,608	97,989	117,383	123,429	85,943	183,304	167,452	75,883	85,206	122,224	115,164	1,295,653	1,309,400
1994	51,625	75,995	129,970	123,610	115,456	103,560	129,938	133,081	82,656	84,189	106,930	90,052	1,227,062	1,328,061
1995	64,038	93,759	123,535	135,810	136,033	108,256	133,944	136,599	60,700	81,053	97,666	91,790	1,263,183	1,338,194

Source: Field Museum of Natural History, MFA

<b>Table 3. Field Museum of Natural History Attendance by Month and Year: 1970 to 2015 - continued</b>														
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	7-Year Rolling Average
1996	70,320	86,975	119,057	110,897	125,841	107,525	139,380	122,386	54,146	86,998	95,462	93,448	<b>1,212,435</b>	1,328,262
1997	63,626	84,830	125,346	112,793	126,602	122,752	173,103	172,437	72,246	117,072	109,524	110,150	<b>1,390,481</b>	1,287,614
1998	85,606	103,121	110,576	143,947	129,038	123,805	194,706	166,026	79,608	90,798	116,751	105,601	<b>1,449,583</b>	1,276,834
1999	61,277	96,992	142,259	146,162	152,859	120,690	164,503	135,967	93,188	130,658	139,512	117,398	<b>1,501,465</b>	1,298,973
2000*	<b>80,013</b>	<b>84,811</b>	<b>184,945</b>	<b>177,878</b>	<b>245,496</b>	<b>320,650</b>	<b>368,553</b>	<b>307,648</b>	<b>145,872</b>	<b>165,872</b>	<b>165,555</b>	<b>116,459</b>	<b>2,363,752</b>	1,334,266
2001	100,598	102,765	191,747	155,354	171,780	156,346	201,444	177,945	80,452	122,598	163,273	135,897	<b>1,760,199</b>	1,486,852
2002	112,597	165,680	172,100	154,904	137,315	156,827	170,676	144,894	84,449	103,914	111,148	103,602	<b>1,618,106</b>	1,563,014
2003	63,480	90,660	120,101	134,528	147,385	160,620	174,213	121,520	53,522	84,519	99,169	89,132	<b>1,338,849</b>	1,613,717
2004*	<b>79,998</b>	<b>68,557</b>	<b>125,723</b>	<b>131,800</b>	<b>127,505</b>	<b>135,845</b>	<b>136,829</b>	<b>115,682</b>	<b>68,219</b>	<b>82,347</b>	<b>133,973</b>	<b>131,195</b>	<b>1,337,673</b>	1,631,776
2005*	<b>100,191</b>	<b>106,422</b>	<b>136,065</b>	<b>149,204</b>	<b>122,871</b>	<b>118,275</b>	<b>133,303</b>	<b>106,833</b>	<b>54,024</b>	<b>85,632</b>	<b>117,802</b>	<b>106,880</b>	<b>1,337,502</b>	1,624,232
2006*	<b>99,667</b>	<b>101,291</b>	<b>181,281</b>	<b>128,555</b>	<b>147,019</b>	<b>223,112</b>	<b>278,856</b>	<b>240,245</b>	<b>157,987</b>	<b>188,348</b>	<b>185,027</b>	<b>201,661</b>	<b>2,133,049</b>	1,608,221
2007	77,516	59,598	125,635	148,236	121,624	125,337	158,913	132,790	71,520	89,349	123,003	94,289	<b>1,327,810</b>	1,698,447
2008	88,732	111,702	163,067	121,704	132,831	107,973	166,030	139,804	67,115	90,911	97,170	87,016	<b>1,374,055</b>	1,550,455
2009*	<b>66,254</b>	<b>77,880</b>	<b>147,463</b>	<b>165,719</b>	<b>121,450</b>	<b>122,251</b>	<b>168,079</b>	<b>138,383</b>	<b>72,933</b>	<b>89,735</b>	<b>83,169</b>	<b>71,691</b>	<b>1,325,007</b>	1,495,292
2010	58,147	65,517	141,673	127,690	117,369	114,989	157,140	128,556	70,144	78,961	84,233	76,935	<b>1,221,354</b>	1,453,421
2011	56,532	64,405	123,467	128,568	128,760	127,742	162,454	125,418	78,615	89,243	96,666	101,108	<b>1,282,978</b>	1,436,636
2012	64,614	76,992	139,722	150,325	98,080	123,472	158,108	114,082	66,204	78,085	90,224	90,727	<b>1,250,635</b>	1,428,822
2013	74,907	68,038	143,105	126,214	115,636	116,471	161,125	134,912	66,886	77,244	102,920	99,526	<b>1,286,984</b>	1,416,413
2014	59,403	57,861	124,672	116,991	111,062	115,906	153,577	139,816	71,891	80,970	99,349	97,157	<b>1,228,655</b>	1,295,546
2015	64,535	116,995	121,443	129,289	128,755	138,803	170,363	136,298	89,108	96,533	85,437	104,383	<b>1,381,942</b>	1,281,381
Source: Field Museum of Natural History, MFA														

Notes:

- Bold red years represent blockbuster attraction launch years; subsequent two "halo" years also in red
- 2000 is "Sue" 1977 and 2006 are the two King Tuts
- \* Higher attendance due to blockbuster exhibit(s)/events



<b>Table 4. Attendance of Proximate (Museum Campus) Museums When Sue Opened in 2000 (and Shedd Aquarium Opened Wild Reef in 2003)</b>									
<b>Facility/ Year</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
Field Museum	1,212,475	1,390,481	1,450,891	1,501,465	2,363,752	1,760,193	1,618,006	1,349,412	1,356,286
Adler Planetarium	458,357	430,002	459,606	460,815	465,299	434,086	409,450	401,508	400,330
Art Institute of Chicago	1,669,842	1,735,726	1,530,632	1,207,117	1,355,552	1,704,441	1,453,731	1,131,778	1,597,164
John G. Shedd Aquarium	1,775,765	1,802,385	1,981,758	1,851,618	1,720,174	1,681,609	1,709,612	2,088,687	1,945,557
<b>Total Museum Campus + Art Institute</b>	5,116,439	5,358,594	5,422,887	5,021,015	5,904,777	5,580,329	5,190,799	4,971,385	5,299,337
<b>Total All "Museums in the Parks" Attendance</b>	<b>7,451,692</b>	<b>7,496,533</b>	<b>7,599,207</b>	<b>7,129,664</b>	<b>8,799,178</b>	<b>7,838,099</b>	<b>7,503,068</b>	<b>7,064,559</b>	<b>7,478,991</b>
<i>Source: Museums in the Parks</i>									

## Attendance Projections for NCMNS with the Dueling Dinosaurs

Table 5 below presents the attendance figures for the Field Museum and the NCMNS from 1997 through 2015. During this period the NCMNS had two major changes resulting from the opening of new buildings in 2000 and 2012. The Field Museum facility has remained relatively stable as an attraction during this period except for the arrival of Sue in 2000 and a major King Tut exhibit in 2006.

Also included in Table 5 are the populations of the two museums' core market areas. For the NCMNS we use Wake County and for the Field Museum we use Cook County. In the 18 years shown, Wake grew from 570,540 to one million while Cook stayed the same at 5.2 million. Due to its location in a much larger city, the Field Museum has far more competitors for resident and visitor leisure time. Fewer attractions in Wake potentially mean that investment in any one of the existing facilities can have a more remarkable impact.

The market penetration calculations for the two museums are also shown in Table 5. For the Field Museum, the market penetration rate is typically in the mid-20 percentiles. The NCMNS has typically had one of the more successful market penetration rates of all museums in its class. Beginning with 2000, the first expansion, its attendance began to soar with respect to the Wake County population. In 2012 the new building opened, successfully completing the second expansion. Attendance at the NCMNS was equal to the population of Wake County; it was as if every single man, woman, and child had visited the museum. Although attendance has dropped since that honeymoon period, it still equals 94% of the population of Wake County.

The remarkable performance of the NCMNS to date does have one possible downside. That downside is the possibility of a modest attendance with the Dueling Dinosaurs as so many of the people in its market area are already coming to the museum. However, since, as noted previously, economic impact comes only from visitation from outside the market area, we would not say that the NCMNS has fully penetrated the whole rest of the North Carolina market and states beyond. There is still plenty of day-trip and overnight visitation that can be gained which would create economic impact in Raleigh and Wake County.

For an attendance impact from the Dueling Dinosaurs, we took, as a minimum, the 1.2 million that the NCMNS was able to achieve in 2012; that number has since dropped to an attendance of 944,000 in 2015. We also looked at what the attendance was for Sue at the Field Museum. The Field Museum went from 1.3 visitors in 1997, to 1.4 million in 1998, back up to 1.5 million in 1999, then skyrocketed to 2.36 million (when Sue opened) in 2000. It stayed high at 1.7 and 1.6 million for the years 2001 and 2002, respectively, before reverting to the standard 1.3 million in 2003.

The Sue news made the Field Museum a much more topical local destination in 1998, even among the dozens of attractions in Chicago, and there were some pre-show exhibits in 1999, the year before Sue opened, that contributed to a pre-exhibition run up in attendance.

Raleigh and Wake County have fewer attractions and the NCMNS is already at the top of the list of area attractions, or at least near it. Therefore, we do not expect a repeat of the Field Museum's 1998 attendance increase, as previously noted, due to a higher profile in the news cycle because of the pending arrival of Sue. Since the Dueling Dinosaurs will be prepared as a research endeavor in the public eye, we are not expecting a year similar to 1999 with just a pre-show exhibit. We anticipate that the research endeavor year will be more like an "opening year".

Overall, had there been no Sue, for the four years of impact 1999 to 2002 the Field Museum had total attendance of 7.2 million. With the typical yearly attendance of 1.3 million, the total would have been two million lower, at 5.2 million. This is a percentage difference of approximately 40%.

**Table 5. Attendance and Home County Market Comparison: NCMNS and the Field Museum**

Museum	NC Museum of Natural Sciences			Field Museum of Natural History		
Jurisdiction	Wake County			Cook County		
Year	Population	Attendance	Market Penetration	Population	Attendance	Market Penetration
1997	570,540	164,913	29%	5,283,000	1,390,481	26%
1998	592,534	167,371	28%	5,346,000	1,449,583	27%
1999	612,728	188,800	31%	5,287,000	1,501,465	28%
2000	633,517	582,720	92%	5,377,000	2,363,752	44%
2001	659,127	637,925	97%	5,377,000	1,760,199	33%
2002	680,443	498,158	73%	5,356,000	1,618,106	30%
2003	701,347	756,036	108%	5,330,000	1,338,849	25%
2004	723,095	671,776	93%	5,302,000	1,337,673	25%
2005	753,828	575,111	76%	5,269,000	1,337,502	25%
2006	792,940	661,314	83%	5,237,000	2,133,049	41%
2007	831,746	694,763	84%	5,236,000	1,327,810	25%
2008	868,068	740,203	85%	5,267,000	1,374,055	26%
2009	897,214	666,474	74%	5,287,000	1,325,007	25%
2010	906,943	697,716	77%	5,199,000	1,221,354	23%
2011	929,070	712,451	77%	5,213,000	1,282,978	25%
2012	952,143	1,226,540	129%	5,228,000	1,250,635	24%
2013	974,289	1,026,177	105%	5,241,000	1,286,984	25%
2014	987,145	915,041	93%	5,200,000	1,228,655	24%
2015	1,000,000	944,102	94%	5,200,000	1,381,942	27%

Source: Museums, US Bureau of the Census, MFA

## Profiles of the Subject Markets and Tourism Economies

### Raleigh

As Table 6 illustrates, within five miles of the NCMNS a very diverse and robust tourism economy exists that could readily receive retail, dining, entertainment and other expenditures from day and overnight visitors coming to see the Dueling Dinosaurs. There are 88 hotels with 2,874 employees relying on overnight visitation to Raleigh and nearby areas of Wake County.

<b>Table 6. North Carolina Museum of Natural Science 5-Mile Economic Data</b>				
<b>Business Category</b>	<b>Businesses</b>		<b>Employees</b>	
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>
Hotels & Lodging	88	0.6%	2,874	1.4%
Motion Pictures & Amusements	265	1.9%	3,312	1.6%
Education Institutions & Libraries	264	1.9%	9,978	5.0%
Food & Beverage Stores	213	1.6%	2,844	1.4%
Health & Personal Care Stores	138	1.0%	944	0.5%
Gasoline Stations	102	0.7%	674	0.3%
Clothing & Clothing Accessories Stores	276	2.0%	2,223	1.1%
General Merchandise Stores	75	0.5%	2,923	1.5%
<i>Source: ESRI &amp; MFA</i>				

### Chicago

Not surprisingly, the centrally located Field Museum in Chicago is able to create substantial economic impact (see Table 7) as its overnight visitors can stay at 265 hotels within five miles of the Field Museum. These are typically larger hotels than are found in Raleigh and Wake County; they employ some 24,000 people.

<b>Table 7. Field Museum of Natural History 5-Mile Economic Data</b>				
<b>Business Category</b>	<b>Businesses</b>		<b>Employees</b>	
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>
Hotels & Lodging	265	0.5%	24,153	2.6%
Motion Pictures & Amusements	1,260	2.6%	17,063	1.8%
Education Institutions & Libraries	1,070	2.2%	49,698	5.3%
Food & Beverage Stores	843	1.7%	11,840	1.3%
Health & Personal Care Stores	435	0.9%	4,524	0.5%
Gasoline Stations	170	0.4%	504	0.1%
Clothing & Clothing Accessories Stores	1,264	2.6%	10,547	1.1%
General Merchandise Stores	196	0.4%	7,787	0.8%
<i>Source: ESRI &amp; MFA</i>				



## Rockford

We include the data from the Burpee Museum of Natural History in Rockford as it too has added large dinosaur exhibits in recent years. Unfortunately, the data on its experience has been difficult to obtain as this is a very small museum with not much more than 40,000 in attendance annually. Rockford's tourism is a fraction of Raleigh's; the data shows only 17 hotels with 243 employees within five miles (see Table 8).

<b>Table 8. Burpee Museum of Natural History 5-Mile Economic Data</b>				
<b>Business Category</b>	<b>Businesses</b>		<b>Employees</b>	
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>
Hotels & Lodging	17	0.2%	243	0.2%
Motion Pictures & Amusements	177	2.4%	1,599	1.5%
Education Institutions & Libraries	159	2.2%	6,585	6.1%
Food & Beverage Stores	118	1.6%	1,396	1.3%
Health & Personal Care Stores	82	1.1%	800	0.7%
Gasoline Stations	61	0.8%	761	0.7%
Clothing & Clothing Accessories Stores	88	1.2%	423	0.4%
General Merchandise Stores	55	0.8%	1,400	1.3%
<i>Source: ESRI &amp; MFA</i>				

Table 9 offers further comparison among Raleigh, Chicago, and Rockford in the food and beverage sales categories, showing potential and actual sales within five miles of the three museums. The potential (an estimate) is based on the people who live and work in the five-mile ring. When actual sales are higher than the estimated potential, the area has a lot more inbound visitation and spending. By that measure, the five-mile rings around the NCMNS and the Field Museum are drawing in considerably more business to its retailers and restaurants than might normally be expected of the local resident and working populations. The variety and excellence this suggests in retail and restaurants add another argument why projected economic impact for Raleigh from the Dueling Dinosaurs at the NCMNS is quite likely.

**Table 9. 5-Mile Actual Sales & Sales Potential Data Around Three Museums**

Museum	Field Museum of Natural History			Burpee Museum of Natural History			NC Museum of Natural Science		
City	Chicago			Rockford			Raleigh		
	Actual	Potential	Difference	Actual	Potential	Difference	Actual	Potential	Difference
Total Retail Trade	\$11,733,270,212	\$11,954,862,655	\$221,592,443	\$1,616,700,892	\$1,699,086,680	\$82,385,788	\$3,773,602,934	\$2,486,081,351	-\$1,287,521,583
Food Services & Drinking Places	\$3,083,812,220	\$1,454,682,557	-\$1,629,129,663	\$198,515,331	\$181,751,684	-\$16,763,647	\$540,206,394	\$277,725,992	-\$262,480,402
Full-Service Restaurants	\$2,080,583,502	\$804,388,932	-\$1,276,194,570	\$99,435,375	\$100,285,741	\$850,366	\$303,131,257	\$139,787,915	-\$163,343,342
Limited-Service Eating Places	\$658,306,240	\$555,248,167	-\$103,058,073	\$86,901,152	\$70,012,080	-\$16,889,072	\$203,935,845	\$120,524,539	-\$83,411,306
Special Food Services	\$107,185,318	\$30,254,506	-\$76,930,812	\$1,812,986	\$4,058,758	\$2,245,772	\$10,916,886	\$3,096,072	-\$7,820,814
Drinking Places - Alcoholic Beverages	\$237,737,160	\$64,790,952	-\$172,946,208	\$10,365,818	\$7,395,105	-\$2,970,713	\$22,222,406	\$14,317,466	-\$7,904,940
Source: ESRI & MFA									

## North Carolina Tourism and Economic Impact of Tourism

North Carolina is already a strong tourism draw, not just to the coast and mountains but also the Capitol region as well. Wake County already has the second highest tourism related economic impact in the state. An investment in Raleigh / Wake County tourism is a further investment in what is already a strong tourism product with plenty of amenities.

The profile information on the State of North Carolina's tourism below, summarized from state reports, can help determine how to position and present the Dueling Dinosaurs at the NCMNS in ways that appeal to the existing North Carolina visitor flow.

Following the profiles, Tables 10 and 11 show the annual economic impact of tourism on Wake County's economy, which doubled between 1996 and 2015.

