OFFICE OF THE VICE PRESIDENT
FOR ACADEMIC & STRATEGIC COLLABORATION

June 21, 2022

MEMORANDUM

TO: M. Katherine Banks, Ph.D.
President

FROM: Susan Ballabina, Ph.D. *Susan Ballabina*
Vice President for Academic & Strategic Collaborations
Working Group Chair

SUBJECT: Implementation Memo - Working Group #8

Recommendations to be Implemented: Invest in cultural centers, including a performing arts center, a museum and hospitality center, and campus gardens.

Strategic Considerations:
Working group members (WG8) included a diverse representation of disciplines, perspectives, knowledge, experience, and roles from various teaching, research, and outreach units within Texas A&M, as well as representatives from various organizations in the community and elected officials in both Bryan and College Station, who were identified and selected for the relevance of their contributions related to the WG8 charge. The group was very vocal, participatory, and contributory, and the diversity of the group allowed deep and meaningful discussions.

The primary charge of WG8 was to address four focus areas: (1) Identification and prioritization of new opportunities, including: a performing arts hall, a campus museum, an expansion of teaching gardens, and a hospitality center; (2) Identification of opportunities for increased support of existing units that enrich the campus/community; (3) Recommendations on marketing strategies for comprehensive promotion of cultural assets; and (4) Production of a white paper on development of an on-campus museum that tells our story, including budget, recommendation of collections to include, identification of fundraising opportunities; identification of potential partners and opportunities for local government engagement, development of a suggested timeline.

The working group fully concurs with the overall recommendation in the MGT & M+CG Report for Texas A&M to invest in cultural centers and assets based on findings through research that shows that "*cultivating art and culture in a community provides many benefits. Adding arts and culture throughout the community can improve health, safety, and well-being*." WG8 identified primary and secondary priorities within each of the four areas of its charge. Highest priorities are shown in regular text with *secondary priorities in italics*. Additional information and support material is included in the attachment.

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New Opportunities:

WG8 strongly recommends and supports:

- The creation of a campus museum focused on natural history, science, and technology as a key priority for Texas A&M. A subgroup of members of WG8 was established to focus on this opportunity.
- The creation of a performing arts hall, particularly under the lead of the new School of Performance, Visualization & Fine Arts, as a second key priority for Texas A&M. A subgroup created jointly with members from WG8 and WG10 (Visual and Performing Arts School) was established to focus on this opportunity.

WG8 also:

- *Supports teaching gardens (such as the Leach Teaching Gardens) as an important asset for Texas A&M, but it did not devote too much time discussing their expansion, given that the Program of Requirements for Phase II of the Leach Teaching Gardens is complete, and the Feasibility Study is underway.*
- *Did not address a Hospitality Center given the lack of details on what this opportunity would entail, but it agrees in concept that, given the desire of Texas A&M to extend its reach into Bryan/College Station, the Brazos Valley, Texas, the U.S., and abroad, a center/program focused on hospitality has potential benefits, value, and impact, and should be addressed in the future.*

Opportunities for Increased Support of Existing Units:

WG8 recognizes that there are many other units within Texas A&M that contribute in various ways, both directly and indirectly, to the cultural landscape of the University, and strongly recommends the establishment of a mechanism and a capacity for the on-going development and maintenance of a thorough and complete:

- Baseline of cultural assets within Texas A&M and the surrounding communities in Bryan-College Station and the Brazos Valley, and possibly in other Texas A&M remote locations, which complement, supplement, strengthen, enhance, and/or transcend the four focus areas of the charge to WG8.
- Framework for action to pursue current specific and future emerging opportunities in a strategic, tactical, operational pragmatic, and practical way.

Recommendations on Strategies for Marketing Cultural Assets:

WG8 recognizes the full strength of the Texas A&M brand and how it is marketed within the full scope of its activities, and thus strongly recommends that the University brand and market its cultural assets with the strength, passion, and full infrastructure that it uses to market Texas A&M's:

- Core values, traditions, and heritage.
- Strengths and accomplishments in the three pillars of its academic mission as a designated land-, sea-, space-grant, and Tier 1 research institution: (1) learning and teaching; (2) research, discovery, innovation, and creative work; and (3) impact to the State, Nation, and World, through engagement with practice, outreach, and service in all disciplinary areas of scholarship.
- Athletics

White Paper on Development of an On-campus Museum:
(with an initial target investment of $100 Million)
WG8 strongly recommends that:

- The nature, essence, and focus areas for the proposed name of the "*Texas A&M Museum of Natural History, Science, and Technology*" should provide a destination that provides visitors both from the Texas A&M community of students, faculty, staff, former students, and friends and from the local Bryan-College Station and Brazos Valley communities, Texas, the U.S., and abroad, with a unique, flexible, and interactive experience, which reflects Aggie Pride, and that highlights the great contributions that Texas A&M has made to the State, the Nation, and the World.
- The content and scope of the Museum should focus, with a sense of urgency, on existing collections as an initial priority. In addition, the Museum should consider that, to expand over time, emerging collections and special long-term or traveling/transitory exhibits need to be the result of a thoughtful, deliberate, and purposeful strategy.
- The Museum, through "must-have" and "dream spaces" as well as physical and virtual teaching and research spaces, should educate people at any age about natural history of the State of Texas and the Earth. More importantly, the Museum should showcase what Texas A&M has accomplished in the past. This Museum should also allow visitors to explore what Texas A&M is doing today, and to ignite their imagination on what it could/will accomplish in the future.
- The attributes for the location of the Museum (not a specific site since that is outside the scope of the charge) need to provide maximum and easy accessibility to the wide range of visitors to the Museum, in a similar way that the Bush Presidential Library and Museum does.
- The attributes for the iconic form, functionality, and aesthetic of the Museum (not a specific design style since that is outside the scope of the charge) reflect the Aggie core values, and that the physical structure of the Museum complement, supplement, strengthen, enhance, and transcend the Texas A&M campus.

Logistical Issues Addressed:
WG8 members discussed (1) the main drivers that are "pushing" and "pulling" Texas A&M to envision, plan, design, build, and operate/maintain cultural assets, and the problems they will solve, needs they will satisfy, opportunities they will realize, and aspirations it will fulfill; (2) the main inhibitors, obstacles, and/or barriers within the context at the University, which could affect, or be affected by the creation of cultural assets, and associated enablers, obstacle-removers, and/or barrier-breakers; and (3) needs and wishes for change that are necessary to make the vision of cultural assets a reality for Texas A&M.

Major Challenges Encountered and Resolutions:
Each of the focus areas of the charge is a very broad topic with multiple scales and dimensions of high and critical importance. Even with the diverse range of expertise represented in WG8, it was not possible to address each focus area of the charge in full depth and breadth. To overcome this limitation, a suggestion for establishing a mechanism for ongoing input from a proposed advisory council to guide and assist in the implementation of a campus museum focused on natural history, science, and technology and the creation of a performing arts hall under the lead of the new School of Performance, Visualization & Fine Arts as high key priorities for Texas A&M is presented next. Finally, the attachments to this memorandum contain the full scope of research, findings, and results of the excellent work done by the WG8.

Key Logistical Issues to be Completed and Timeline:

- Institute a Texas A&M *Cultural Assets Advisory Council* (CAAC) by August 1, 2022.
- Complete a thorough and complete baseline of cultural assets within Texas A&M and the surrounding communities in Bryan-College Station and the Brazos Valley, and possibly in other Texas A&M remote locations.
- Identify a framework to guide implementation and evaluation by December 15, 2022.

Approved:

M. K. Banks

M. Katherine Banks, Ph.D.
President

June 30, 2022
Date

*Approved with the expectation to broaden the scope of the museum to effectively tell the history and impact of Texas A&M University and to include art and other exhibits/collections as appropriate.