### 2014 North Carolina Visitor Profile

#### Overnight Trips

- 37 million overnight trips taken in North Carolina, ranking #6 in the US
- Summer (June-Aug) was the most visited season with 34% of trips taken. June was the most visited month, with 13% of all trips taken
- The average overnight trip lasted 2.8 nights, with the average party size of 1.9 people
- It was the first trip to North Carolina for 12% of overnight visitors
- 81% of overnight visitors traveled to North Carolina for leisure purposes
- Origins of overnight visitors; North Carolina (30%), South Carolina (9.2%), Florida (8.1%), Virginia (7.9%), Georgia (7.3%), New York (4.3%)
- Average household expenditure for overnight trips was \$688. In-state residents spent \$577 and out-of-state residents spent \$745.
- Average household income was \$74,000, with in-state visitors' household income at \$65,000 and out-of-state visitors of \$79,700
- The average amount spent on entertainment/admissions was \$19 for in-state visitors and \$35 for out-of-state visitors
- Activities in which overnight visitors participated: **State/National Parks:** 11% (in-state 8%, out-of-state 13%) **Historical sites/churches:** 9% (in-state 5%, out-of-state 12%) **Museums:** 7% (in-state 5%, out-of-state 12%), **Art Gallery:** 4% (in-state 4%, out-of-state 4%) **Theater/Drama:** 2% (in-state 1%, out-of-state 2%)

#### Daytrips

- 11.1 million daytrips taken in North Carolina, ranking #7 in the US
- Spring (March-May) was most visited season, with 27% of trips taken. June was the most visited month, with 12% of trips taken
- Origins of overnight visitors: North Carolina (52%), South Carolina (9.9%), Virginia (7.0%), Florida (5.7%), Georgia (4.6%), Tennessee (4.2%)
- Average household expenditure for a daytrip was \$191, up from \$177 in 2013
- The average amount spent on entertainment/admissions was \$15
- Average household income of day-trip visitors was \$58,000
- Activities which day-trip visitors participated: **State/National Parks:** 5.4% **Historical sites/churches:** 2.8% **Museums:** 2.3% **Art Gallery:** 1.2% **Theater/Drama:** 0.5%

#### Piedmont Region (49 most central counties – includes Wake County (Raleigh))

- 55% or 26.4 million of North Carolina visitors traveled to the Piedmont Region

- 74% of visitors came for pleasure purposes
- Fall (September-November) had the highest percentage of visitors, with 27%
- Average age of visitor is 46
- Average trip expenditure was \$466. For overnight visitors it was \$596 and for day visitors it was \$141.
- The average amount spent on entertainment/admissions was \$21
- Average household income of a visitor party was \$74,290
- Activities participated in by overnight visitors; **State/National Parks: 5.8% Historical sites/churches: 8.3% Museums: 7.5% Art Gallery: 3.5% Theater/Drama: 1.8%**

#### **2014 International Visitation to North Carolina**

- 1.3 million international visitors traveled to North Carolina (520,000 of which were from Canada)
- These tourists spent approximately \$451 million
- Canada made up 40% of the market share and 28% of the spending
- The top overseas market was the UK with a 7.6% market share and 7.4% of spending.
- China/Hong Kong spent the most per visitor with an average of \$756 per person. Switzerland was second with \$611 a person and Venezuela third with \$573 spent per person

#### **2013 Wake County Visitation Statistics**

- Domestic tourism in Wake County generated an economic impact of \$1,883.01 million in 2013. This was a 5.10 % change from 2012.
- In 2013, Wake County ranked #2 in travel impact among North Carolina's 100 counties.
- More than 20,270 jobs in Wake County were directly attributable to travel and tourism.
- Travel generated a \$572.89 million payroll in 2013.
- State and local tax revenues from travel to Wake County amounted to \$138.64 million. This represents a \$143.68 tax saving to each county resident.
- Raleigh's three major museums are among North Carolina's most visited -- the North Carolina Museums of Art, History and Natural Sciences. Other popular Wake County attractions are the Capitol and Executive Mansion, Marbles Kids Museum, Farmer's Market, Jordan Lake and Umstead State Park.



**Table 10. Wake County Tourism Impacts**

Year	Revenues \$ (millions)	Change from previous year
2013	\$1,883.01	5.10%
2012	\$1,791.64	5.46%
2011	\$1,698.87	10.25%
2010	\$1,540.97	9.37%
2009	\$1,408.92	-6.94%
2008	\$1,513.94	2.28%
2007	\$1,480.16	10.70%
2006	\$1,337.14	9.70%
2005	\$1,218.86	7.72%
2004	\$1,131.51	4.53%
2003	\$1,082.45	0.29%
2002	\$1,079.30	-5.84%
2001	\$1,146.26	-1.78%
2000	\$1,167.01	7.32%
1999	\$1,087.42	6.52%
1998	\$1,020.89	8.02%
1997	\$945.05	2.44%
1996	\$922.51	-0.99%

Source: State of North Carolina

**Table 11. Tourism Impacts Summary**

Impact	Expenditures \$(millions)	Payroll \$(millions)	Employment (thousands)	State Tax Receipts \$(millions)	Local Tax Receipts \$(millions)
Wake County	1,883.01	572.89	20.27	89.11	49.53
Total State of NC	20,218.58	4,611.45	198.27	1,013.27	601.19

Source: State of North Carolina

## Appendix

Table 12 lists the closest 50 hotels to The Field Museum. Altogether, these 50 properties total 21,918 rooms and are within two miles of the Field Museum.

<b>Table 12. Field Museum of Natural History, Chicago, 50 Hotels by Distance</b>				
Property Name	Distance	Rooms	Chain Scale	Open Date
Best Western Grant Park Hotel	0.4	172	Midscale	N/A
Essex Inn	0.5	254	Indep	Jun-61
Hilton Chicago	0.6	1544	Upper Upscale	Mar-27
Renaissance Blackstone Chicago Hotel	0.6	332	Upper Upscale	Mar-08
Travelodge Downtown Chicago	0.7	233	Economy	Jun-18
Congress Plaza Hotel	0.7	871	Indep	Jun 1893
Marriott Marquis Chicago	0.9	1200	Upper Upscale	U/C
Ascend Collection Hotel Blake	0.9	138	Upscale	Jan-87
Buckingham Athletic Club Hotel	1	21	Indep	Jan-87
Hyatt Regency McCormick Place	1	1258	Upper Upscale	Jun-98
Union League Club Of Chicago	1.1	190	Indep	Jun 1879
Hilton The Palmer House	1.1	1641	Upper Upscale	May-25
Chicago Athletic Association Hotel	1.1	241	Indep	May-15
The Silversmith Hotel & Suites	1.2	144	Indep	Jun-98
Club Quarters Central Loop	1.2	320	Upper Upscale	Jun-00
Hampton Inn Majestic Chicago Theatre District	1.2	135	Upper Midscale	Jan-07
JW Marriott Chicago	1.2	610	Luxury	Nov-10
Chinatown Hotel	1.2	50	Indep	Jun-05
Hyatt Centric t Loop Chicago	1.2	257	Upper Upscale	Apr-15
W Hotel Chicago City Center	1.3	403	Luxury	May-29
Kimpton The Gray	1.3	293	Upper Upscale	U/C
Kimpton Hotel Burnham	1.3	122	Upper Upscale	Oct-99
Fairmont Chicago Millennium Park	1.3	687	Luxury	Dec-87
Holiday Inn & Suites Chicago Downtown	1.3	145	Upper Midscale	May-99
Residence Inn Chicago Downtown Loop	1.3	381	Upscale	Sep-15
Chicago Millennium Park	1.4	145	Indep	U/C
Radisson Blu Aqua Hotel Chicago	1.4	334	Upper Upscale	Oct-11
La Quinta Inns & Suites Chicago Downtown	1.4	241	Midscale	Apr-09
Virgin Hotel Chicago	1.5	250	Indep	Jan-15
Swissotel Chicago	1.5	661	Upper Upscale	Aug-88
Hard Rock Hotel Chicago	1.5	381	Indep	Jan-04
Doubletree The Wit	1.5	310	Upscale	May-09
Wyndham Grand Chicago Riverfront	1.5	334	Upper Upscale	Jun-59
Kimpton Hotel Monaco Chicago	1.5	191	Upper Upscale	Jun-58
Hyatt Place Chicago Downtown The Loop	1.5	206	Upscale	Jun-15
Hampton Inn Chicago Downtown North Loop Michigan Avenue	1.5	143	Upper Midscale	May-15
Hilton Garden Inn Chicago Downtown North Loop	1.5	191	Upscale	Jul-15
Kimpton Hotel Allegro	1.5	483	Upper Upscale	Jun-27
Renaissance Chicago Downtown Hotel	1.5	560	Upper Upscale	Nov-91
Hyatt Regency Chicago	1.5	2019	Upper Upscale	Jun-74
Comfort Suites Michigan Avenue Loop Chicago	1.5	119	Upper Midscale	May-09
The Chicago South Loop Hotel	1.5	232	Indep	Mar-08
Club Quarters Wacker @ Michigan	1.5	247	Upper Upscale	Jun-02
Chicago River Hotel	1.5	121	Indep	Jun-09

Curio Collection London House Chicago	1.6	452	Upper Upscale	U/C
---------------------------------------	-----	-----	---------------	-----

**Table 12. (continued) Field Museum of Natural History, Chicago, 50 Hotels by Distance**

Property Name	Distance	Rooms	Chain Scale	Open Date
Sheraton Grand Chicago	1.6	1218	Upper Upscale	Mar-92
Langham Chicago	1.6	316	Luxury	Jul-13
Westin Chicago River North	1.6	429	Upper Upscale	Oct-87
Trump Hotel Collection Chicago	1.6	339	Luxury	Jan-08
Autograph Collection Hotel Chicago Downtown	1.7	354	Upper Upscale	Oct-98
Source: Smith Travel Research (STR), MFA				

For Rockford, the 50-hotel count went out much further than for Chicago, to 24 miles distant in Rochelle, IL. As we know Rockford very well, we stayed with those hotels that are genuinely associated with Rockford. That list comes to just 33 hotels and 3,231 rooms. Because of the smaller tourism infrastructure, the impact is just not as noticeable in Rockford as it is in Chicago or Raleigh.

**Table 13. Burpee Museum - Natural History, Rockford, Area Hotels by Distance**

Property Name	Distance	Rooms	Chain Scale	Open Date
Lafayette Hotel	0.5	66	Indep	Jun-27
Parks Motel	2.1	30	Indep	Jun-86
Clayton House Motel	2.2	57	Indep	N/A
Cliffbreakers Riverside Resort	2.7	105	Indep	Jul-98
Alpine Inn	3.1	114	Indep	Jun-45
Travel Inn	3.5	84	Indep	Jun-66
Rockford Motel	4.3	114	Indep	Sep-74
Howard Johnson Rockford	4.4	102	Economy	Jun-70
Village Inn Motel	4.5	20	Indep	N/A
Travlur Motel	4.5	34	Indep	N/A
Airport Inn	4.8	110	Indep	Jun-59
Gold Star Motel	5.3	27	Indep	N/A
Comfort Inn Rockford	6	64	Upper Midscale	May-92
La Quinta Inns & Suites Rockford	6	92	Midscale	Mar-98
Red Roof Inn Rockford	6	108	Economy	Feb-79
Radisson Hotel & Conference Center Rockford	6	114	Upscale	Aug-97
Extended Stay America Rockford State Street	6.1	73	Economy	Nov-97
Staybridge Suites Rockford	6.1	86	Upscale	Dec-08
Holiday Inn Rockford I 90 & Route 20 State Street	6.1	202	Upper Midscale	Jun-70
Residence Inn Rockford	6.1	94	Upscale	Apr-93
Sleep Inn Rockford	6.2	70	Midscale	Jun-99
Super 8 Rockford	6.2	50	Economy	Apr-90
Fairfield Inn & Suites Rockford	6.2	106	Upper Midscale	May-09
Courtyard Rockford	6.2	147	Upscale	Apr-86
Candlewood Suites Rockford	6.2	67	Midscale	Oct-97
Extended Stay America Rockford I 90	6.2	104	Economy	Sep-97
Hampton Inn Rockford	6.3	121	Upper Midscale	Jan-90
Hilton Garden Inn Rockford	6.3	135	Upscale	Aug-06
Motel 6 Rockford	6.3	131	Economy	Feb-89
Clock Tower Resort	6.5	245	Indep	May-67
Baymont Rockford	6.5	87	Midscale	Nov-99
Days Inn Rockford	6.6	98	Economy	Jun-74
Quality Inn & Suites Loves Park	6.9	55	Midscale	May-03
Holiday Inn Express & Suites Rockford Loves Park	6.9	119	Upper Midscale	Aug-05
Source: Smith Travel Research (STR), MFA				

The first 50 hotels around the North Carolina Museum of Natural Sciences only gets past the four-mile point (to the Crabtree mall area). These 50 are a fraction of the total hotel inventory of Raleigh but are likely to be the properties that will absorb the largest impact of a new attraction at the museum.

With 6,127 rooms, these 50 properties total much less than the first 50 area hotels around the Field Museum which boasts nearly 22,000 rooms -- and that is only a part of downtown Chicago's room count but includes considerably more than double the room count of the hotels around Rockford's Burpee Museum. For Raleigh there are several times the 6,000 rooms in the Raleigh-Durham-Chapel Hill MSA, whereas the next set of hotels for Rockford really begins miles away west and north in the Beloit, Wisconsin area across the state line.

<b>Table 14. North Carolina Museum of Natural Sciences, Raleigh, Area Hotels by Distance</b>				
<b>Property Name</b>	<b>Distance</b>	<b>Rooms</b>	<b>Chain Scale</b>	<b>Open Date</b>
Days Inn Raleigh Downtown	0.2	55	Economy	Jan-69
Holiday Inn Raleigh Downtown	0.3	203	Upper Midscale	Nov-69
Sheraton Hotel Raleigh	0.5	353	Upper Upscale	Jan-86
Hampton Inn Suites Raleigh Downtown	0.5	126	Upper Midscale	Dec-12
Marriott Raleigh City Center	0.6	400	Upper Upscale	Jul-08
Doubletree Raleigh Brownstone University	1.2	190	Upscale	Jun-66
Kings Motel	1.3	28	Indep	N/A
aloft Hotel Raleigh	1.4	135	Upscale	Oct-15
Capital Inn	1.7	60	Indep	Jun-65
Red Roof Inn Raleigh NCSU Convention Center	2	133	Economy	Jul-98
Comfort Inn Raleigh	2.3	60	Upper Midscale	Jun-09
Super 8 Raleigh Downtown South	2.3	68	Economy	Jun-86
Claremont Inn	2.5	26	Indep	Jun-92
Budget Inn	2.6	58	Indep	Aug-00
Extended Stay America Raleigh Northeast	2.9	88	Economy	Oct-99
Econo Lodge Inn & Suites Raleigh North	2.9	96	Economy	Jan-97
Motel 6 Raleigh North	3	127	Economy	Aug-88
Wake Inn	3	73	Indep	Jul-86
Courtyard Raleigh Midtown	3	153	Upscale	Dec-86
Hampton Inn Raleigh North	3	128	Upper Midscale	Jun-88
Extended Stay America Raleigh North Raleigh Wake Towne Dr.	3.1	72	Economy	Dec-96
Extended Stay America Raleigh North Raleigh	3.1	104	Economy	Dec-97
Best Western Raleigh North Downtown	3.2	139	Midscale	Jun-74
Days Inn Raleigh Beltline	3.2	135	Economy	Apr-85
Holiday Inn Raleigh North Capital Boulevard	3.3	130	Upper Midscale	Jun-78
Residence Inn Raleigh Midtown	3.3	144	Upscale	Mar-86
Raleigh Inn	3.3	110	Indep	Aug-87
Wingate By Wyndham Raleigh	3.3	85	Midscale	May-98
Hyatt Place North Raleigh Midtown	3.4	127	Upscale	Feb-99
Hilton North Raleigh	3.5	333	Upper Upscale	Jan-83
Hospitality Studios	3.5	117	Indep	Jun-87
City Studios Inn & Suites	3.6	92	Indep	Jun-84
Holiday Inn Express & Suites Raleigh Northeast Medical Center	3.6	74	Upper Midscale	Mar-03
Extended Stay America Raleigh North Wake Forest Road	3.6	122	Economy	Nov-97
Microtel Inn & Suites by Wyndham Raleigh	3.7	74	Economy	May-98
Renaissance Raleigh North Hills Hotel	3.7	229	Upper Upscale	Dec-08
Knights Inn Raleigh Downtown East	3.7	116	Economy	Mar-86
Hyatt House Raleigh North Hills	3.8	137	Upscale	Jul-13
Holiday Inn Express & Suites Raleigh Southwest NC State	3.9	108	Upper Midscale	Jan-10



Days Inn Raleigh South	3.9	103	Economy	Jun-72
<b>Table 14. (continued) North Carolina Museum of Natural Sciences, Raleigh, 50 Hotels by Distance</b>				
<b>Property Name</b>	<b>Distance</b>	<b>Rooms</b>	<b>Chain Scale</b>	<b>Open Date</b>
Ramada Raleigh	3.9	123	Midscale	Mar-87
Wingate by Wyndham Garner	3.9	84	Midscale	Jan-00
Econo Lodge South Garner	4	62	Economy	Mar-92
Sun Suites of Raleigh	4	137	Economy	Dec-99
Best Western Plus Edison Inn	4	52	Upper Midscale	Jun-96
Fairfield Inn & Suites Raleigh Crabtree Valley	4.1	125	Upper Midscale	Nov-96
La Quinta Inns & Suites Raleigh Crabtree	4.1	134	Midscale	Jan-98
Comfort Suites Raleigh	4.1	66	Upper Midscale	Jun-01
Courtyard Raleigh Crabtree Valley	4.1	84	Upscale	Oct-89
Hilton Garden Inn Raleigh Crabtree Valley	4.1	149	Upscale	Jul-15
<i>Source: Smith Travel Research (STR), MFA</i>				

In other words, Raleigh offers many more hotel stay opportunities for a new attraction at the NCMNS than does Rockford's Burpee, and fewer, but closer (within a short walk) than Chicago's Field Museum.

The three communities are quite different from one another, but it is clear that Raleigh and Wake County are well poised to receive economic impact across many sectors from the addition of a significant asset like the Dueling Dinosaurs.

LOCAL NEWS

# Raleigh museum ranks 1st in most visited NC attractions

Posted March 6, 2017



5 Reactions



**RALEIGH, N.C.** — The biggest tourist attraction in the state of North Carolina is right here in downtown Raleigh.

For the third year, the **North Carolina Museum of Natural Sciences** ranked as the most visited historic attraction in the state, and other Raleigh venues were right behind it.

The survey conducted by [Carolina Publishing Associates](#) in Matthews, N.C. collects attendance records at historic attractions throughout the state. According to data collected in the study, the downtown Raleigh museum reported more than 937,000 visitors last year.


Fort Fisher in Kure Beach came in second, reporting 830,000 visitors.

Fort Macon in Atlantic Beach came in third, and the North Carolina Zoo in Asheboro and Charlotte's Discovery Place rounded out the top five.