A State-of-the-Art Natural History Museum at Texas A&M
Serving Public Education, Research and Community Development

All top-ranked, peer institutions have a natural history museum and/or state-of-the-art collections facility on their campus. Many of these museums were founded in the early 20th Century, and some even earlier. Most have public exhibits, spaces that securely house research and teaching collections, offices, labs, and facilities supporting educational and public outreach activities. Newly renovated museums have state-of-the art exhibits (e.g., interactive displays with education materials related to grand challenges, etc.), and some have a café/restaurant.

In Texas, the significant natural history museums on university campuses are the Texas Memorial Museum at the University of Texas at Austin opened in 1939 (https://tmm.utexas.edu), the Museum of Texas Tech University opened in 1970 (https://www.depts.ttu.edu/museumttu/), and the Mayborn Museum at Baylor University opened in 2004 (https://www.baylor.edu/mayborn/).

Texas A&M AgriLife and the College of Agriculture and Life Sciences have maintained biodiversity research collections since 1936. We have a long legacy of leading scientists researching biodiversity, ecology, environmental science, and global change science who utilize, build, and curate valuable collections of specimens, genetic/tissue samples and associated databases. Thousands of publications and millions of federal grant dollars are directly associated with our collections.

- The Biodiversity Research and Teaching Collections (BRTC) is among the top 5-10 university-based biodiversity collections in US, with >1.3 million specimens of fishes, amphibians, reptiles, birds, mammals, parasites, and marine invertebrates. The collections and associated classroom and office space currently occupy 25,000 sq. ft. of the University Services Building (former Texas Instruments facility located off campus). External to the building are Master Naturalists Garden and an outdoor classroom. Some specimens are preserved in 70% ethanol that require (but currently lack) infrastructure for fire protection. The current BRTC facility has scant space available for exhibits, with modest displays limited to an entrance area.
- The S.M. Tracy Herbarium has >360,000 plant specimens, with an emphasis on material from Texas and Mexico, and includes one of the largest collections of grasses in world. The herbarium occupies 12,752 sq. ft.in the University Services Building. Both the BRTC and Tracy Herbarium will require additional space for collection growth.
- The Texas A&M University Insect Collection is one of the largest in the nation with almost 3.1 million specimens and more than 59,200 species. The collection supports teaching, research, and service missions of the university's Department of Entomology and currently is overpacked while occupying 8,100 sq. ft. within the Minnie Belle Heep Building on the West Campus.
- Each semester, hundreds of undergraduate students take laboratory-based courses using our collections and associated facilities, receiving an educational experience nearly unique in Texas and across the United States. Researchers worldwide and many citizens and groups also study these collections and visit our facilities.
- Other major collections at TAMU: geology, anthropology, ….
- Other field with potential for public exhibits/education/outreach: various fields in biology, chemistry, physics, geology, geography, various fields of engineering, various fields in agriculture, geography, …..

The Natural History Museum will be a centerpiece in the Garden/Museum District on Texas A&M's West Campus, supporting not only the research, teaching, and public outreach missions of the Texas A&M University System, but also tourism and local economic development. With regards to business models supporting operations, some university museums rent out facilities for meetings, receptions, and weddings to supplement income from sponsorships, exhibit entrance fees, restaurant sales, and other sources.

Essential Facilities for a State-of-the-Art Natural History Museum

1. Secure facilities for collections, including space for growth
2. Offices and lab spaces to support specimen curation and research
3. Space and equipment to support specimen digitization and records/data archival
4. Classroom/teaching lab spaces to support university course instruction
5. Storage space for chemicals, ultra-cold freezers, field equipment, w/ loading dock
6. Exhibit spaces – permanent exhibits, traveling/rotating exhibits
7. Offices for administrators, exhibition staff, public outreach staff
8. Learning center for K-12 and public outreach activities (e.g., Texas Master Naturalists, Master Gardeners, Brazos Valley Audubon, etc.)

Some Options for a State-of-the-Art Natural History Museum

1. Café/restaurant
2. Gift shop
3. Theater (conventional, iMax?)
4. Planetarium (e.g., TTU)
5. Aquarium exhibit (e.g., Brazos River fishes – e.g., perhaps as part of an exhibit about historic changes to watershed development, agriculture, urbanization, hydrology, ecology, issues of water demand/use, water policy, etc.)
6. Other?

Funding Strategy - Construction

1. Permanent University Fund
2. State legislative appropriation
3. TAMU Foundation/donors
4. Sponsorships – corporate, individual
5. Proceeds from sale of TI property (USB)
6. Local bond election

Funding Strategy - Operating

1. Endowment – TAMU Foundation/donors
2. Visitor entry fees
3. Rental for special events – meetings, weddings, etc.
4. Sales – gift shop, restaurant, theater
5. Research grants/contracts
6. TAMUS units– salaries for curators, instructors, extension faculty, security personnel

Process for Building a New Natural History Museum

1. Decide on the scope of the museum (Working Group 8)
    a. Natural history
    b. Natural history & Science
    c. Natural history & Science & Engineering
    d. Natural history & Cultural history (native peoples, pioneer days, etc.)
2. Decide on location of the museum, including space for parking
3. Initiate fund raising on all fronts
4. Hire a Museum Director to oversee the project during planning and construction
5. Solicit bids and hire an architectural firm – obtain input from TAMU curators
6. Solicit bids and hire a construction company – obtain input from TAMU curators
7. Hire museum staff to handle facilities, exhibits, publicity, outreach, etc.
8. Install equipment, etc. & prepare exhibits
9. Facility opens for the public, course instruction, public education programs & special events

Concise Summary of Regional University Natural History Museums

Texas Memorial Museum, University of Texas at Austin

President Franklin D. Roosevelt visited Austin while campaigning, and attended the ground-breaking ceremony for the Texas Memorial Museum. He set off the dynamite to begin construction of Texas Memorial Museum on the UT campus on June 11, 1936. When the museum opened in 1939, it was the state natural history museum, but was transferred to The University of Texas at Austin in 1959. In 1939, 600 people visited Texas Memorial Museum. Today, more than 35,000 people visit each year, including 14,000 preK-16 learners in school groups. Permanent exhibits in Texas Memorial Museum are created from holdings of more than 5 million specimens. Permanent exhibits include fossils (some of which were donated by Texas A&M) and prehistoric life; gems, minerals and meteorites; and native Texas wildlife. These specimens are a result of biological, geological and paleontological fieldwork and research conducted by The University of Texas at Austin scientists, and also from public donations.

Museum of Texas Tech University

The Museum of Texas Tech University is a multifaceted cultural resource with 6 divisions (Anthropology, Art, Clothing and Textiles, History, Paleontology, and Natural History) and 8.8 million objects. The Museum features 9 permanent galleries ranging from southwest Indian art to the study of biodiversity, dinosaurs and history. An additional 7 galleries offer a mixture of exhibitions curated from the Museum's collections and travelling exhibits. The Museum was founded in 1929 as the West Texas Museum, just 4 years after the creation of what was then known as Texas Technological College (later Texas Tech University). The Museum was built on the university campus near Memorial Circle where nationally known painter Peter Hurd was selected to paint a 1,300 square foot mural in the museum's rotunda. In April of 1953 the Museum purchased the first Spitz Planetarium. In 1964 plans were revealed for construction of a new museum complex, and in 1970 the Museum opened at its current location. At that time the Moody Planetarium was renamed in honor of support from the Moody Foundation. The Museum of TTU traded some of their vertebrate collections with other museums and now lacks collections for several major groups.