ADVERTISING



The other attractions that made the "top ten" include:

- Marbles Kids Museum (Raleigh) - 675,890
- North Carolina Museum of Life and Science (Durham) - 554,391 
- North Carolina Museum of History (Raleigh) - 545,319

- North Carolina Museum of Art (Raleigh) - 503,777
- North Carolina Arboretum (Asheville) - 500,851

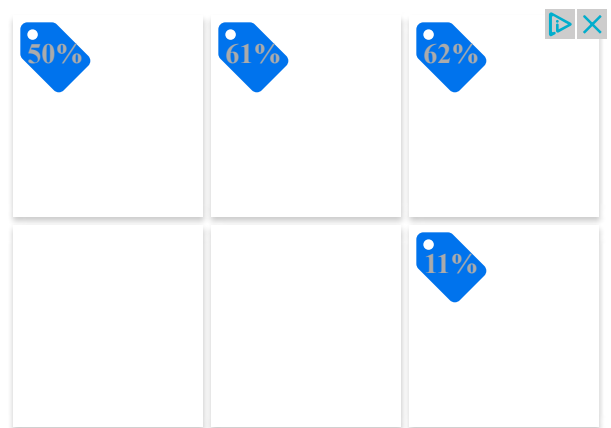
One location missing from the list of North Carolina attractions is the Biltmore Estate in Asheville, the survey notes, since the venue no longer reports its attendance totals to private studies.

---

## CREDITS

**Web Editor**      [Jessica Patrick](#)

Copyright 2017 by Capitol Broadcasting Company. All rights reserved. This material may not be published, broadcast, rewritten or redistributed.







Friends of the North Carolina Museum of Natural Sciences

February 5, 2018

Ms. Jessica Holmes  
Wake County Board of Commissioners  
Wake County  
P.O. Box 550  
Raleigh, NC 27602

Dear Chairperson Holmes:

RE: Wake County's RFP for high-impact capital projects

Following a two-year assembly of a robust approach to the phenomenal *Dueling Dinosaurs* opportunity, and speaking on behalf of Museum Director Dr. Emlyn Koster, his team, and the nonprofit Friends of the Museum, I have the great pleasure of writing to support the application for capital funds in response to this year's RFP from the Wake County Board of Commissioners.

Imagine strolling down Jones Street to observe the two most complete specimens of the two most popular dinosaurs, preserved together in an apparent predator-prey situation, from 68 million year ago. Now imagine the pride in knowing that the NC Museum of Natural Sciences has been selected from across the entire United States by the Montana discovery team to be the showcase venue. This features preparation and research in the public eye, onsite and online education, citizen science projects and an innovative exhibition for all ages and stages of learning.

There are many aspects of *Dueling Dinosaurs* I could convey as to why this is the right project for this funding, but I will focus on two. First, this once-in-a-lifetime opportunity allows citizens of Raleigh, Wake County and our state to participate in the creation of new knowledge about the dinosaurian world, the world's most popular subject in science. These specimens, even in their raw state, have provided glimpses of new discoveries. Second, as noted in our application, there is a substantial economic impact in addition to an opportunity for unprecedented profile and cultural impacts for Raleigh, Wake County, the Research Triangle, and North Carolina as a whole.

Since 1979 when the Museum celebrated its 100<sup>th</sup> anniversary, the Friends organization has been involving the community, promoting awareness, attracting partners, and raising funds for the Museum. Our Board encompasses dedicated individuals representing the corporate, civic, university, education and nonprofit entities that make up our region. It is with their collective voice that I express profound gratitude for your Board's consideration of our request for capital assistance at a vital moment.

The Friends Board cemented its commitment to this project on August 16, 2017, when the Executive Committee approved a motion to enter into contract to purchase the Dueling Dinosaurs for up to \$6,000,000 with a down payment of \$2,000,000 from the Friends unrestricted funds.

I conclude by expressing appreciation for Wake County's interlocal support for the Museum's pioneering Nature Research Center wing that opened on Earth Day in 2012. Without that bold investment, this Museum would not have advanced to become one of the world's most head-turning museums nor would we be in a position to acquire these amazing specimens.

Wake County's participation in this exciting opportunity will demonstrate an ever-deepening partnership with the museum that is so vital to our community.

Sincerely,

A handwritten signature in black ink, appearing to read 'Anita Watkins', with a stylized flourish at the end.

Anita Watkins

President, Board of Directors

Friends of the NC Museum of Natural Sciences

CC: Emlyn Koster, PhD, Director of the Museum  
Angela Baker-James, Executive Director of the Friends of the Museum

GENERAL ASSEMBLY OF NORTH CAROLINA  
SESSION 2017

H

D

HOUSE BILL 528  
Committee Substitute Favorable 4/11/17  
Committee Substitute #2 Favorable 4/20/17  
PROPOSED SENATE COMMITTEE SUBSTITUTE H528-CSML-13 [v.18]  
06/27/2017 10:14:09 PM

Short Title: Budget Technical Corrections.

(Public)

Sponsors:

Referred to:

March 30, 2017

A BILL TO BE ENTITLED  
AN ACT TO MAKE TECHNICAL, CLARIFYING, AND OTHER MODIFICATIONS TO  
THE CURRENT OPERATIONS APPROPRIATIONS ACT OF 2017.  
The General Assembly of North Carolina enacts:

**PART I. GENERAL PROVISIONS**

**SECTION 1.1.** If Senate Bill 257, 2017 Regular Session, becomes law, then  
Section 2.1 of that act reads as rewritten:

"**SECTION 2.1.** Appropriations from the General Fund of the State for the maintenance of  
the State departments, institutions, and agencies, and for other purposes as enumerated, are  
made for the fiscal biennium ending June 30, 2019, according to the following schedule:

Current Operations – General Fund	FY 2017-2018	FY 2018-2019
<b>EDUCATION</b>		
Community Colleges System Office	\$ 1,121,815,001	\$ 1,122,341,120
...		
Department of Commerce		
Commerce	140,649,732	140,749,732
Commerce State-Aid	20,100,810	20,300,810
...		
Department of Natural and Cultural Resources	185,613,349	185,513,349
...		
Department of Administration	63,691,021	63,941,021
...		
Office of State Budget and Management		
Office of State Budget and Management	8,180,546	8,255,244
OSBM – Reserve for Special Appropriations	8,740,000	12,763,881
...		
<b>TOTAL CURRENT OPERATIONS –</b>		
<b>GENERAL FUND</b>	<b>\$ 22,975,769,893</b>	<b>\$ 22,980,769,893</b>
23,650,253,958"		



\* H 5 2 8 - C S M L - 1 3 \*



**PART VI. GENERAL GOVERNMENT**

**SECTION 6.1.** If Senate Bill 257, 2017 Regular Session, becomes law, then Part XIX of that act is amended by adding a new section to read:

**"NO CLOSURE OF VETERANS CEMETERIES**

**"SECTION 19.3.(a)** The Office of State Budget and Management shall realign the base budget for Budget Code 23050 for the 2017-2019 fiscal biennium to include five FTE positions, increase receipts, and include any other necessary operational costs for the Eastern Carolina State Veterans Cemetery in Goldsboro.

**"SECTION 19.3.(b)** The Department of Military and Veterans Affairs (DMVA) shall not close any of the State's veterans cemeteries. The DMVA shall continue to operate the State's veterans cemeteries and maintain the current level of operations using any or all of the following financial supports: (i) receipts generated by any of the State owned veterans cemeteries, (ii) carryforward funding, and (iii) reserve account fund balances under the purview of DMVA."

**SECTION 6.2.** If Senate Bill 257, 2017 Regular Session, becomes law, then Section 22.2 of that act reads as rewritten:

**"SECTION 22.2.** Section 7 of S.L. 2009-474, as amended by Section 20.3 of S.L. 2012-142, is and Section 8 of S.L. 2009-474 are repealed."

**SECTION 6.3.** If Senate Bill 257, 2017 Regular Session, becomes law, then Part XXVI of that act is amended by adding a new section to read:

**"FIRE AND RESCUE GRANTS-IN-AID**

**"SECTION 26.8.(a)** Notwithstanding any other provision of this act, or the provisions of the Committee Report described in Section 39.2 of this act, to the contrary, of the funds appropriated in this act to the Office of State Budget and Management, Special Appropriations, the sum of one hundred thousand dollars (\$100,000) in nonrecurring funds for the 2017-2018 fiscal year shall be allocated to Caldwell County for EMS services. These funds are in addition to grant-in-aid funds appropriated to the Office of State Budget and Management, Special Appropriations, and shown in the Committee Report described in Section 39.2 of this act, to be allocated to Caldwell County for EMS services for the 2017-2018 fiscal year.

**"SECTION 26.8.(b)** Notwithstanding any other provision of this act, or the provisions of the Committee Report described in Section 39.2 of this act, to the contrary, the revised net appropriation for fire and rescue grants-in-aid is six hundred forty-five thousand dollars (\$645,000) in nonrecurring funds for the 2017-2018 fiscal year."

**SECTION 6.4.** If Senate Bill 257, 2017 Regular Session, becomes law, then Part XXVI of that act is amended by adding a new section to read:

**"INDIAN AFFAIRS COMMISSION**

**"SECTION 26.9.** Notwithstanding any other provision of this act, or the provisions of the Committee Report described in Section 39.2 of this act, to the contrary, of the funds appropriated in this act to the Department of Administration Budget Code 14100, the sum of two hundred fifty thousand dollars (\$250,000) in nonrecurring funds for the 2017-2018 fiscal year shall be allocated to the Indian Affairs Commission (Fund Code 1861) for operational support. These funds shall be used to expedite the recognition review process of North Carolina tribes and commissions. The revised net appropriation for the Indian Affairs Commission is six hundred eighty-two thousand three hundred thirty-six dollars (\$682,336) for the 2017-2018 fiscal year."

**SECTION 6.5.** If Senate Bill 257, 2017 Regular Session, becomes law, then Part XXXI of that act is amended by adding a new section to read:

**"REDUCTION FOR OSBM SPECIAL APPROPRIATIONS**

**"SECTION 31.5.** Notwithstanding any other provision of this act, or the Committee Report described in Section 39.2 of this act, to the contrary, the funds appropriated in this act to the Office of State Budget and Management, Special Appropriations, for the dinosaur project at the



North Carolina Museum of Natural Sciences to improve the visitor experience are reduced by one million two hundred twenty-six thousand one hundred nineteen dollars (\$1,226,119) in nonrecurring funds for the 2017-2018 fiscal year. The revised net appropriation for this project is two hundred seventy-three thousand eight hundred eighty-one dollars (\$273,881) in nonrecurring funds for the 2017-2018 fiscal year only."

SECTION 6.6. If Senate Bill 257, 2017 Regular Session, becomes law, then Part XXXI of that act is amended by adding a new section to read:

**"JOSEPH MONTFORT AMPHITHEATRE REDEVELOPMENT**

**"SECTION 31.6.** Notwithstanding any other provision of this act, or the Committee Report described in Section 39.2 of this act, to the contrary, of the funds appropriated to the Office of State Budget and Management, Special Appropriations, the sum of one hundred fifty thousand dollars (\$150,000) in nonrecurring funds for the 2017-2018 fiscal year shall be allocated to Halifax County for the redevelopment of the Joseph Montfort Amphitheatre for the First for Freedom Outdoor Drama. The revised net appropriation for this project is one hundred fifty thousand dollars (\$150,000) for the 2017-2018 fiscal year only."

SECTION 6.7. If Senate Bill 257, 2017 Regular Session, becomes law, then Part XXXI of that act is amended by adding a new section to read:

**"NORTH CAROLINA CIVIL WAR HISTORY CENTER**

**"SECTION 31.7.** Notwithstanding any other provision of this act, or of the Committee Report described in Section 39.2 of this act, to the contrary, of the funds appropriated to the Office of State Budget and Management, Special Appropriations, the sum of two million five hundred thousand dollars (\$2,500,000) in nonrecurring funds for the 2017-2018 fiscal year shall be allocated to the North Carolina Civil War History Center (Center). Of the funds appropriated to the Office of State Budget and Management, Special Appropriations, an additional sum of up to two million five hundred thousand dollars (\$2,500,000) in nonrecurring funds for the 2017-2018 fiscal year shall be allocated to the Center as a matching grant. Upon verification of the collection of two million five hundred thousand dollars (\$2,500,000) in private donations by the Center, the Office of State Budget and Management shall provide one dollar for every private dollar provided in kind or otherwise, up to a maximum of the two million five hundred thousand dollars (\$2,500,000) for the matching grant described in this section."

**PART VII. TRANSPORTATION**

SECTION 7.1. If Senate Bill 257, 2017 Regular Session, becomes law, then G.S. 136-76.2(c), as enacted by Section 34.10 of that act, reads as rewritten:

"(c) Outsourcing. – ~~All~~ Except for the following activities, all projects funded under the bridge program established under subsection (a) of this section, ~~with the exception of inspection, pre-engineering, contract preparation, contract administration and oversight, and planning activities,~~ section shall be outsourced to private ~~contractors.~~ contractors:

- (1) Inspection.
- (2) Pre-engineering.
- (3) Contract preparation.
- (4) Contract administration and oversight.
- (5) Planning activities.
- (6) Installation of culverts described in subsection (b) of this section, but only in cases of emergency."

SECTION 7.2. If Senate Bill 257, 2017 Regular Session, becomes law, then Section 34.26(a) of that act reads as rewritten:

**"SECTION 34.26.(a)** Strategic Plan; Report. – By ~~January~~ March 1, 2018, the Global TransPark Authority shall establish and implement a strategic plan for the Global TransPark. The Global TransPark Authority may use a portion of funds appropriated to it in this act to



Friends of the North Carolina Museum of Natural Sciences

February 2, 2018

Denise Foreman  
Assistant Manager  
Wake County  
P.O. Box 550  
Raleigh, NC 27602

Dear Ms. Foreman:

I'm writing to confirm the total amount of funds received via private donations towards the *Dueling Dinosaurs* Campaign to date. Below is a report from the Friends of the Museum's donor database, Altru, totaling **\$2908.76**. Please note that this is in addition to the funds committed by the Friends Board of Directors (\$2 million), Bank of America Charitable Foundation (\$1 million) and the State of North Carolina (\$273,881).

Giving Detail			
<b>Filter selection:</b>	All records	<b>Designation:</b>	CC-Dueling Dinosaurs-DD
<b>Date:</b>	All Dates	<b>Appeal:</b>	
Constituent Name	Date	Designations	Amount
<u>Umstead Hotel and Spa</u>	7/7/2017	Capital Campaign \ Dueling Dinosaurs \ Dueling Dinosaurs	\$500.00
<u>Individual donor 1</u>	7/18/2017	Capital Campaign \ Dueling Dinosaurs \ Dueling Dinosaurs	\$579.86
<u>Individual donor 2</u>	7/28/2017	Capital Campaign \ Dueling Dinosaurs \ Dueling Dinosaurs	\$588.66
<u>Individual donor 3</u>	9/21/2017	Capital Campaign \ Dueling Dinosaurs \ Dueling Dinosaurs	\$240.24
<u>Individual donor 4</u>	11/30/2017	Capital Campaign \ Dueling Dinosaurs \ Dueling Dinosaurs	\$1,000.00
<b>TOTAL</b>			<b>\$2,908.76</b>

Sincerely,

Leah Wu Fell  
Director of Development

February 5, 2018

Mrs. Anita Watkins  
President  
Board of Directors  
Friends of NC Museum of Natural Sciences  
PO Box 26928  
Raleigh, North Carolina 27601

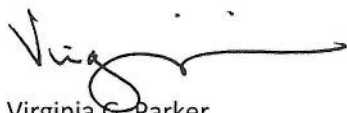
Dear Anita:

On behalf of all of us here at Bank of America, it is my pleasure to confirm to you that Bank of America has agreed to donate \$1,000,000 to the Friends of NC Museum of Natural Sciences in support of the Dueling Dinosaurs Worldwide Education Program. This commitment will be paid out in equal increments over the next four years with the first payment occurring in first quarter, 2018.

Bank of America is very excited to support this unique and valuable program that will touch thousands of school children, adults, teaching professionals and interested science geeks and dinosaur lovers from across the state, the country and even the world. The project aligns beautifully with the Bank of America Foundation's commitment to education, outreach to underserved and rural populations, promoting girls in science and the overall economic impact projected for our region (\$100MM+).

We are very excited about this new partnership with the NC Museum of Natural Sciences and look forward to working with you over the next four years to make the entire vision a reality.