Mayborn Natural Science and Cultural History Museum Complex, Baylor University

The Sue & Frank Mayborn Natural Science and Cultural History Museum Complex at Baylor University opened in 2004. As far back as the 1850's, Baylor University professors began collecting teaching materials to help students understand biology, physics, chemistry, and geology. Baylor's original campus in Independence (Washington County) served as a hub of education in frontier Texas until the school moved to Waco in 1886. The museum was named the Strecker Museum in 1940 in honor of this long-time curator and famous naturalist. In 1963, the Youth Cultural Center opened as "a place to look, think, and learn." In 1994, the name was changed to the Ollie Mae Moen Discovery Center in her honor. The Discovery Center and natural history collections were incorporated into the new Mayborn Museum Complex in 2004.

Sam Noble Museum of Natural History, University of Oklahoma

The Sam Noble Museum of Natural History contains ~7 million objects and specimens in 12 collections. It has Over 50,000 sq ft of exhibit space, with five galleries and exhibits that provide an in-depth tour of Oklahoma's natural history. OU claims that it is one of the world's largest university-based natural history museums. Before its completion in 1999, the Stovall Museum of Science and History, chartered by the Legislature in 1899, had occupied much smaller quarters on the OU campus. Museum building square footage by function: collections (38,524), custodial (875), food service (2,055), galleries (56,589), halls-stair-lobbies (24,747), labs (8,193), libraries-resources (2,857), mechanical (16,913), offices (10,620), restrooms (3,196), storage (5,445), store (1,092), teaching (8,975), misc (6,597). Total square footage = 185,704.

Summary of Recently Built Facilities at Other Universities

Burke Museum of Natural History and Culture, University of Washington

Summary: Large natural history collection, divided between anthropology, biology, and geology divisions. Total number of specimens ~16 million. Public exhibits major part of building (i.e., typical large city natural history museum)

Built: 2018

Space: 110,000 sq. ft. for public exhibits, collections, research space, etc. Some collections (e.g., Ichthyology) are still housed separately on campus.

Cost: $106 million

Natural History Collections, University of Michigan

Summary: 15 million animal specimens, including vertebrates and invertebrates (wet collection houses ~3.3 million specimens); 1.7 million herbarium specimens. Collections used to be separate but now housed together in a newly renovated facility just off campus; merger of zoology and herbariums happened in 2013.

Buildings: the new Research Museum Center houses herbarium, zoology, paleontology, and anthropology collections; Alexander B. Ruthven Museums Building houses public exhibits on campus

Built: Research Museum Center renovated/expanded in 2021. Ruthven Building and others have been renovated over several years/decades.

Space: Research Museum Center ~100,000 sq. ft.

Cost: Estimate provided for renovation/expansion of Research Museum Center; ~$35 million for entire Research Museum Center ($17.6 million to renovate space/relocate zoology collections)

Florida Museum of Natural History, University of Florida

Summary: Public exhibits in Powell Hall on campus. Currently, multiple natural history collections are scattered across campus in various departments, and a new Special Collections facility is being constructed off campus this year.

Buildings: Special Collections facility (under construction); Public Exhibits are in a separate

building on campus (Powell Hall built 1998)

Space: 23,600 sq. ft. (2-story Special Collections facility)

Built: Currently under construction

Cost: $11.446 million

Natural History Museum of Utah, University of Utah

Summary: The designated state museum of natural history cares for collections of >16 million natural and indigenous cultural objects, providing educational services to develop a science-literate workforce.

Buildings: Rio Tinto Center

Space: 163,000 sq. ft.

Built: 2011

Cost: $102.5 million (Funding came from the federal government, the Utah State Legislature, a bond supported by the voters of Salt Lake County, and over $44 million raised through individual, corporate and foundation philanthropic support.)

Museum of Vertebrates, Ecology and Evolutionary Biology, Cornell University

Summary: Research collection of ~1.5 million specimens of fishes, reptiles and amphibians, birds and mammals. Housed within Imogene Powers Johnson center for Birds and Biodiversity together with Lab of Ornithology; located off campus. Facility does not focus on exhibits.

Built: 2003

Space: 80,000 sq. ft. for collections, research space, offices (located within a 220-acre natural area)

Cost: $52 million

Auburn University Museum of Natural History, Auburn University

Summary: Auburn recently renovated and expanded their natural history collections facility on campus. The Auburn collections are housed in the Biodiversity Learning Center, a state-of-the-art collections facility. The museum does not have public exhibits.

Buildings: Biodiversity Learning Center (attached to M. White Smith Building)

Built: 2014

Space: 15,000 sq. ft.

Cost: $2.4M (+ compactors @ $200K)

Other Peer Universities with Important Natural History Museums and Collections:

Northeast–

Museum of Comparative Zoology, Harvard University

Peabody Museum, Yale University

Connecticut State Museum of Natural History & Connecticut Archaeology Center, U Conn

University of Vermont Natural History Museum, University of Vermont

Academy of Natural Sciences of Drexel University

East–

North Carolina Museum of Natural History, NC State University

Cambell Museum of Natural History, Clemson University (small museum)

Georgia Museum of Natural History, University of Georgia

McClung Museum of Natural History and Culture, University of Tennessee

Cheatham Hall Natural History Museum, Virginia Tech University (small)

Midwest–

Museum of Biological Diversity, Ohio State University (struggling?)

Illinois Natural History Survey, University of Illinois

Museum of Natural History, University of Iowa

UW Zoological Museum, University of Wisconsin

Bell Museum, University of Minnesota

KU Biodiversity Institute & Natural History Museum, University of Kansas

Sam Noble Museum of Natural History, University of Oklahoma 185,704 sq. ft.; ~80M

South–

Texas Memorial Museum, University of Texas at Austin

Museum of Texas Tech University, Texas Tech University

LSU Museum of Natural Science, Louisiana State University

Tulane Museum of Natural History, Tulane University

Alabama Museum of Natural History, University of Alabama

University of Arkansas Museum, University of Arkansas at Fayetteville

West–

Museum of Southwestern Biology, University of New Mexico

Museum of Natural History, University of Arizona

Arizona State Museum (archeology), University of Arizona

Natural History Collections, Arizona State University

Berkeley Natural History Museum, University of California at Berkeley

Natural History Museum, Humboldt State University

Norris Center for Natural History, University of California at Santa Cruz

Museum of Natural History, University of Colorado

Museum of Natural and Cultural History, University of Oregon

Museum of the Rockies, Montana State University

Idaho Museum of Natural History, Idaho State University

University of Alaska Museum of the North, University of Alaska at Fairbanks

Museum of Natural History, University of Hawaii

Proposed Types of Spaces for the Museum

The below are the minimum space requirements for a museum (does not include square footage needs).

MUST HAVE's

OBJECTS

Museum Objects – Exhibition Space

- Exhibit space (permanent, long-term, short-term/traveling)
- Exhibit Prep
- Fabrication space (a place to create exhibit components including storage space for materials used to fabricate exhibits)

Museum Objects – Preparation, Care, and Research Space

- Object examination, care, and research space
- Object decontamination (including transport crates)
- Object acclimation
- Collections wet workroom (decontamination for people/chest high sinks)

Museum Objects – Storage

- Collections storage (this may mean several different things depending on the type and size of the collections)
- Objects with intrinsic value storage space
- Prep space for shipments (when we are shipping out)
- Crate storage (must be a specific location that fulfills environmental requirements and is secured)

PEOPLE

People – Teaching

- Classroom for teaching (1)
- K-12 Learning/Activity space to engage with exhibits

People – Administration

- Office space for museum staff
- Breakroom for museum staff
- Staff Lockers

People – IT & Security Specialists

- IT specialist space - telecommunications
- Security specialist - command center space (this will potentially include the security cameras)

People – Volunteers

- Volunteer Lounge

People – Custodial Staff

- Custodial space - closet/supplies

BUILDING FUNCTIONS

Special Use Spaces - Public

- Welcome Center
- Gift Shop
- Auditorium
- Restrooms
- Elevators, if 2 story or more (needs to be a large elevator to accommodate large crates etc…