Sincerely,



Virginia G. Parker  
SVP/Market Manager  
Triangle Market





NC Museum of Natural Sciences  
NRC Dinolab

Date: 4/6/2017

SF Area: 3,080

Sheet: 1

of 1

CSI	DESCRIPTION	QUANTITY	UNIT	UNIT/ MATERIAL	MATERIAL	UNIT/ LABOR	LABOR	UNIT/ SUBCONTRACT	SUBCONTRACT	TOTAL
02	Demo existing lighting / ductwork / carpet / floor boxes	3,080.0	SF		\$0	\$5.00	\$15,400		\$0	\$15,400
	Demo existing curtainwall	1,010.0	SF		\$0		\$0	\$10.00	\$10,100	\$10,100
	Temporary protection	1,176.0	SF		\$0	\$3.00	\$3,528		\$0	\$3,528
	Demo existing steps so steel will bare on structure below ILO steps?	400.0	SF		\$0		\$0	\$15.00	\$6,000	\$6,000
					\$0		\$0		\$0	\$0
03	New concrete structure	1,730.0	SF		\$0		\$0	\$12.00	\$20,760	\$20,760
	Concrete retaining wall	422.5	SF		\$0		\$0	\$75.00	\$31,688	\$31,688
					\$0		\$0		\$0	
04	1" Granite cladding with 3" air gap, 2" rigid insulation	1,000.0	SF		\$0		\$0	\$60.00	\$60,000	\$60,000
	CMU wall	1,000.0	SF		\$0		\$0	\$20.00	\$20,000	\$20,000
	Granite coping	105.0	LF		\$0		\$0	\$100.00	\$10,500	\$10,500
	Granite sill	105.0	LF		\$0		\$0	\$100.00	\$10,500	\$10,500
					\$0		\$0		\$0	
05	New steel framing	19.5	TN		\$0		\$0	\$4,500.00	\$87,581	\$87,581
	Steel support for crane / dust evac	1.0	LS		\$0	\$15,000.00	\$15,000		\$0	\$15,000
					\$0		\$0		\$0	\$0
06	Sliding panels on track - Allowance	230.0	SF		\$0		\$0	\$65.00	\$14,950	\$14,950
					\$0		\$0		\$0	\$0
07	Air barrier behind cladding	1,000.0	SF		\$0		\$0	\$3.50	\$3,500	\$3,500
	Intumescent paint at new steel columns	1,730.0	SF		\$0		\$0	\$25.00	\$43,250	\$43,250
	New tapered insulation with TPO membrane	865.0	SF		\$0		\$0	\$15.00	\$12,975	\$12,975
	Insulation below new concrete slab	865.0	SF		\$0		\$0	\$6.00	\$5,190	\$5,190
	Spray applied fireproofing at new steel framing (not at columns)	865.0	SF		\$0		\$0	\$3.50	\$3,028	\$3,028
					\$0		\$0		\$0	\$0
08	Deadloaded glass fin glazing - Sentech Vertafin G-Series vs. Viracon VE13-85 A2.201	1,010.0			\$0		\$0	\$125.00	\$126,250	\$126,250
	Laminated and insulated clear glass wall captured at head and sill with silicone glazing at vertical joints - Oldcastle All Glass System. 4 sliding panels to accomoate a minimum 30" opening (3 panels at south wall and entire west wall).	872.0	SF		\$0		\$0	\$150.00	\$130,800	\$130,800
	Glass door - Oldcastle all-glass entrance system	1.0	EA		\$0		\$0	\$2,500.00	\$2,500	\$2,500
	Solid core wood door	1.0	EA	\$1,250.00	\$1,250	\$150.00	\$150		\$0	\$1,400
	Frameless door with concealed hinges	1.0	EA		\$0		\$0	\$5,000.00	\$5,000	\$5,000
	Access door to new crawl space	1.0	EA		\$0		\$0	\$1,500.00	\$1,500	\$1,500
					\$0		\$0		\$0	\$0
09	Gyp Board Ceilings	800.0	SF		\$0		\$0	\$12.00	\$9,600	\$9,600
	6" metal stud wall with 5/8" gyp bd - NOW MDF SUBSTRATE	3,055.0	SF		\$0		\$0	\$10.00	\$30,550	\$30,550
	6" metal stud wall with 3/4" plywood and 2 layers 5/8" gyp bd - NOW MDF SUBSTRATE	945.0	SF		\$0		\$0	\$15.00	\$14,175	\$14,175
	Polished mirror finish steel ceiling	490.0	SF		\$0		\$0	\$75.00	\$36,750	\$36,750
	ACT ceiling	250.0	SF		\$0		\$0	\$4.50	\$1,125	\$1,125
	Floor transition strip	84.0	LF		\$0		\$0	\$50.00	\$4,200	\$4,200
	Carpet	103.0	SY		\$0		\$0	\$30.00	\$3,090	\$3,090
	Resilient Sheet Flooring	2,200.0	SF		\$0		\$0	\$7.00	\$15,400	\$15,400
	Paint walls and ceilings	3,855.0	SF		\$0		\$0	\$0.50	\$1,928	\$1,928
	Allowance for New Chase Wall from Naturalist Center for Water/Sanitary and Compressed Air	200.0	LF		\$0		\$0	\$50.00	\$10,000	\$10,000
	Allowance for Interior Signage on Glass Partition	1.0	LS		\$0		\$0	\$5,000.00	\$5,000	\$5,000
					\$0		\$0		\$0	\$0
13					\$0		\$0		\$0	\$0
	Dust collection/extraction system (Torit or Nederman) - Included in Mechanical	1.0	EA		\$0		\$0		\$0	\$0
	Overhead lighting (PRL replacement lighting)	1.0	LS	\$5,000.00	\$5,000	\$500.00	\$500		\$0	\$5,500
	Compressed air supply (ingersol-Rand 10HP) - In Plumbing	1.0	EA		\$0		\$0		\$0	\$0
	Flamables cabinet (fume hood base)	1.0	EA	\$3,822.00	\$3,822	\$150.00	\$150		\$0	\$3,972
	Eyewash station	1.0	EA	\$616.50	\$617	\$150.00	\$150		\$0	\$767
	Storage cabinets - By Owner	0.0	XX		\$0		\$0		\$0	\$0
	Workstation - By Owner	0.0	XX		\$0		\$0		\$0	\$0
	Overhead wire rope hoist crane system - By Owner	0.0	XX		\$0		\$0		\$0	\$0
					\$0		\$0		\$0	\$0
15	Fire Protection				\$0		\$0		\$0	\$0
	Remove and reinstall sprinkler runs	3,080.0	SF		\$0		\$0	\$3.00	\$9,240	\$9,240
					\$0		\$0		\$0	\$0
15	Plumbing				\$0		\$0		\$0	\$0
	Mop sink	1.0	EA		\$0		\$0	\$5,000.00	\$5,000	\$5,000
	Stainless Steel Sink with Sediment Trap	1.0	EA		\$0		\$0	\$7,500.00	\$7,500	\$7,500
	Compressed Air Piping	200.0	LF	\$2.86	\$572		\$0	\$15.00	\$3,000	\$3,572
	Purified Water Supply and Return	200.0	LF		\$0		\$0	\$20.00	\$4,000	\$4,000
	Domestic Supply and Return	200.0	LF		\$0		\$0	\$30.00	\$6,000	\$6,000
	Sanitary Waste Vent Piping	200.0	LF		\$0		\$0	\$20.00	\$4,000	\$4,000
	Roof Drainage	3.0	EA		\$0		\$0	\$3,500.00	\$10,500	\$10,500
					\$0		\$0		\$0	\$0
15	Mechanical				\$0		\$0		\$0	\$0
	Rework fanpowered boxes / rebalance / reprogram	2.0	EA		\$0		\$0	\$2,000.00	\$4,000	\$4,000
	Install new fan powered boxes	2,000.0	CFM		\$0		\$0	\$13.00	\$26,000	\$26,000
	Install new exhaust fan for lab space	2,000.0	CFM		\$0		\$0	\$3.50	\$7,000	\$7,000
	Install new dust extraction/collection system	1.0	LS		\$0		\$0	\$110,000.00	\$110,000	\$110,000
	New exhaust vent for flammable storage cabinet	1.0	LS		\$0		\$0	\$5,000.00	\$5,000	\$5,000
					\$0		\$0		\$0	\$0
15	Electrical				\$0		\$0		\$0	\$0
	Workspace lighting allowance	1.0	LS		\$0		\$0	\$15,000.00	\$15,000	\$15,000
	Exhibit lighting allowance	1.0	LS		\$0		\$0	\$15,000.00	\$15,000	\$15,000
	Exhibit lab allowance	1.0	LS		\$0		\$0	\$15,000.00	\$15,000	\$15,000
	Fire Alarm Allowance	1.0	LS		\$0		\$0	\$10,000.00	\$10,000	\$10,000
	Testing	1.0	LS		\$0		\$0	\$3,000.00	\$3,000	\$3,000
	Gear / Power / Power to Mechanical	3,080.0	SF		\$0		\$0	\$30.00	\$92,400	\$92,400
					\$0		\$0		\$0	\$0
					\$0		\$0		\$0	\$0
					\$0		\$0		\$0	\$0
					\$0		\$0		\$0	\$0
		SUB TOTAL			\$11,261		\$34,878		\$1,089,529	\$1,135,667
							Sales Tax	7.00%	\$788	
							Labor Burden	41.00%	\$14,300	
							Insurance & Fees	2.50%	\$28,769	
							General Conditions	9.00%	\$106,157	
							P & P Bond	0.70%	\$9,000	
							Sub Total		\$1,294,681	
							Fee	4.00%	\$51,787	
GRAND TOTAL							\$1,346,469			



## DinoLab Furniture & Equipment

Facility Requirements	Source	Cost per	Qty	Total Cost
Flamables Cabinet - stand alone	Grainger	\$ 2,000.00	1	\$ 2,000.00
Storage Cabinets (glass door for viewing)	Delta Designs	3,500.00	4	14,000.00
Electric motorized trolley chain hoist 6K - 20 foot lift	Grainger	12,000.00	1	12,000.00
Mobile Tables	RDM Industrial Products	2,500.00	6	15,000.00
Lift and tilt tables (ground level or not)	Autoquip, Crucible Coop	12,000.00	6	72,000.00
Sanbox with garnet sand and sandbags		600.00	1	600.00
<b>Total Facility Requirements</b>				<b>\$ 115,600.00</b>



Friends of the North Carolina Museum of Natural Sciences

February 5, 2018

Ms. Jessica Holmes  
Wake County Board of Commissioners  
Wake County  
P.O. Box 550  
Raleigh, NC 27602

Dear Chairperson Holmes:

RE: Wake County's RFP for high-impact capital projects

Following a two-year assembly of a robust approach to the phenomenal *Dueling Dinosaurs* opportunity, and speaking on behalf of Museum Director Dr. Emlyn Koster, his team, and the nonprofit Friends of the Museum, I have the great pleasure of writing to support the application for capital funds in response to this year's RFP from the Wake County Board of Commissioners.

Imagine strolling down Jones Street to observe the two most complete specimens of the two most popular dinosaurs, preserved together in an apparent predator-prey situation, from 68 million year ago. Now imagine the pride in knowing that the NC Museum of Natural Sciences has been selected from across the entire United States by the Montana discovery team to be the showcase venue. This features preparation and research in the public eye, onsite and online education, citizen science projects and an innovative exhibition for all ages and stages of learning.

There are many aspects of *Dueling Dinosaurs* I could convey as to why this is the right project for this funding, but I will focus on two. First, this once-in-a-lifetime opportunity allows citizens of Raleigh, Wake County and our state to participate in the creation of new knowledge about the dinosaurian world, the world's most popular subject in science. These specimens, even in their raw state, have provided glimpses of new discoveries. Second, as noted in our application, there is a substantial economic impact in addition to an opportunity for unprecedented profile and cultural impacts for Raleigh, Wake County, the Research Triangle, and North Carolina as a whole.

Since 1979 when the Museum celebrated its 100<sup>th</sup> anniversary, the Friends organization has been involving the community, promoting awareness, attracting partners, and raising funds for the Museum. Our Board encompasses dedicated individuals representing the corporate, civic, university, education and nonprofit entities that make up our region. It is with their collective voice that I express profound gratitude for your Board's consideration of our request for capital assistance at a vital moment.

The Friends Board cemented its commitment to this project on August 16, 2017, when the Executive Committee approved a motion to enter into contract to purchase the Dueling Dinosaurs for up to \$6,000,000 with a down payment of \$2,000,000 from the Friends unrestricted funds.

I conclude by expressing appreciation for Wake County's interlocal support for the Museum's pioneering Nature Research Center wing that opened on Earth Day in 2012. Without that bold investment, this Museum would not have advanced to become one of the world's most head-turning museums nor would we be in a position to acquire these amazing specimens.

Wake County's participation in this exciting opportunity will demonstrate an ever-deepening partnership with the museum that is so vital to our community.

Sincerely,

A handwritten signature in black ink, appearing to read 'Anita Watkins', with a stylized flourish at the end.

Anita Watkins

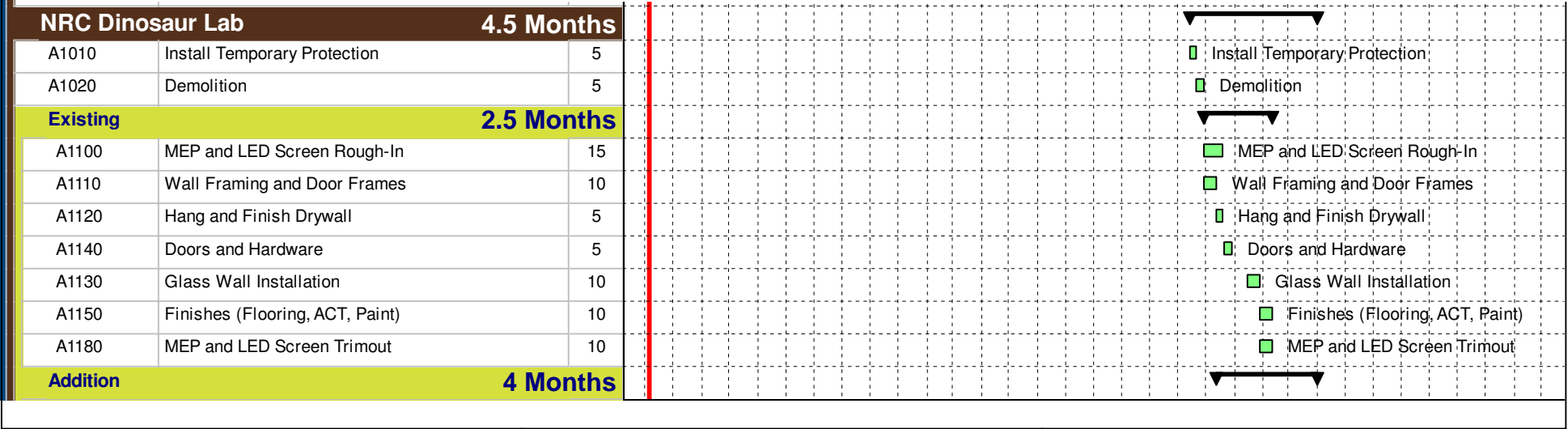
President, Board of Directors

Friends of the NC Museum of Natural Sciences

CC: Emlyn Koster, PhD, Director of the Museum  
Angela Baker-James, Executive Director of the Friends of the Museum

Activity ID	Activity Name	Orig Dur	Month																																
			-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

Construction Schedule





[illegible]

# ***Dueling Dinosaurs Education Program***

The fossils known as “Dueling Dinosaurs” represent an unprecedented opportunity to engage students in the research process as it relates to one of the most significant scientific discoveries of our time. The following represents a comprehensive plan to reach North Carolinians through an integrated state-wide approach.

## **Onsite**

**Research Lab** - The development of a new research lab within the Museum to facilitate the preparation and study of the specimens while maintaining maximum visitor interaction. Lab features include transparent walls to both indoor and street-scape visitors; movable and zoomable cameras that visitors can manipulate; adjacent interpretive exhibits. Recent evaluation studies demonstrate the power of having microphones and speakers so that visitors can interact with research scientists. This work will help guide the design of these communication tools. A robust Paleontology docent program developed and managed by Research Lab staff and focused on interpreting preparatory activities happening in real-time in the lab as well as the scientific significance of discoveries made during the three-year preparatory period will allow for content-rich, one-on-one interactions between trained docents and visitors.



**School Programs** - The Dueling Dinosaurs provide multiple links to the standard course of study for students in all grades throughout North Carolina, across the United States and around the world. Curriculum correlated educational materials will be provided, and programs will be developed in



order to take advantage of this unique learning opportunity. Programs may take place in the Investigate Labs, Curiosity Classes or Discovery Room.

**Public Programs** - Dinosaurs are a favorite topic for visitors of all ages. Programs highlighting Dueling Dinosaurs will be offered in the auditorium, Daily Planet theater and at special events. Additionally, the public can participate in activities in the Investigate Labs.

## **Online**

**Website** - Dueling Dinosaurs will be highlighted in a resource rich section of the Museum website. Opportunities for online learning might include a high definition scan of the fossil that will be updated regularly as the preparation takes place. This scan will have links to new research and new questions as the specimen is being prepared. Another interactive activity might be focused on careers. A recent pilot study using avatars of researchers indicated a high degree of interest in learning about careers through this mechanism. Dueling Dinosaurs is linked to many areas of science and can provide real-world examples for future scientists.

**Interactive Livestreams** - We intend to provide live streaming video of the paleo research as it is being done, hosted by an engaging educator. With a proven record of reaching students, teachers and the general public via interactive videoconferencing we have a built-in audience for this material. Additionally, we hope to engage our partners in the Regional Network institutions to host streaming events for the public and students alike.

## **Offsite/Outdoors**

**Citizen Science** - Dueling Dinosaurs will lead to the development of an engaging citizen science project for students focusing on micro-fossils and the surrounding ecology of the site. Students will receive matrix removed from the fossil and then search it for microfossils. They will send their specimens and findings back to the museum to help build a complete picture of the ecosystem surrounding the dinosaurs. The Mastodon Matrix (<https://scistarter.com/project/250-Mastodon-Matrix-Project#sthash.wj4uZejY.dpbs>) project is a good example.

**Professional Development** - Teachers serve as outreach arms for bringing the Duel Dinosaurs to students and classrooms. Teacher professional development programs will highlight the use of the citizen science program and pre/post lessons for the live streaming programs. An Educator of Excellence Institute will be developed so that teachers can visit the dig sites and then help develop the curriculum materials. We will develop a training program for paleo professionals in order to make our materials more broadly accessible.

**Outreach Programming** - We plan to engage with a network of trained undergraduate/graduate students to act as hosts at Regional Network institutions to help facilitate the streaming events, as well as recruiting school classrooms to participate in the citizen science project. Dueling Dinosaurs will be incorporated into current outreach programs, such as those presented to libraries across the state.

FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Financial Statements

June 30, 2016 and 2015

(With Independent Auditors' Report Thereon)



**BATCHELOR, TILLERY & ROBERTS, LLP**

CERTIFIED PUBLIC ACCOUNTANTS

POST OFFICE BOX 18068

RALEIGH, NORTH CAROLINA 27619

RONALD A. BATCHELOR  
ANN H. TILLERY  
FRANKLIN T. ROBERTS  
WM. JAMES BLACK, JR.  
SCOTT E. CABANISS

3605 GLENWOOD AVENUE, SUITE 350  
RALEIGH, NORTH CAROLINA 27612  
TELEPHONE (919) 787-8212  
FACSIMILE (919) 783-6724

**Independent Auditors' Report**

The Board of Directors  
Friends of the North Carolina State Museum  
of Natural Sciences:

**Report on the Financial Statements**

We have audited the accompanying financial statements of Friends of the North Carolina State Museum of Natural Sciences (a nonprofit organization) (the "Organization"), which comprise the statements of financial position as of June 30, 2016 and 2015, and the related statements of activities, functional expenses, and cash flows for the years then ended, and the related notes to the financial statements.

***Management's Responsibility for the Financial Statements***

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

***Auditors' Responsibility***

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### ***Opinion***

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Organization as of June 30, 2016 and 2015, and the changes in its net assets and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

### ***Other Matters***

Our audits were conducted for the purpose of forming an opinion on the financial statements as a whole. The accompanying schedule of expenditures of federal and state awards, as required by Title 2 U.S. *Code of Federal Regulations* (CFR) Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*, is presented for purposes of additional analysis and is not a required part of the financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated, in all material respects, in relation to the financial statements as a whole.