Special Use Spaces - Special Events

- Open Indoor & Outdoor Spaces for Entertaining Guests
- Catering Kitchen

Special Use Spaces - Storage

- Media/Supplies Storage
- Movable Wall storage space
- Space for Vitrine Storage
- Storage for event tables & chairs

Special Use Spaces - Operations

- Conservation space
- HVAC - Mechanical Rm
- Loading Dock
- Fumigation (CO_2 space)
- Pest management location to decontaminate things before they come into the building
- Space with emergency generators to support security system in case of electrical failure

DREAM ITEMS

- Additional classrooms
- Additional research space
- Reference/Library
- Planetarium
- Aquarium
- Cafe
- Collections Photo Studio
- CT scanner
- Outdoor space to extend the exhibits (objects, butterflies etc…), provide for additional entertainment/events opportunities, picnics, a park
- Utilize the roof as a green space and exhibits expansion
- VERY interactive exhibits with educational and engagement opportunities for the visitors

Proposed Museum Location Attributes

1) The museum needs to provide ease and ample parking access for:
   a) Visitors
   b) Special events
2) The museum needs to provide accessibility for:
   a) Buses
   b) People with walking/sight/movement challenges
3) The museum needs to be located within walking distance from a bus stop/parking location (proximity should be considered)
4) Access to the museum needs to be clear and not intimidating with signage.
5) The museum could benefit from existing parking facilities, which should be considered to leverage existing resources, if feasible.
6) The cost of parking to visit the museum needs to be considered, especially for members of our community in Bryan-College Station, and Texas A&M students who might have limited resources.
7) The operation of the museum needs to consider game days and graduation type events, and coordinate with the respective administrative units.
8) The location of the museum should promote and encourage game day visitation.
9) The location of the museum should consider and allow room for expansion.
10) The museum needs to be located within an environmentally pleasing space that draws people in, and that s allows for outdoor activities, while serving as an example of environmental stewardship.
11) The museum needs to consider how it relates and/or integrates with the disciplines associated with the museum, and their own locations? (This needs to be considered)

Proposed Museum Attributes – Functionality, Form, and Aesthetic

KEY ATTRIBUTES	AMERICAN MUSEUM OF NATURAL HISTORY	BURKE MUSEUM - UW
Size/Location	**2M+ sq. ft.** / Manhattan, New York	**105,000 sq. ft.** /Seattle, Washington
Architects	**First Building Architects** (1874): Calvert Vaux and J. Wrey Mould; **A New Educational Facility Architects** (2019): Studio Gang Architects and Ralph Appelbaum Associates	**Design Principal:** Tom Kundig; **Project Manager:** Stephen Yamada-Heidner; **Architect:** Edward Lalonde and Justin Helmbrecht;
Annual Attendance	**≈5M**	**33,746**
Focus	The ecosystems and cultures around the world (covers history and biodiversity of different habitats)	Variety of biodiversity; cultural materials and art from different tribes and cultures
Funding	**32%** of revenue: **Contributions** and **Grants** (DCMS government grant-in-aid is the majority); **20%** of revenue: **Visitors' contributions** and **admissions**; **18.1%** of revenue: **investment returns**; 29.9%: other	Majority of Revenue: **38% UW in-kind Support**; **26%**: UW/Arts & Sciences; 17%: Restricted funds released; 18%: Other
Collection	**33M+ specimen and objects** (Anthropology, Invertebrate, Vertebrate Zoology - herpetology, ichthyology, mammalogy, ornithology, Paleontology, Physical Sciences - Astrophysics and Earth & Planetary Sciences)	**18M+ specimen and objects** (Heritage, Arachnology & Entomology, Genetic Resources, Herpetology, Ichthyology, Malacology, Mammalogy, Ornithology, Plants & Fungi, Invertebrate & Micropaleontology, Minerals, Paleobotany, Vertebrate Paleontology)
Employees	**1,382**	**110**
Educational Programs	Educational Programs & Resources; Field Trips; Graduate Level Programs	Virtural Education Programs, Portable kits, BurkeMobile, Field trips, DIG Field School, Fun Packs, and Science Mentorship
Exhibits	Biodiversity in the US and worldwide, Different ecosystems; Prehistoric bones and different indigenous cultures and histories around the world	Biodiversity (biology and paleontology) and Cultural materials (archeology and art)
Notable Aspects	One of the world's most visited museums; **Largest Natural History museum in the world**; Said to serve as a field guide to the entire planet and present a panorama of the world's cultures	Oldest Museum in Washington State, world's large collection of spread bird wings
Other Features	Library, Planetarium	