### ***Other Reporting Required by Government Auditing Standards***

In accordance with *Government Auditing Standards*, we have also issued our report dated December 6, 2016 on our consideration of the Organization's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Organization's internal control over financial reporting and compliance.

*Batchelor, Jillery & Roberts, LLP*

December 6, 2016

FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Statements of Financial Position

June 30, 2016 and 2015

	<u>2016</u>	<u>2015</u>
<u>Assets</u>		
Cash and cash equivalents, partially restricted	\$ 5,703,997	4,777,396
Accounts and grants receivable, net	618,617	497,680
Prepaid expenses	414,121	406,455
Inventories	134,884	137,295
Contributions receivable, net	1,251,108	2,194,065
Equipment and leasehold improvements, net	86,423	106,886
Total assets	\$ <u>8,209,150</u>	<u>8,119,777</u>
<u>Liabilities and Net Assets</u>		
Liabilities:		
Accounts payable and accrued expenses	332,652	295,250
Agency funds payable	378,522	422,002
Deferred revenue	172,552	89,023
Note payable	144,143	146,266
Total liabilities	<u>1,027,869</u>	<u>952,541</u>
Net assets:		
Unrestricted	(120,757)	(52,556)
Temporarily restricted	7,202,038	7,119,792
Permanently restricted	100,000	100,000
Total net assets	<u>7,181,281</u>	<u>7,167,236</u>
Total liabilities and net assets	\$ <u>8,209,150</u>	<u>8,119,777</u>

See accompanying notes to financial statements.

FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Statements of Activities

Year ended June 30, 2016, with comparative totals for 2015

	2016				
	<u>Unrestricted</u>	<u>Temporarily restricted</u>	<u>Permanently restricted</u>	<u>Total</u>	<u>2015</u>
Support and revenue:					
Contributions	\$ 381,620	874,178	-	1,255,798	1,616,428
Governmental grants	914,241	-	-	914,241	1,172,717
Donated facilities and goods	80,302	-	-	80,302	100,794
Sales of Museum Stores	1,036,384	-	-	1,036,384	1,079,251
Admission events, special exhibitions and educational movies	416,605	-	-	416,605	755,628
Facility use	399,567	-	-	399,567	306,632
Membership dues	207,253	-	-	207,253	242,274
Interest income	10,744	-	-	10,744	12,002
Other income	<u>17,360</u>	<u>-</u>	<u>-</u>	<u>17,360</u>	<u>7,455</u>
	3,464,076	874,178	-	4,338,254	5,293,181
Net assets released from donor restrictions	<u>791,932</u>	<u>(791,932)</u>	<u>-</u>	<u>-</u>	<u>-</u>
Total support and revenue	<u>4,256,008</u>	<u>82,246</u>	<u>-</u>	<u>4,338,254</u>	<u>5,293,181</u>
Expenses:					
Program services	<u>3,711,292</u>	<u>-</u>	<u>-</u>	<u>3,711,292</u>	<u>4,149,312</u>
Supporting services:					
Management and general administration	347,753	-	-	347,753	437,884
Fundraising	<u>265,164</u>	<u>-</u>	<u>-</u>	<u>265,164</u>	<u>87,183</u>
Total supporting services	<u>612,917</u>	<u>-</u>	<u>-</u>	<u>612,917</u>	<u>525,067</u>
Total operating expenses	<u>4,324,209</u>	<u>-</u>	<u>-</u>	<u>4,324,209</u>	<u>4,674,379</u>
Change in net assets	(68,201)	82,246	-	14,045	618,802
Net (deficit) assets, beginning of year	<u>(52,556)</u>	<u>7,119,792</u>	<u>100,000</u>	<u>7,167,236</u>	<u>6,548,434</u>
Net (deficit) assets, end of year	\$ <u><u>(120,757)</u></u>	<u><u>7,202,038</u></u>	<u><u>100,000</u></u>	<u><u>7,181,281</u></u>	<u><u>7,167,236</u></u>

(Continued)



FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Statements of Activities, Continued

Year ended June 30, 2015

	<u>Unrestricted</u>	<u>Temporarily restricted</u>	<u>Permanently restricted</u>	<u>Total</u>
Support and revenue:				
Contributions	\$ 198,445	1,417,983	-	1,616,428
Governmental grants	1,172,717	-	-	1,172,717
Donated facilities and goods	100,794	-	-	100,794
Sales of Museum Stores	1,079,251	-	-	1,079,251
Admission events, special exhibitions and educational movies	755,628	-	-	755,628
Facility use	306,632	-	-	306,632
Membership dues	242,274	-	-	242,274
Interest income	12,002	-	-	12,002
Other income	7,455	-	-	7,455
	<u>3,875,198</u>	<u>1,417,983</u>	<u>-</u>	<u>5,293,181</u>
Net assets released from donor restrictions	<u>1,003,914</u>	<u>(1,003,914)</u>	<u>-</u>	<u>-</u>
Total support and revenue	<u>4,879,112</u>	<u>414,069</u>	<u>-</u>	<u>5,293,181</u>
Expenses:				
Program services	<u>4,149,312</u>	<u>-</u>	<u>-</u>	<u>4,149,312</u>
Supporting services:				
Management and general administration	437,884	-	-	437,884
Fundraising	87,183	-	-	87,183
Total supporting services	<u>525,067</u>	<u>-</u>	<u>-</u>	<u>525,067</u>
Total operating expenses	<u>4,674,379</u>	<u>-</u>	<u>-</u>	<u>4,674,379</u>
Change in net assets	204,733	414,069	-	618,802
Net (deficit) assets, beginning of year	<u>(257,289)</u>	<u>6,705,723</u>	<u>100,000</u>	<u>6,548,434</u>
Net (deficit) assets, end of year	\$ <u>(52,556)</u>	<u>7,119,792</u>	<u>100,000</u>	<u>7,167,236</u>

See accompanying notes to financial statements.

FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Statements of Functional Expenses

Year ended June 30, 2016, with comparative totals for 2015

		2016					
		Supporting Services					
		Program Services	Management and general	Fundraising	Total	Totals	2015
Salaries and wages	\$	1,016,320	99,069	123,821	222,890	1,239,210	1,219,925
Inventory costs		474,324	-	-	-	474,324	492,506
Contracted services		447,091	1,024	18,463	19,487	466,578	566,291
Materials and supplies		296,156	3,922	4,826	8,748	304,904	291,672
Exhibitor fees		253,805	-	-	-	253,805	326,362
Office expenses		155,307	23,340	28,974	52,314	207,621	277,810
Travel		178,856	4,756	921	5,677	184,533	170,263
Advertising and promotions		166,055	556	5,811	6,367	172,422	211,585
Employee benefits		115,458	23,431	9,136	32,567	148,025	137,488
Accounting services		35,951	89,805	-	89,805	125,756	122,821
Payroll taxes		95,066	8,764	10,721	19,485	114,551	125,190
Payments to affiliates		71,589	-	-	-	71,589	73,972
Royalties		59,778	-	-	-	59,778	49,983
Dues and subscriptions		34,148	9,822	11,215	21,037	55,185	38,033
Occupancy		23,360	25,000	-	25,000	48,360	48,360
Depreciation and amortization		19,925	25,849	-	25,849	45,774	43,607
Refreshments		3,584	27	24,071	24,098	27,682	46,866
Insurance		4,355	10,118	-	10,118	14,473	15,672
Repairs and maintenance		12,127	-	-	-	12,127	18,174
Information technology		1,183	7,984	-	7,984	9,167	9,080
Other		246,854	14,286	27,205	41,491	288,345	388,719
	\$	3,711,292	347,753	265,164	612,917	4,324,209	4,674,379

(Continued)

FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Statements of Functional Expenses, Continued

Year ended June 30, 2015

			Supporting Services		
	Program Services	Management and general	Fundraising	Total	Totals
Salaries and wages	\$ 1,034,575	135,274	50,076	185,350	1,219,925
Contracted services	564,348	795	1,148	1,943	566,291
Inventory costs	492,506	-	-	-	492,506
Exhibitor fees	326,362	-	-	-	326,362
Materials and supplies	286,010	5,470	192	5,662	291,672
Office expenses	257,303	11,817	8,690	20,507	277,810
Advertising and promotions	206,577	852	4,156	5,008	211,585
Travel	169,143	1,096	24	1,120	170,263
Employee benefits	104,040	24,242	9,206	33,448	137,488
Payroll taxes	109,687	11,104	4,399	15,503	125,190
Accounting services	44,946	77,875	-	77,875	122,821
Payments to affiliates	73,972	-	-	-	73,972
Royalties	49,983	-	-	-	49,983
Occupancy	23,360	25,000	-	25,000	48,360
Refreshments	46,866	-	-	-	46,866
Depreciation and amortization	19,368	24,239	-	24,239	43,607
Dues and subscriptions	23,352	6,596	8,085	14,681	38,033
Repairs and maintenance	18,049	125	-	125	18,174
Insurance	5,312	10,360	-	10,360	15,672
Information technology	1,321	7,759	-	7,759	9,080
Other	292,232	95,280	1,207	96,487	388,719
	\$ 4,149,312	437,884	87,183	525,067	4,674,379

See accompanying notes to financial statements.

FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Statements of Cash Flows

Years ended June 30, 2016 and 2015

	<u>2016</u>	<u>2015</u>
Cash flows from operating activities:		
Change in net assets	\$ 14,045	618,802
Adjustments to reconcile change in net assets to net cash provided by operating activities:		
Bad debt expense	51,132	-
Depreciation and amortization	45,774	43,607
Changes in operating assets and liabilities:		
Accounts and grants receivable and other assets	(128,603)	13,745
Inventories	2,411	6,684
Contributions receivable	891,825	(102,305)
Accounts payable and accrued expenses	37,402	27,346
Deferred revenue	83,529	4,601
Net cash provided by operating activities	<u>997,515</u>	<u>612,480</u>
Cash flows used in investing activities - purchases of equipment	<u>(25,311)</u>	<u>(1,399)</u>
Cash flows from financing activities:		
Repayment on note payable	(2,123)	-
Agency funds payable	<u>(43,480)</u>	<u>(4,953)</u>
Net cash used in financing activities	<u>(45,603)</u>	<u>(4,953)</u>
Net increase in cash and cash equivalents	926,601	606,128
Cash and cash equivalents, beginning of year	<u>4,777,396</u>	<u>4,171,268</u>
Cash and cash equivalents, end of year	\$ <u>5,703,997</u>	<u>4,777,396</u>

See accompanying notes to financial statements.



FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Notes to Financial Statements

June 30, 2016 and 2015

(1) Organization and Summary of Significant Accounting Policies

(a) Nature of Activities

Friends of the North Carolina State Museum of Natural Sciences (the "Organization") is a private, nonprofit entity organized on March 29, 1979 for the purpose of preserving, developing, enhancing, advancing and sustaining North Carolina's natural heritage through The North Carolina State Museum of Natural Sciences (the "Museum"), a division of the State of North Carolina's Department of Environment and Natural Resources. Functions of the Organization include the Museum Store and the Center Store, which sell educational and souvenir items representative of the natural sciences to Museum visitors; special exhibitions and theater operations; membership office; Museum rental operations; grant and contribution management; food service contract management and event planning. Each organizational function operates under the singular goal of supporting the Museum.

The Nature Research Center (the "Center") is the new wing of the Museum, which opened in April, 2012. The Center brings research scientists and their work into the public eye, helps demystify what can be an intimidating field of study, better prepares science educators and students, and inspires a new generation of young scientists. The Museum will have ownership of any assets acquired as a result of the Organization's support of the Center.

The Organization is supported by membership dues, contributions, government grants, admission charges for special exhibitions and the theater, fund-raising projects, facility use fees and gift shop sales. The Organization is dependent on such revenue sources to continue operating and supporting the Museum and its programs.

(b) Basis of Presentation and Use of Estimates

The accompanying financial statements have been prepared on the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America. The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of changes in net assets during the reporting period. Actual results could differ from those estimates.

FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Notes to Financial Statements, Continued

June 30, 2016 and 2015

(1) Organization and Summary of Significant Accounting Policies, Continued

(c) Contributions and Net Assets

Net assets and revenues, expenses, gains and losses are classified based on the existence or absence of donor-imposed restrictions. Accordingly, net assets of the Organization and changes therein are classified and reported as follows:

Unrestricted net assets: Net assets that are not subject to donor-imposed stipulations.

Temporarily restricted net assets: Net assets subject to donor-imposed stipulations that may or will be met either by actions of the Organization and/or by the passage of time.

Permanently restricted net assets: Net assets subject to donor-imposed stipulations that they be maintained permanently by the Organization.

Unconditional promises to give (contributions receivable) that are expected to be collected within one year are recorded at their net realizable value. Unconditional promises to give that are expected to be collected in future years are recorded at the present value of estimated future cash flows. The discounts on those amounts are computed using a risk-adjusted interest rate applicable to the year in which the promise is received. Amortization of the discount is included in contribution revenue. Conditional promises to give are not included as support until such time as the conditions are substantially met.

Contributions received are recognized as revenues at their fair values when they become unconditional. Contributions with donor-imposed restrictions are recorded as temporarily restricted net assets until the restrictions are met or permanently restricted if the donor has specified that the gift principal remain intact. When donor imposed restrictions have been met, contributions previously reported as temporarily restricted are reported as net assets released from donor restrictions.

Donated facilities and goods are recorded as unrestricted support at their fair value on the date of the donation with a corresponding amount recorded as a program or supporting service expense based on the nature of the donation.

Museum Store sales are recognized at the point of sale. Any vendor allowances or rebates are recognized in costs of sales of Museum Store in accordance with vendor agreements and as the related inventories are sold. Admission charges for traveling exhibits are recognized as revenue as utilized by Museum visitors.

FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Notes to Financial Statements, Continued

June 30, 2016 and 2015

(1) Organization and Summary of Significant Accounting Policies, Continued

(c) Contributions and Net Assets, Continued

Substantially all grants and awards are considered to be contributions and are reported as temporarily restricted revenues as a result of requirements to be spent for certain purposes. These grants are recognized as contributions based on the underlying characteristics of the agreements and awards.

(d) Cash and Cash Equivalents

The Organization considers all highly liquid debt investments with a maturity date of three months or less at the date of purchase to be cash equivalents. At times, the Organization maintains deposits with financial institutions in amounts that are in excess of federal insurance limits.

(e) Inventories

The Museum Stores' inventory is valued at the lower of average cost or market.

(f) Contributions and Other Receivables

Management evaluates contributions and other receivables for collectability at least annually. Allowances for doubtful accounts of approximately \$73,000 and \$21,500 were recorded as of June 30, 2016 and 2015 for contributions receivable, respectively. As of June 30, 2016 and June 30, 2015, the Organization recorded an allowance for doubtful accounts of approximately \$22,000 and \$7,500 for accounts and grants receivable, respectively.

(g) Equipment and Leasehold Improvements

Equipment and leasehold improvements are stated at cost less accumulated depreciation and amortization. Depreciation and amortization are computed by the straight-line method over the estimated useful lives of the assets or the expected duration of the lease, as appropriate.

The Organization reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. When necessary, the Organization records charges for impairments of long-lived assets for the amount by which the present value of future cash flows, or some other fair value measure, is less than the carrying value of these assets.

FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Notes to Financial Statements, Continued

June 30, 2016 and 2015

(1) Organization and Summary of Significant Accounting Policies, Continued

(h) Agency Funds Payable

Agency funds are generally funds received by the Organization for the exclusive use of the Museum Director. The Organization exhibits no variance power over the agency funds. Asset transfers to these funds (and related distributions and expenses) are not reflected in change in net assets in the Organization's statement of activities. Assets are included in the statement of financial position and a corresponding liability is recorded to reflect the intent that the assets will eventually be transferred on behalf of the Museum Director.

(i) Deferred Revenue

Deferred revenue represents fees received prior to year-end for events to be held in the next year.

(j) Special Exhibition Expense

Special exhibition costs are incurred with an expectation that those costs will directly or indirectly result in future admission charge revenue. However, management cannot reasonably estimate the amount of revenue that will ultimately be generated. As a result of this uncertainty, it is the Organization's policy to expense special exhibition costs as incurred.

(k) Advertising

The Organization expenses advertising costs as incurred or the first time the advertising takes place. Advertising expense was approximately \$172,000 and \$212,000 for 2016 and 2015, respectively.

(l) Income Taxes

The Organization is exempt from income taxes under Section 501(c)(3) of the Internal Revenue Code and is generally exempt from state income taxes under the provisions of the North Carolina Nonprofit Corporation Act. Therefore, no provision for income taxes has been reflected in the accompanying financial statements.

(m) Expense Allocations

The Organization presents certain expenses related to the direct support of the Museum's programs as program services in these financial statements. Certain costs have been allocated, based on management's judgment, to program and supporting activities.



FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Notes to Financial Statements, Continued

June 30, 2016 and 2015

(1) Organization and Summary of Significant Accounting Policies, Continued

(n) Contributed Services

A substantial number of unpaid volunteers have made contributions of their time to assist in the Organization's programs. The value of this contributed time is not reflected in these statements since the services do not meet the criteria for recognition under GAAP.

(2) Contributions Receivable

Unconditional promises to give are included in the financial statements as contributions receivable and contributions in the appropriate net asset category. Contributions expected to be received in periods greater than one year are recorded at the discounted present value of the future cash flows.

Unconditional promises to give are expected to be realized in the following future periods:

	<u>2016</u>	<u>2015</u>
Less than one year	\$ 1,135,734	1,916,595
One to five years	<u>202,001</u>	<u>316,450</u>
	1,337,735	2,233,045
Less unamortized discount (0.45% - 1.01%)	(13,627)	(17,112)
Less allowance for doubtful accounts	<u>(73,000)</u>	<u>(21,868)</u>
	\$ <u>1,251,108</u>	<u>2,194,065</u>

(3) Inventories

Inventories consist of the following:

	<u>2016</u>	<u>2015</u>
Toys	\$ 34,434	32,430
Books	14,621	16,235
Jewelry	18,015	19,178
Clothing	7,052	7,764
Rocks	7,917	9,089
Other	<u>52,845</u>	<u>52,599</u>
	\$ <u>134,884</u>	<u>137,295</u>

FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Notes to Financial Statements, Continued

June 30, 2016 and 2015

(3) Inventories, Continued

The cost of sales of the Museum Stores includes salaries, benefits and other direct costs of \$424,731 in 2016 and \$443,991 in 2015. Cost of sales also includes in-kind rent expense of \$23,000 to the Museum for 2016 and 2015.

(4) Equipment and Leasehold Improvements

Equipment and leasehold improvements consist of the following:

	<u>2016</u>	<u>2015</u>
Furniture and equipment	\$ 366,962	362,607
Software	121,185	121,185
Leasehold improvements	<u>308,640</u>	<u>287,685</u>
	796,787	771,477
Less accumulated depreciation and amortization	<u>(710,364)</u>	<u>(664,591)</u>
	\$ <u>86,423</u>	<u>106,886</u>

(5) Note Payable

Note payable consists of the following:

	<u>2016</u>	<u>2015</u>
Note payable to Capitol Broadcasting Company, Inc. to finance the conversion of the existing theatre to the WRAL 3-D Theater. Repayments are due each September 1st, in an amount equal to 25% of the net revenue derived from the operation of the 3-D theater during the previous fiscal year.		
	\$ <u>144,143</u>	<u>146,266</u>

(6) Line of Credit

The Organization has a \$500,000 bank unsecured line of credit, which expires on May 5, 2017. Interest is due monthly on any outstanding balance based upon the prime rate less 0.25% (3.25% and 3.00% as of June 30, 2016 and 2015, respectively). There was no outstanding balance on the line of credit as of June 30, 2016 or 2015.

FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Notes to Financial Statements, Continued

June 30, 2016 and 2015

(7) Museum Contribution

Under an agreement with the State of North Carolina Department of Environment and Natural Resources, the Organization is to submit 7% of the quarterly (adjusted) gross sales from the Museum Stores to the Museum for the exclusive use by the Museum Director. Expenses related to this contribution totaled \$71,589 and \$73,972 during 2016 and 2015, respectively, and are reported as Payments to affiliates in the statements of functional expenses. Amounts due to the Museum Director totaled \$21,960 and \$22,340 as of June 30, 2016 and 2015, respectively, and are included in accounts payable and accrued expenses in the accompanying statements of financial position.

(8) Net Assets

Temporarily restricted net assets are available for the following purposes:

	<u>2016</u>	<u>2015</u>
Nature Research Center	\$ 6,050,440	6,045,620
Education funds	723,340	763,593
Research and collections	421,758	304,079
Artist in residence	<u>6,500</u>	<u>6,500</u>
	\$ <u>7,202,038</u>	<u>7,119,792</u>

Permanently restricted net assets consist of the J. Donald Cline Meteorite Collection Endowment Fund. Interest derived from the fund will be used to support the care, display and acquisitions for the meteorite collection.

(9) Net Assets Released From Restrictions

During 2016 and 2015, net assets were released from donor restrictions by incurring expenses satisfying the restricted purposes or by occurrence of other events specified by the donors as follows:

	<u>2016</u>	<u>2015</u>
Education funds	\$ 445,070	569,642
Research and collections	231,611	187,033
Nature Research Center	<u>115,251</u>	<u>247,239</u>
	\$ <u>791,932</u>	<u>1,003,914</u>

FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Notes to Financial Statements, Continued

June 30, 2016 and 2015

(10) Concentrations of Risk

The Organization receives significant amounts of funding from individual donors, private foundations, and federal, state, and local government sources. Funding from these sources has a significant and ongoing impact on the Organization's operations. From time to time, funding is provided in the form of grants. The grants may be subject to periodic audits and certain costs may be questioned as not being appropriate expenditures under the grant agreements. Management is not aware of any such questioned costs and no provision has been made in the accompanying financial statements for the refund of awards.

Support and revenue and contributions receivable include amounts from one major resource provider (which accounted for more than 10% of the total support and revenue) as follows:

2016				
	<u>Support and Revenue</u>	<u>Percent of Support and Revenue</u>	<u>Gross Receivable</u>	<u>Percent of Gross Receivables</u>
Resource provider A	\$ <u>118,575</u>	<u>3</u> %	\$ <u>621,931</u>	<u>31</u> %
2015				
	<u>Support and Revenue</u>	<u>Percent of Support and Revenue</u>	<u>Gross Receivable</u>	<u>Percent of Gross Receivables</u>
Resource provider A	\$ <u>598,000</u>	<u>11</u> %	\$ <u>997,786</u>	<u>33</u> %

(11) Retirement Plan

The Organization has a 403(b) retirement plan whereby eligible employee contributions are matched 3%. Total expense for this plan for 2016 and 2015 was \$14,035 and \$11,701, respectively.

(12) Subsequent Events

The date to which events occurring after June 30, 2016, the date of the most recent statement of financial position, have been evaluated for possible adjustment to the financial statements or disclosure is December 6, 2016, the date the financial statements were available to be issued.



FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Schedule of Expenditures of Federal and State Awards

Year ended June 30, 2016

Federal or State Grantor/ Pass-through Grantor/ <u>Program Title</u>	Federal CFDA <u>Number</u>	Pass-Through <u>Grantor</u>	Pass-Through Identifying <u>Number</u>	Total <u>Expenditures</u>
<b>Federal Awards:</b>				
<b>Research and Development Cluster</b>				
<u>National Science Foundation</u>				
Biological Sciences	47.074			\$ 317,919
Computer and Information Science and Engineering	47.070			63,179
<u>Institute of Museum and Library Services</u>				
Museums for America	45.301			31,701
National Leadership Grants	45.312			4,319
<u>United States Department of Agriculture</u>				
Plant and Animal Disease, Pest Control, and Animal Care	10.025			7,338
Pass-through programs from:				
<u>National Science Foundation</u>				
Education and Human Resources	47.076	North Carolina State University	2013-1727-01	357,127
Education and Human Resources	47.076	Science Education Solutions, Inc.	TSCN-2012-1	11,744
Social, Behavioral, and Economic Sciences	47.075	Boise State University	6133-B	1,525
<u>National Aeronautics and Space Administration</u>				
Science	43.001	American Museum of Natural History	627-2016-6	18,011
<u>United States Department of Agriculture</u>				
Forestry Research	10.652	Forest Service Southern	13-JV-11330101-021	13,970
<u>United States Office of Water</u>				
National Estuary Program	66.456	North Carolina Department of Environment and Natural Resources	6270	19,309
Total federal awards				846,142
<b>State Awards:</b>				
<i>North Carolina Department of Environment and Natural Resources</i>				
	-			68,099
Total research and development cluster				\$ 914,241

(Continued)

FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Schedule of Expenditures of Federal and State Awards, Continued

Year ended June 30, 2016

Notes to the Schedule of Expenditures of Federal and State Awards

Note 1 – Basis of Presentation

The accompanying schedule of expenditures of federal and state awards includes the federal and state grant activity of the Organization and is presented on the accrual basis of accounting. The information in this schedule is presented in accordance with the requirements of Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards* (Uniform Guidance). Therefore, some amounts presented in this schedule may differ from amounts presented in, or used in the preparation of, the basic financial statements.

The Organization is not using a 10% de minimis indirect cost rate.

**BATCHELOR, TILLERY & ROBERTS, LLP**

CERTIFIED PUBLIC ACCOUNTANTS

POST OFFICE BOX 18068

RALEIGH, NORTH CAROLINA 27619

RONALD A. BATCHELOR  
ANN H. TILLERY  
FRANKLIN T. ROBERTS  
WM. JAMES BLACK, JR.  
SCOTT E. CABANISS

3605 GLENWOOD AVENUE, SUITE 350  
RALEIGH, NORTH CAROLINA 27612  
TELEPHONE (919) 787-8212  
FACSIMILE (919) 783-6724

**INDEPENDENT AUDITORS' REPORT ON INTERNAL CONTROL OVER FINANCIAL  
REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF  
FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING  
STANDARDS***

The Board of Directors

Friends of the North Carolina State Museum of Natural Sciences:

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of Friends of the North Carolina State Museum of Natural Sciences (a nonprofit organization) (the "Organization"), which comprise the statement of financial position as of June 30, 2016, and the related statements of activities, functional expenses, and cash flows for the year then ended, and the related notes to the financial statements, and have issued our report thereon dated December 6, 2016.

**Internal Control over Financial Reporting**

In planning and performing our audit of the financial statements, we considered the Organization's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Organization's internal control. Accordingly, we do not express an opinion on the effectiveness of the Organization's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected, on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

### **Compliance and Other Matters**

As part of obtaining reasonable assurance about whether the Organization's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

### **Purpose of this Report**

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Organization's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Organization's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

*Batchelor, Tillery & Roberts, LLP*

December 6, 2016

**BACHELOR, TILLERY & ROBERTS, LLP**

CERTIFIED PUBLIC ACCOUNTANTS

POST OFFICE BOX 18068

RALEIGH, NORTH CAROLINA 27619

RONALD A. BACHELOR  
ANN H. TILLERY  
FRANKLIN T. ROBERTS  
WM. JAMES BLACK, JR.  
SCOTT E. CABANISS

3605 GLENWOOD AVENUE, SUITE 350  
RALEIGH, NORTH CAROLINA 27612  
TELEPHONE (919) 787-8212  
FACSIMILE (919) 783-6724

**INDEPENDENT AUDITORS' REPORT ON COMPLIANCE FOR EACH MAJOR PROGRAM AND  
ON INTERNAL CONTROL OVER COMPLIANCE REQUIRED BY THE UNIFORM GUIDANCE**

The Board of Directors  
Friends of the North Carolina State Museum of Natural Sciences:

**Report on Compliance for Each Major Federal Program**

We have audited Friends of the North Carolina State Museum of Natural Sciences' (a nonprofit organization) (the "Organization") compliance with the types of compliance requirements described in the *OMB Compliance Supplement* that could have a direct and material effect on each of the Organization's major federal programs for the year ended June 30, 2016. The Organization's major federal programs are identified in the summary of auditors' results section of the accompanying schedule of findings and questioned costs.

***Management's Responsibility***

Management is responsible for compliance with federal statutes, regulations, and the terms and conditions of its federal awards applicable to its federal programs.

***Auditors' Responsibility***

Our responsibility is to express an opinion on compliance for each of the Organization's major federal programs based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the audit requirements of Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards* (Uniform Guidance). Those standards and the Uniform Guidance require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about the Organization's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for each major federal program. However, our audit does not provide a legal determination of the Organization's compliance.



### ***Opinion on Each Major Federal Program***

In our opinion, the Organization complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on each of its major federal programs for the year ended June 30, 2016.

### **Report on Internal Control Over Compliance**

Management of the Organization is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered the Organization's internal control over compliance with the types of requirements that could have a direct and material effect on each major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for each major federal program and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the Organization's internal control over compliance.

*A deficiency in internal control over compliance* exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis. *A material weakness in internal control over compliance* is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis. *A significant deficiency in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance. Accordingly, this report is not suitable for any other purpose.

*Batchelor, Jellery & Roberts, LLP*

December 6, 2016

FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Schedule of Findings and Questioned Costs

Year ended June 30, 2016

**SECTION I-Summary of Auditors' Results**

***Financial Statements***

Type of auditors' report issued on whether the financial statements audited were prepared in accordance with GAAP: Unmodified

Internal control over financial reporting:

- Material weaknesses identified?        Yes     X     No
- Significant deficiency identified?        Yes     X     None reported

Noncompliance material to financial statements noted?        Yes     X     No

***Federal Awards***

Internal control over major federal programs:

- Material weaknesses identified?        Yes     X     No
- Significant deficiency identified?        Yes     X     None reported

Type of auditor's report issued on compliance for major federal programs: Unmodified

Any audit findings disclosed that are required to be reported in accordance with 2 CFR 200.516(a)        Yes     X     None reported

Identification of major programs:

<u>CFDA Numbers</u>	<u>Name of Federal Program or Cluster</u>
10.025, 10.652, 43.001, 45.301, 45.312, 47.070, 47.074, 47.075, 47.076, and 66.456	Research and development

Dollar threshold used to distinguish between type A and type B programs: \$750,000

Auditee qualified as low-risk auditee?     X     Yes        No

FRIENDS OF THE NORTH CAROLINA  
STATE MUSEUM OF NATURAL SCIENCES

Summary Schedule of Findings and Questioned Costs, Continued

Year ended June 30, 2016

**SECTION II-Financial Statement Findings**

No findings.

**SECTION III-Federal Award Findings and Questioned Costs**

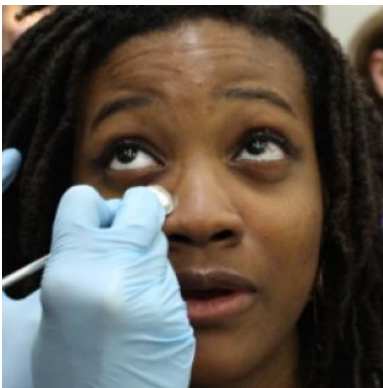
No findings.

**SECTION IV-Prior Year Award Findings and Questioned Costs**


No findings from the prior year.

## Views

# NEXT GENERATION MUSEUM-UNIVERSITY PARTNERSHIPS



Posted by Emlyn Koster  
 (/community/member-  
 directory/emlyn-koster)  
 January 19, 2015

 ISE-University Partnerships  
 (/taxonomy-term/ise-university-  
 partnerships), Project Spotlights  
 (/taxonomy-term/project-  
 spotlights)

*This article was co-written by  
 Emlyn Koster, Director of the North*

*Carolina Museum of Natural Sciences  
 (<http://naturalsciences.org/>) and Adjunct Professor at North  
 Carolina State University (NCSU) (<https://www.ncsu.edu/>), and  
 Jason Cryan, Deputy Museum Director for Research and  
 Collections at the North Carolina Museum of Natural Sciences  
 (<http://naturalsciences.org/>) and Adjunct Professor at NCSU  
 (<https://www.ncsu.edu/>).*

Collections-based museums of nature and science [1], as one of  
 their defining features, employ research scientists and curatorial  
 professionals who specialize in the basic disciplines of taxonomy  
 and systematics, evolutionary and ecological investigations,

geology and mineralogy, paleontology, and the history of science and technology. Additional fields are increasingly represented in museum research, including astrophysics, genomics, microbiology, and veterinary medicine.

## Types of Museum-University Collaborations

Traditionally, museum scientists aspiring to build research programs struggled with a sense of isolation without consistent access to the undergraduate and graduate student populations, and the network of established research professors, available to university-based researchers. In part to alleviate this isolation, museum-based scientists have sought adjunct appointments with affiliated departments at partner universities. In what we here consider *first-generation* connections, museum scientists establish basic links with academia that may yield opportunities for collaborative research projects with university scientists and open potential avenues for university students to be mentored by museum researchers. In this model, museum scientists voluntarily participate as lecturers in campus-based, formal education, but those activities are not typically considered as a part of their official job expectations. Such associations benefit the university departments in that they gain expertise in scientific sub-disciplines that may not be strongly represented by their full-time faculty, thereby expanding the potential breadth of their academic portfolio for little or no cost.

In what we call *second-generation* affiliations, university faculty seek more formal associations with science museums. These are often predicated not only by the need to work with natural science collections, but also to develop outreach and educational opportunities to augment the broader impacts of their grant proposals. Museums represent a unique conduit for researchers to translate their science from the laboratory to the public, typically offering a staff of educators skilled in public science communication, daily visitation by schools and the public with a predisposition to science curiosity, and the ability to accommodate new outreach initiatives. In this model, the involvement of university researchers in the museum sphere can open avenues of research collaboration and greater participation with museum scientists. To promote and facilitate such associations, many museums now have policies to accord adjunct or affiliate status to university scientists.

The North Carolina Museum of Natural Sciences (NCMNS) (<http://www.naturalsciences.org>) is an example of what we consider a *third-generation* of association between museums and academia. On its staff are seven scientists jointly appointed and



co-funded by the NCMNS and partner institutions in the University of North Carolina System. Recruited by the NCMNS and the affiliated university department, these positions operate with a mostly 55% museum and 45% university commitment ratio. At the museum, they coordinate publically viewable research laboratories, participate in science outreach and education programs, deliver frequent public presentations, inform exhibit developments and updates, and are key players in special events, including those for fundraising. At their partner universities, they have formal teaching responsibilities, advise students, and participate in departmental committees, meetings, and other administrative functions.

Although there are challenges associated with these joint-appointment positions, including having dual administrative reporting structures, the emergent benefits of third-generation partnerships are exciting because they solidify the bridge between the museum and academia. Researchers in publicly viewable research laboratories at the NCMNS experience a more engaging position than they imagine would have ensued in a traditional academic career: the numbers and diversity of new staff, research students, and citizen science project volunteers who are drawn to their opportunities have been rising. Their research topics have high public interest with a more newsworthy flair, and their media-generating research accomplishments are highlighted by both the Museum and the university. These opportunities also raise the profile of broader impacts within grant proposals.



*An example of a citizen science project at NCMNS engages the fascination of visitors about microorganisms living on their faces, in their armpits, and the impacts of soaps and deodorants.*

Citizen science projects are a growing manifestation of museum-university partnerships (<http://blogs.discovermagazine.com/citizen-science-salon/2014/12/16/citizen-science-north-carolina-museum-natural-sciences/#.VJR-UI4AKD>) with strong potential to increase the volume and variety of ways for the public to engage in research opportunities (<https://sciences.ncsu.edu/news/menninger-to-lead-colleges-public-science-efforts-2/>).

## **Recent Programs and Events Linking NCMNS with Partner Universities**

In the three years since the NCMNS opened its new wing, the Nature Research Center (<http://naturalsciences.org/nature-research-center>), jointly appointed research staff have made substantial impacts in the museum, university, and public domains with several high-profile discoveries, research innovations, and participation in organizing and hosting major scientific conferences. Examples include:

A NCMNS researcher jointly appointed at North Carolina State University was recently awarded a grant from the U.S. Department of State, in association with the American Alliance of Museums (AAM), to initiate a camera-trapping research project with natural history museums in Guadalajara (Mexico) and Mumbai (India), with the goals to identify local wildlife, improve community awareness of it, and promote cultural exchange.

Last May, NCMNS hosted the first "Symposium on Animal Movement and the Environment (<http://amovee2014.com/program/>)".

In March 2014, NCMNS hosted the 111th meeting of the North Carolina Academy of Science with a theme of "Applying Evolution to Medicine and the Environment ([http://www.ncsciencefestival.org/2014\\_event/ncas-2014/](http://www.ncsciencefestival.org/2014_event/ncas-2014/))".

Last June, NCMNS co-hosted the Evolution 2014 (<http://evolution2014.org/>) conference—the joint annual meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and the American Society of Naturalists—with the NSF-funded National Evolutionary Synthesis Center as well as Duke University, North Carolina State University, and the University of North Carolina at Chapel Hill, attracting nearly 2,000 evolutionary biologists from around the world.

Enhancing this third-generation form of association, NCMNS has a co-chaired informal advisory body called the University-Museum Science Forum (UMSF) comprising administrators and researchers from the Museum and several North Carolina universities as well as representatives from other research-related organizations. The UMSF is an effective vehicle for inter-institutional communication and it functions as an incubator for ideas and strategies to plan, add to, and improve cross-functional and collaborative research and educational programs.

## The Resulting Big Picture

With a growing emphasis on science literacy and an appetite for STEM training and meaningful interactions with the scientific community, it is society-at-large who is the ultimate beneficiary of deepening museum-university partnerships. While universities generate the vast majority of new scientific information, museums – especially those with the second and third-generation types of academic affiliations – are adding to their research acumen by attracting faculty, student, public and school partners.

[1] This article refers to government, private and not-for-profit science museums, or hybrids of these. University-based museums differ in that, typically, their curatorial staff are university faculty.

---

Photo credit: Lea Shell, M.Ed. Curator of Digital Media Your Wild Life Team | Rob R. Dunn Lab North Carolina State University <http://education.yourwildlife.org/> (<http://education.yourwildlife.org/>)

# **MUSEUM DIRECTOR EMLYN KOSTER RECEIVES THAD EURE JR. MEMORIAL AWARD**

For immediate release - September 14, 2015

Contact: [Emelia Cowans-Taylor](#), 919.707.9837. Images available upon request

## **MUSEUM DIRECTOR EMLYN KOSTER RECEIVES THAD EURE JR. MEMORIAL AWARD AT 2015 GRCVB ANNUAL MEETING**

RALEIGH — North Carolina Museum of Natural Sciences Director Emlyn Koster, Ph.D. was in the winners' circle at the 2015 Greater Raleigh Convention and Visitors Bureau (GRCVB) Annual Meeting last Thursday, August 27, held at the Raleigh Convention Center. Koster won the Thad Eure Jr. Memorial Award, the Bureau's longest running and most prestigious award recognizing an individual or organization that has made a major impact on the Wake County hospitality industry.

In October 2014, Koster and Museum staff hosted the annual conference of the Association of Science–Technology Centers, drawing more than 1,700 delegates representing 42 countries, and generating \$2.25 million dollars of direct visitor spending. Many of the conference sessions were held at the Raleigh Convention Center. This was the second large-scale gathering hosted by the Museum. Evolution 2014, the premier annual opportunity for sharing scientific research related to evolution, brought close to 2,000 attendees from 38 countries to the Triangle. Future international conferences coming to the Museum include The Wildlife Society Annual Conference in Fall, 2016 and CitSci2017, the annual meeting of the Citizen Science Association, February 23 – 25, 2017.

“The external meaning of the Museum as an intensely collaborative institution starts locally and extends globally,” says Koster. “All of us at the Museum are thrilled to be part of such a vibrant community that continues to be ranked among many impressive urban metrics to gauge the standards of living, learning, working and playing. Those in the business community can certainly rely on this Museum doing its part, providing superior learning opportunities for the next generation of scientists and leaders and being the perfect iconic location for many organizations to host events that bolster the economy in the Triangle.”

The theme of this year's meeting was Brand Raleigh, a new destination brand strategy campaign that shows that Raleigh is more than a blossoming Southern metropolis. It's a place where visitors feel enriched and energized by its smart, savvy, bright-minded locals who head top-tier technology, education and life science institutions; cultural and culinary touchstones; and storytellers who proudly carry on the collective heritage of a rich, historic capital city. Koster was featured during a presentation by GRCVB Marketing Director Jonathan Freeze, to illustrate how local visionaries will be highlighted throughout the campaign. For more information about Brand Raleigh, visit, [www.raleighncbrand.com](http://www.raleighncbrand.com).





## PRESS RELEASE

February 23, 2017

[Jonathan Pishney](#), (919) 707-8083  
[Michele Walker](#), (919) 807-7429

### N.C. Museum of Natural Sciences Receives Highest National Recognition



Click [here](#) to download a high resolution version of this image.

RALEIGH, N.C. – The North Carolina Museum of Natural Sciences has again achieved accreditation by the American Alliance of Museums, the highest national recognition afforded the nation's museums. Accreditation signifies excellence to the museum community, to governments, funders, outside agencies, and to the museum-going public. The N.C. Museum of Natural Sciences was initially accredited in 1979, with reaccreditations in 1987 and 2001.

Alliance Accreditation brings national recognition to a museum for its commitment to excellence, accountability, high professional standards and continued institutional improvement. Developed and sustained by museum professionals for over 45 years, the Alliance's museum accreditation program is the field's primary vehicle for quality assurance, self-regulation and public accountability. It strengthens the museum profession by promoting practices that enable leaders to make informed decisions, allocate resources wisely, and remain financially and ethically accountable in order to provide the best possible service to the public.

"AAM accreditation is a highly valuable professional service for member institutions that encourages constructive reflection and informs efficiency and effectiveness improvements," remarks Emlyn Koster, PhD, director of the Museum. "For this institution which since 2000 has undertaken one of the field's most profound advances — in scale, meaning, collaborations, outcomes and stature terms — re-accreditation affirms the major dividends of the institution's invested efforts and support. It also gives confidence to our sense of direction and encourages our remarkably talented team.

"Among all of the exemplary practices cited by our peer reviewers," Koster adds, "I think that the most significant feedback was stated this way: 'The Museum has forthrightly evolved its interpretative philosophy and strategy to address bigger stories about humans as an inseparable element in the ecosystem of all life, and therefore to be concerned about matters of conservation and sustainability.'"

Only 3 percent of the nation's estimated 35,000 museums are accredited; 27 are in North Carolina. "For 138 years, the N.C. Museum of Natural Sciences has been in the business of understanding our region's biodiversity, past and present, and sharing this knowledge with tens of millions of fascinated visitors," remarks Susi H. Hamilton, Secretary of the Department of Natural and Cultural Resources. "As this institution has developed, its philosophy and practice have become exemplars for the museum field which has been in search of new models of relevance to challenges and opportunities — regionally, nationally and globally. I commend all who have contributed to this remarkable resource."

Accreditation is a very rigorous but highly rewarding process that examines all aspects of a museum's operations. To earn accreditation a museum first must conduct a year of self-study, and then undergo a site visit by a team of peer reviewers. AAM's Accreditation Commission, an independent and autonomous body of museum professionals, considers the self-study and visiting committee report to determine whether a museum should receive accreditation.

"Accredited museums are a community of institutions that have chosen to hold themselves publicly accountable to excellence," said **Laura L. Lott**, Alliance president and CEO. "Accreditation is clearly a significant achievement, of which both the institutions and the communities they serve can be extremely proud."

#### **About The North Carolina Museum of Natural Sciences**

The North Carolina Museum of Natural Sciences (11 and 121 W. Jones St.) in downtown Raleigh is an active research institution that engages visitors of every age and stage of learning in the wonders of science and the natural world, drawing them into the intriguing fields of study that are critical to the future of North Carolina. Hours: Mon.– Sat., 9 a.m. –5 p.m., and Sun., noon–5 p.m. Visit the Museum online at [www.naturalsciences.org](http://www.naturalsciences.org). Emlyn Koster, PhD, Museum Director.

#### **About the American Alliance of Museums**

The American Alliance of Museums has been bringing museums together since 1906, helping to develop standards and best practices, gathering and sharing knowledge, and providing advocacy on issues of concern to the entire museum community. Representing more than 35,000 individual museum professionals and volunteers, institutions and corporate partners serving the museum field, the Alliance is the only organization representing the entire scope of the broad museum community. For more information, visit [www.aam-us.org](http://www.aam-us.org).

#### **About the North Carolina Department of Natural and Cultural Resources**

The N.C. Department of Natural and Cultural Resources (NCDNCR) is the state agency with a vision to be the leader in using the state's natural and cultural resources to build the social, cultural, educational and economic future of North Carolina. NCDNCR's mission is to improve the quality of life in our state by creating opportunities to experience excellence in the arts, history, libraries and nature in North Carolina by stimulating learning, inspiring creativity, preserving the state's history, conserving the state's natural heritage, encouraging recreation and cultural tourism, and promoting economic development.

NCDNCR includes 27 historic sites, seven history museums, two art museums, two science museums, three aquariums and Jennette's Pier, 39 state parks and recreation areas, the N.C. Zoo, the nation's first state-supported Symphony Orchestra, the State Library, the State Archives, the N.C. Arts Council, State Preservation Office and the Office of State Archaeology, along with the Division of Land and Water Stewardship. For more information, please call (919) 807-7300 or visit [www.ncdcr.gov](http://www.ncdcr.gov).

###

#### **N.C. Department of Natural and Cultural Resources**

109 E. Jones Street | Raleigh, N.C. | 27601

[info.marketing@ncdcr.gov](mailto:info.marketing@ncdcr.gov) | [ncdcr.gov](http://ncdcr.gov)



January 18, 2018

Emlyn Koster, Ph.D., Director  
North Carolina Museum of Natural Sciences  
11 W. Jones St., Capital District  
Raleigh, N.C. 27601-1029

Dear Dr. Koster:

Thank you for keeping the leadership and staff of the Greater Raleigh Convention and Visitors Bureau (CVB), as well as our currently-engaged Destination Strategic Plan consultants, apprised of the feasibility and ongoing progress related to the opportunity for the North Carolina Museum of Natural Sciences to acquire, research and display the Dueling Dinosaurs in Raleigh. This is a significant and exciting project that can greatly augment the area's draw with visitors from across N.C. and from outside our state.

Staff and leadership have reviewed the 2016 report prepared by Informal Learning Experiences, Inc., and Market Feasibility Advisors outlining the prospective tourism impacts from mounting the Dueling Dinosaurs as a permanent exhibition at the museum. The report was well-conceived and well-structured, evaluating like opportunities as exhibited by other museums and related impacts on their surrounding regions, and well-researched from a tourism perspective, drawing upon visitation data commissioned and published by the Economic Development Partnership of N.C. (Visit N.C.) for the state.

As the CVB also commissions research annually specific to Raleigh and Wake County visitation, CVB staff also took the occasion of reviewing the museum's report to evaluate its prospective impact findings against the localized tourism data. Starting from the report's determination that museum attendance is expected to increase by approximately 1.5 million visitors with Dueling Dinosaurs, CVB staff found that estimated economic impacts would be consistent with those being reported across four years. While localized data point to an economic impact nearer to \$135 million, this is comparable to the report's \$187 million finding—and a very significant return on a new tourism-related project.

We at the CVB are in full agreement with the report authors that bringing the Dueling Dinosaurs to Raleigh, exhibiting and promoting them in such an innovative way, as envisioned by yourself and the museum staff, can generate iconic-level impacts for our area and the state, on an order of magnitude that is seldom seen here with new tourism-related capital projects or developments.

Sincerely,



Jim Beley, Chairman  
Board of Directors

CC: Dennis Edwards, President and CEO



Greater Raleigh Convention and Visitors Bureau



January 29, 2018

Emlyn Koster, Ph.D.  
Director  
North Carolina Museum of Natural Sciences  
11 W. Jones St.  
Raleigh, NC 27601

Dear Dr. Koster:

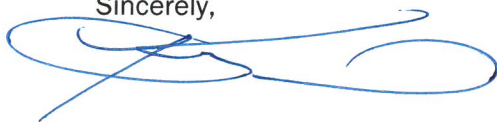
Thank you for the guided tour and impact overview of the developing *Dueling Dinosaurs* exhibit at the North Carolina Museum of Natural Sciences (NCMNS) that was provided to the Downtown Raleigh Alliance (DRA) Board of Directors in December, 2017. The DRA Board is comprised of committed leaders from the public, private, neighborhood and non-profit sectors, so this “behind the scenes” tour provided them with an up-close opportunity to get a sense of the scale and potential for this new iconic experience.

As you know, the DRA is a tireless proponent for the continued emergence of Downtown Raleigh as a thriving hub for commerce, tourism, culture, government, education and fun. It is through partnerships that the DRA is able to advance catalytic place-making and place-management endeavors that are designed to continue Downtown’s momentum. To that end, the DRA was excited to learn about the opportunities brought to Downtown and the NCMNS via its visionary *Dueling Dinosaurs* addition.

As detailed in the economic impact calculations, the increased visitation to the Museum will have substantial corollary benefits to the health of the Downtown economy. As projected, the induced visitation will significantly grow many segments of the tourism economy, and the resulting influx of people will also positively contribute to Downtown’s vibrancy, and resultantly, its sense of safety.

NCMNS’s commitment to excellence has positioned it as a beacon in the industry, and great source of pride for the State of North Carolina, Wake County, and Downtown Raleigh. It is in recognition of the strong anchor that the NCMNS provides Downtown Raleigh and the impressive positive economic impacts – locally, regionally, nationally, and globally - delivered through the *Dueling Dinosaurs* experience that we can offer our support for your Wake County grant application.

Sincerely,



Kristopher Larson, AICP  
President & CEO



February 5, 2018

Mrs. Anita Watkins  
President  
Board of Directors  
Friends of NC Museum of Natural Sciences  
PO Box 26928  
Raleigh, North Carolina 27601

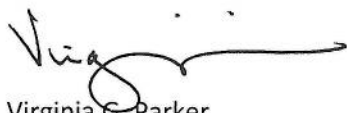
Dear Anita:

On behalf of all of us here at Bank of America, it is my pleasure to confirm to you that Bank of America has agreed to donate \$1,000,000 to the Friends of NC Museum of Natural Sciences in support of the Dueling Dinosaurs Worldwide Education Program. This commitment will be paid out in equal increments over the next four years with the first payment occurring in first quarter, 2018.

Bank of America is very excited to support this unique and valuable program that will touch thousands of school children, adults, teaching professionals and interested science geeks and dinosaur lovers from across the state, the country and even the world. The project aligns beautifully with the Bank of America Foundation's commitment to education, outreach to underserved and rural populations, promoting girls in science and the overall economic impact projected for our region (\$100MM+).

We are very excited about this new partnership with the NC Museum of Natural Sciences and look forward to working with you over the next four years to make the entire vision a reality.

Sincerely,



Virginia G. Parker  
SVP/Market Manager  
Triangle Market



February 6, 2018

Dr. Emlyn Koster  
Director, NC Museum of Natural Sciences  
11 West Jones Street  
Raleigh, NC 27601

Dear Dr. Koster,

So many of us at *Our State* have fond memories of visits to the NC Museum of Natural Sciences, both as the wide-eyed students we once were, and as the parents we are today, eager to share favorite exhibits with our own children. When you gave us a sneak peek of the museum's latest acquisition, we found ourselves back in that childhood state of giddy anticipation.

And what a thrill it was to see those remarkable fossils up close: to touch the T. rex's teeth as we'd once reached out to touch Trouble's. Our readers – some one million across the state every month – will be as delighted to learn about the Dueling Dinosaurs as we were. We hope to share the story with them as soon as possible, so that they might feel inspired to support the museum's efforts to put the fossils on display in the permanent collection.

The museum's mission to celebrate the flora and fauna, the old stories and new wonders of the state aligns perfectly with *Our State*'s mission to lift up all that is great and true and beautiful in the place we call home. The story of these fossils will be told over many years as Lindsay Zanno and her team excavate the bones and study the findings. A generation of school children, and their teachers, parents and grandparents, will watch together, as science unfolds in real-time. In turn, their appreciation of our state's natural history will grow, too. As a part of that process, we hope to tell the stories that deepen that appreciation, that sense of wonder, in our pages.

In addition to sharing the story with readers, we envision sharing aspects of the unfolding drama on our digital platforms, through social media, and on our website. Marketing partnerships with the museum and events related to the Dueling Dinosaurs are a natural fit for us, as well.

*Our State* magazine celebrates the very best of North Carolina through lively storytelling and stunning photography. It's a trusted source of information for those who've lived in North Carolina all their lives, those just becoming acquainted with the state, and those looking to visit or relocate. We are honored to be included in your efforts to share this incredible acquisition.

Sincerely,



Margo Knight Metzger  
Marketing Director

800 Green Valley Road, Suite 106  
Greensboro, NC 27408-7020  
PO Box 4552  
Greensboro, NC 27404-4552  
T: 336.286.0600 • F: 336.286.0100



CRIMINAL DEFENSE  
DIVORCE & FAMILY LAW  
EDUCATION LAW  
CIVIL LITIGATION  
APPEALS

Wade M. Smith

wms@tharringtonsmith.com

January 31, 2018

Dr. Emlyn Koster  
Director, NC Museum of Natural Sciences  
11 W Jones Street  
Raleigh, North Carolina 27601

Dear Dr. Koster,

I write this letter to thank you for recently inviting my family to experience one of the most stunning moments of our lives. At your invitation, we joined with you and a few other friends of the North Carolina Museum of Natural Sciences to look through a window into a deep and unimaginably, distant slice of time. We will never forget what we saw. This was the most dramatic and unforgettable of our family's many experiences at the museum.

Ann and I, along with our children and grandchildren, have loved this museum for fifty years. It is one of the great museums of the world. Ann has taken our children and grandchildren by the hand and explored every inch of its many layers. You are aware, of course, that we gave the sloth to the museum some years ago. When we visit the museum, we always stop and visit her. Over the years, we have created quite a nice friendship with her, though the truth is that she only knows a few words like "yes," "no," and "hurry."

I well remember my first visit to the museum. The year was 1952. I came to the museum with my eighth-grade class from Albemarle Middle School. Miss Ivey was my teacher. I sat on the bus with a beautiful classmate and secretly held her hand the entire way to Raleigh. I was smitten by her manners and sweet disposition. When we arrived at the museum, we were guided through the exhibits. There were birds, plants, and rooms filled with things to excite any eighth-grade boy. But, whoa, I had never seen poisonous snakes up close. The museum had on display in glass cases a copperhead, a cotton mouth moccasin, a diamond back rattlesnake, and a timber rattlesnake. I could look through the glass from a distance of a few inches and study these amazing creatures in complete safety. Now, I was smitten for sure, but not by my sweet girlfriend. I was smitten by the North Carolina Museum of Natural Sciences. This love affair has never ended. Our entire family feels a bond of love and affection for this great museum. I sat on the bus alone on the journey home and pondered what else in the earth awaited me.

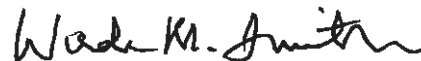
Nothing in our family's half century of adventure at the museum could have prepared us for what we experienced with you on the morning on November 28, 2017. The air outside was filled with the sounds of music. It was the day of the Raleigh Christmas Parade. However, it was not drums that brought us to the museum on that autumn morning in 2017. We had a different mission. The people who gathered with us, perhaps a dozen, were quiet. The contrast could not have been more stark. Outside, bands were playing. Inside, the mood was reverent.

When we entered the room into which you led us, we were instantly in the presence of a life and death struggle that occurred an unimaginable distance in the past. We were seeing what some paleontologists considered to be the most remarkable fossils ever found. We were looking at two dinosaurs, one of which is the most complete Tyrannosaurus Rex skeleton in history. We observed the struggle between a Tyrannosaurus Rex and a Triceratops. We were among the few human beings ever to see such remarkable fossils. We stood transfixed and marveled at what we were seeing.

This letter is to thank you for that amazing experience. We find ourselves imagining what these dueling dinosaurs could mean to the people of North Carolina. Imagine what they could do for children, yet to be born, who will ride to Raleigh on a school bus holding hands with a classmate, only to be swept off their feet by one of the world's most remarkable paleontological discoveries. We eagerly await the next chapter in this remarkable story, the story of the dueling dinosaurs.

Very truly yours,

THARRINGTON SMITH, LLP

A handwritten signature in black ink, appearing to read "Wade M. Smith", with a stylized flourish at the end.

Wade M. Smith



Friends of the North Carolina Museum of Natural Sciences

February 5, 2018

Ms. Jessica Holmes  
Wake County Board of Commissioners  
Wake County  
P.O. Box 550  
Raleigh, NC 27602

Dear Chairperson Holmes:

RE: Wake County's RFP for high-impact capital projects

Following a two-year assembly of a robust approach to the phenomenal *Dueling Dinosaurs* opportunity, and speaking on behalf of Museum Director Dr. Emlyn Koster, his team, and the nonprofit Friends of the Museum, I have the great pleasure of writing to support the application for capital funds in response to this year's RFP from the Wake County Board of Commissioners.

Imagine strolling down Jones Street to observe the two most complete specimens of the two most popular dinosaurs, preserved together in an apparent predator-prey situation, from 68 million year ago. Now imagine the pride in knowing that the NC Museum of Natural Sciences has been selected from across the entire United States by the Montana discovery team to be the showcase venue. This features preparation and research in the public eye, onsite and online education, citizen science projects and an innovative exhibition for all ages and stages of learning.

There are many aspects of *Dueling Dinosaurs* I could convey as to why this is the right project for this funding, but I will focus on two. First, this once-in-a-lifetime opportunity allows citizens of Raleigh, Wake County and our state to participate in the creation of new knowledge about the dinosaurian world, the world's most popular subject in science. These specimens, even in their raw state, have provided glimpses of new discoveries. Second, as noted in our application, there is a substantial economic impact in addition to an opportunity for unprecedented profile and cultural impacts for Raleigh, Wake County, the Research Triangle, and North Carolina as a whole.

Since 1979 when the Museum celebrated its 100<sup>th</sup> anniversary, the Friends organization has been involving the community, promoting awareness, attracting partners, and raising funds for the Museum. Our Board encompasses dedicated individuals representing the corporate, civic, university, education and nonprofit entities that make up our region. It is with their collective voice that I express profound gratitude for your Board's consideration of our request for capital assistance at a vital moment.

The Friends Board cemented its commitment to this project on August 16, 2017, when the Executive Committee approved a motion to enter into contract to purchase the Dueling Dinosaurs for up to \$6,000,000 with a down payment of \$2,000,000 from the Friends unrestricted funds.

I conclude by expressing appreciation for Wake County's interlocal support for the Museum's pioneering Nature Research Center wing that opened on Earth Day in 2012. Without that bold investment, this Museum would not have advanced to become one of the world's most head-turning museums nor would we be in a position to acquire these amazing specimens.

Wake County's participation in this exciting opportunity will demonstrate an ever-deepening partnership with the museum that is so vital to our community.

Sincerely,

A handwritten signature in black ink, appearing to read 'Anita Watkins', with a stylized, flowing script.

Anita Watkins

President, Board of Directors

Friends of the NC Museum of Natural Sciences

CC: Emlyn Koster, PhD, Director of the Museum  
Angela Baker-James, Executive Director of the Friends of the Museum





January 24, 2018

Emlyn Koster, PhD  
Director  
North Carolina Museum of Natural Sciences  
11 West Jones Street  
Raleigh, NC 27601

Dear Dr. Koster:

I am delighted to hear that the NC Museum of Natural Sciences (NCMNS) is hosting and will be sharing with the public the magnificent Dueling Dinosaurs (DD). Clearly the DD can stand on their own as a magnificent draw for the general public and professionals. That they are fortunate to have been acquired by NCMNS ensures their potential will be maximized as an inspirational and educational resource for visitors of all ages and interests. You and your team are innovators and illuminators. Science and nature come alive at NCMNS in every nook and cranny of the museum building as well as your satellite facilities. I know this from firsthand experience and cannot imagine a better home for DD.

I am grateful to Kathryn Fuller, former president of WWF (where I previously worked in executive program leadership roles for 18 years), for introducing me to NCMNS. Kathryn knew that NEEF was interested in identifying a museum partner with whom we could collaborate in successfully achieving our vision: *By 2022, 300 million Americans actively use environmental knowledge to ensure the wellbeing of the earth and its people.* Our research indicates that close to 180 million people visit natural history museums, zoos, and aquariums. This same research also tells us that people consider these institutions trustworthy as sources of environmental information. Kathryn was familiar with NEEF's partnership with the National Basketball Association (NBA) reaching sports fans to engage them in taking energy-saving actions in daily life. Kathryn and I had spoken several times about the potential of the NEEF-NBA public education and engagement model for the museum community. We had turned to her for advice on where we might find a prestigious museum partner meeting these criteria: extensive reach to millions of people; public trust; leadership in the natural sciences museum community; a commitment to science and education; and, most important, a commitment to innovative means of engaging visitors at the museum and beyond once visitors return to their homes. Kathryn visited the museum and told me she was sure NEEF would find the partner we were seeking in NCMNS.

As you know, I and two NEEF staff spent a day and half at NCMNS. We had the pleasure of seeing various exhibits, taking the behind the scenes tours, meeting with staff, meeting with some of your leadership, presenting the NEEF public engagement model, visiting Prairie Ridge Ecostation, and participating in one of the Museum's Science Café presentations. Every moment was stimulating. You have exceptional staff who clearly love what they do and are fully on board with your innovative vision.

Based on our conversations with you and your teams, NEEF was “in” and eager to talk about a partnership. But there was more driving our desire to combine forces to reach the public by “illuminating the natural world and inspiring its conservation.”

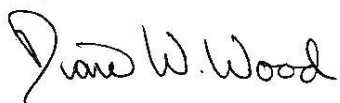
What my team and I experienced during our visit was what I call “the buzz” NCMNS creates around science and nature. Everywhere we turned there were visitors engaging: two young boys exploring ways to track coyotes; two very young girls sitting in a laboratory setting with their mother learning to use a pipette; a rapt audience of teens listening to a “real scientist” give a TED-style talk; people discovering North Carolina’s diverse environment in the Mountains to the Sea exhibit; and a gathering in the café filled to capacity with the young and the old listening to a volcanologist bring his specialty alive. The museum was buzzing and I enjoyed watching people engaging and learning as much as I enjoyed the exhibits themselves. This is indeed an amazing, vibrant setting readymade for the DD.

NEEF was chartered by Congress in 1990 to advance environmental literacy nationwide as the only private not-for-profit working as a complement to the EPA. In focusing on our national mandate, NEEF has become aware that the majority of Americans do not feel a part of environmental conversations. We carried out segmentation research and learned there are about 129 million people in this country who would like to engage more in environmental stewardship but are concerned it costs too much in time or money, or they are confused by contradictory environmental messaging. We call this group the “moveable middle”—people who want to do the right thing for the environment but need information relevant to their daily lives, *knowledge to live by*. NEEF cares deeply about remedying this imbalance and reaching new audiences in ways that allow them to learn about the natural world, their relationship to it, and their impact on it. NCMNS clearly welcomes a broad range of visitors, diverse in educational background, incomes, race, and ethnicity. The presence of the DD will have a draw that is sure to further the museum’s clear commitment to diversity and inclusion values shared with NEEF.

NEEF began our conversations with NCMNS before becoming aware of the DD possibility. We were sold on NCMNS for all the reasons I have shared. We are very pleased we found common ground, have a signed Memorandum of Understanding, and have the makings of a promising public engagement partnership. Your vision to make the DD accessible to everyone coming to the museum will ensure this fabulous pair of fossils will attract many millions more to North Carolina and to the museum. And, put bluntly, it will further enable us to work together to ensure all Americans have access to science and environmental knowledge they can apply to their daily lives “to ensure the wellbeing of the earth and its people.”

It is no surprise that the NCMNS was chosen to exhibit the Dueling Dinosaurs. NEEF is honored to be your partner as you embark on something that is ideal for an Anthropocene focus allowing your visitors to dramatically connect the past to the present.

Sincerely,

A handwritten signature in black ink that reads "Diane W. Wood". The signature is written in a cursive, flowing style.

Diane W. Wood  
President

March 22, 2017

Emlyn Koster, PhD  
Director  
North Carolina Museum of Natural Sciences  
11 West Jones Street  
Raleigh, NC 27601

Dear Dr. Koster,

It is a credit to the research and education sophistication of the NC Museum of Natural Sciences (NCMNS) that it has attracted an exclusive offer to acquire, research and display the *Dueling Dinosaurs* (DD). Not only do they represent the most complete skeletons yet discovered of the world's two most iconic dinosaurs (*Tyrannosaurus* and *Triceratops*), but the manner of their preservation suggests that they died in combat, making them one of only two predator-prey dinosaur discoveries known worldwide. An innovative public approach to their spectacular preservation will generate an iconic impact of the NCMNS with brand-building benefits for Raleigh, Wake County and the State of North Carolina across the US and around the world.

This letter summarizes our report that was commissioned last summer by the Friends of NCMNS. We highlight the scientific, educational, economic and reputational impacts of the DD exhibit and program experience and explain how this installation expands upon what the exhibit phenomenon known as *A T. rex named Sue* (Sue) accomplished for Chicago's Field Museum.

A grand impact might seem like much to expect from one new experience at NCMNS, but Sue brought great attention nearly a generation ago and has had a lasting impact on the profile and revenue for the Field Museum. Metro Chicago's population is 9 million compared to the Raleigh RTP region of 1.3 million. Sue's continued use as an advertising icon by Chicago and Illinois tourism promotion is a testament to its long-term value. Regardless of attendance, overall museum revenues including all forms of fundraising almost doubled in the years following Sue's debut. Each association with Sue became valuable. The Field Museum became known as an innovative and interesting institution that people and organizations wanted to be a part of and support.

The well-planned, approximately 3-year long, DD preparatory rollout at NCMNS builds on what was demonstrably successful with the Sue project, yet adds dynamic new educational experiences tailored for increasing public participation in science. The DD experience will feature preparation in full visitor view that can also be followed online in real-time, statewide and worldwide, through a customized in-museum preparation laboratory designed by Gensler, a world-renowned architecture and design firm.

The NCMNS will offer the world's first museum experience where a predator-prey moment in the fascinating world of dinosaurs comes "alive" as the modern paleontological research sifts through the evidence of a 68-million-year-old murder mystery with visitors of all ages and stages of learning. Citizen science activities—for which NCMNS is well known as made clear by the Smithsonian Affiliates latest magazine issue—will provide critical opportunities for school students to make real scientific discoveries in their own classrooms from newly collected fossil-rich sediment taken from near the DD field site. In this way, North Carolina school kids will contribute real scientific data to the project—a wonderful opportunity for impactful STEM learning. In parallel, NCMNS paleontologists will be conducting frontier research on these specimens and preparators will regularly be conversing with their audience about what they are doing, why they are doing it, what they are learning as the fossils are separated from the surrounding sediment. We anticipate—indeed many civic leaders anticipate—that this new, one-of-a-kind, participatory scientific mission will help establish the DD as a new local, regional, and global icon that many will have watched come out of the rock, literally.

During the DD preparation period, NCMNS attendance is expected to increase by approximately 1,500,000 visitors. This will raise NCMNS to an annual attendance level not far below the Field Museum's

typical 1.3 million annual attendance. The increased audience will result in correspondingly higher store sales (leveraging the particular attractiveness of dinosaur merchandise), food sales, facility rentals, 3D movie ticket sales, special exhibition entries, memberships, and donations to the Friends of the Museum. Also, the economic impact on Raleigh and Wake County of new day and overnight visitors to the NCMNS from outside the Raleigh area and out of state is projected to be \$187 million over the four years. Assuming 610,000 day visitors and 295,000 overnight visitors from beyond the Raleigh/Wake County area annually, based on our experience-honed US data models the expected extra economic impact over the first four years is projected to be \$64 million from the day visitor market and \$123 million from the overnight visitor market. The total economic impact over four years totals to approximately \$187 million.

This will be a giant boost for Wake County's tourism industry, which already supports more than 20,000 jobs and boasts of an annual economic impact of \$1.8 billion. Adding the DD to local tourism attractions will greatly enhance the county's tourism landscape, specifically downtown where Wake's tourism product is concentrated. Additionally, the urban street-grid location of NCMNS is an unexpected ideal advantage for creating economic impact; the site is surrounded by other educational attractions, restaurants, retailers, hotels and the State Capitol complex in a market that has been growing at a national almost-record pace in population, size and vitality. Without a dedicated parking deck, visitors must approach the museum on foot, passing places where their spending can create impact. Out-of-town visitors to NCMNS can comfortably walk to the Museum from many different hotel choices.

The DD are unlike virtually every iconic museum fossil, especially dinosaurs, in that they are a clear example of "animals in action" rather than a formally posed upright skeleton without any ecological context. This gives the NCMNS a unique educational and exhibition opportunity. The presentation of the study of the specimens, both in the onsite preparation facility and in the various online renditions, enables the NCMNS to talk about dinosaurs as living, interacting animals and to present science as continuously changing as we learn from new discoveries. This is different, and much more educationally powerful, than the traditional presentation of Sue as a beautiful large single specimen.

The recent reaccreditation of the NCMNS by the American Alliance of Museums (only 3% of U.S. museums measure up to its exemplary standards) speaks to its quality and service to the Raleigh region. As its report noted, "The museum is a leader in integrating onsite and offsite resources and in integrating various modes of communication effectively and has embraced new forms of learning."

The *Dueling Dinosaurs* initiative is a prime example of this accolade and is yet another way this will brand the iconic specimen, the Raleigh metro area, and the museum as "must-sees" for visitors to North Carolina.

Very Truly Yours,



Managing Principal, Market & Feasibility Advisors, LLC



President, Informal Learning Experiences, Inc.

*Market & Feasibility Advisors, LLC or MFA is a Chicago (IL) & Austin (TX) based consultancy specializing in museums, other types of visitor attractions and leisure facilities that completes economic planning, repositioning studies and impact studies.*

*Informal Learning Experiences or ILE is a Denver based consultancy focusing on museums and cultural attractions of all types. Dr. Robert "Mac" West is a paleontologist and former director of several natural history and science museums, publisher of The Informal Learning Review, and developer of a national traveling exhibitions data base.*

## **BIOGRAPHIES**

### **DR. EMLYN KOSTER, Museum Director**

With an Honors BSc from the University of Sheffield in England and PhD from the University of Ottawa in Canada, both in geology, his career began with research and teaching appointments at universities in Quebec and Saskatchewan. Interest to engage the public in global sustainability issues grew while conducting fieldwork at World Heritage Sites in Canada and China. Choosing the vehicle of major nature and science museums, CEO appointments followed at Alberta's Royal Tyrrell Museum of Paleontology, the Ontario Science Centre in Toronto, Liberty Science Center next to New York, and since 2013 at the North Carolina Museum of Natural Sciences.

A past president of the Geological Association of Canada, his board and committee roles have also included the American Association for the Advancement of Science, Challenger Center for Space Science Education, and International Coalition of Sites of Conscience. Currently, he is also on the board for the Committee on Museums and Collections of Natural History of the Paris-based International Council of Museums and for which he chairs the new working group on the Anthropocene. An adjunct professor in the Department of Marine, Earth and Atmospheric Sciences at NC State University, he also assists Visit Raleigh as an ambassador and is a legacy committee member for the Dorothea Dix Park project. The external relevance of nature and science museums has been the focus of invited keynotes, presentations and publications. The 70th anniversary book of the International Council of Museums on "Museums, Ethics and Cultural Heritage" includes his chapter on these institutions in an externally responsible context. His raising of awareness about museums as adaptive community resources following traumatic events led to his invited preface in the recent "Fostering Empathy through Museums". And a new book by Routledge on "The Future of Natural History Museums" includes his chapter on their need for a holistic ethos and an embrace of the past, present and future.

### **DR. LINDSAY ZANNO, Director of the Paleontology Research lab**

Dr. Zanno received her PhD in Geology from the University of Utah in 2008. Although her research tackles several cornerstones of paleontology, her prime focus is unraveling complex transitions in dietary ecology and key novelties during the evolution of theropod dinosaurs — a group that includes the iconic megapredator T. rex as well as living birds. Dr. Zanno's work garners regular international media attention and has been featured extensively by notables such as the Science Channel, History Channel, NPR, and the BBC. She currently serves as Science Advocate for the Walking with Dinosaurs Arena Spectacular and coordinates several paleontology-focused citizen science projects. In 2012 she launched the real-time social media platform — Expedition Live! connecting the public with paleontologists in the field. Dr. Zanno's published impact ranges from top science journals such as Nature to everyday Tweets, including over 71 technical works and a children's book on the cycle of life. She is also and an Assistant Research Professor in the Department of Biological Sciences at North Carolina State University and the Executive Director of the Children's Ptosis Foundation, a non-profit advocacy group for children with eye disorders. Read more at [naturalsciences.org/staff/lindsay-zanno](http://naturalsciences.org/staff/lindsay-zanno)