KEY ATTRIBUTES	CALIFORNIA ACACDEMY OF SCIENCES	FIELD MUSEUM OF NATURAL HISTORY	FLORIDA MUSEUM OF NATURAL HISTORY - UF
Size/Location	**410,000 sq. ft.** ($488 mil in 2005)/ San Francisco, California	**480,000 sq. ft.** / Chicago, Illinois	**98,580 sq. ft.** (gross estimate) - Museum/Gainesville, Florida
Architects	**Architects:** Renzo Piano Building Workshop, Stantec Architecture; **General Contractor:** Webcor Builders; **Engineering and Sustainability Consulting:** Arup; **Landscape Architecture:** SWA Group; **Project Manager:** DRY and Associates	**Architect**: Peirce Anderson of Graham, Anderson, Probst and White	**Architect:** William Morgan
Annual Attendance	**1.5M**	**2M**	**150,267** Visitation; 186,983 program attendees
Focus	Teaching and informing public about the different scientific fields; Diversity (includes species and information from around the world)	Different geographic regions and their cultural history and biodiversity.	Research, archeology and biodiversity (mainly lepidoptera)
Funding	Majority of Revenue: **48.4% Investerment Return;** Contributions and Grants: **31.6%**; Endowment support: **6.8%;** City: 4.6%; Membership and Admissions: 7.6%; Other: 1%	**38%** of revenue: **investment returns; 33%** of revenue: **contributions**; 29% of revenue: other individual sources	Majority of Revenue: **49.89% UF and State Allocation; 23.67%**: Contracts and Grants; 11.60%: Gifts; 14.84%: Other
Collection	**46M+ specimen** (geology, paleontology, mammals, ornithology, cultural artifacts)	**40M+** objects and specimen (culture, animals, fossils & meteorites, and plants & fungi)	**22,000 specimen** (Archaeology & Ethnography, Biodiversity - botany, genetic repository, herpetology, ichthylogy, invertebate zoology, lepidoptera, mammals, ornithology-, Paleontology - invertebrate, paleobotany & palynology, vertebrate); Collection space: **≈39,000 sq. ft.** (located in a different building)
Employees	**504**	**730**	**53** full time employees (271+ students and postdoctoral researchers)/ **4148 sq. ft.** (gross estimate)
Educational Programs	Offers online programs, Youth programs, Scienctific expeditions	Summer Camps for multiple age groups (children); Field Trips; Learning Resources; SUE Science Saturdays; Discovery Adventures	Research programs (Paleontology, Modern Biological Sciences, Geology); Education and Training; Laboratory space: **1238 sq. ft.** (gross estimate)
Exhibits	**Total public space: 100,000 sq. ft.** (Aquarium, Planetarium, Rainforest, Natural History Museum, NightLife)	Different geographic regions around the world (biodiversity and cultural history); Cultural and societal events around the world	Natural history of Florida and its diverse biodiversity Powell Hall: **6,050 sq. ft.;** Total space: **7,110 sq. ft.** (gross estimate; Auditorium included)
Notable Aspects	**Biggest collection of specimens in the world**	One of the largest museums in the world; **one of the world's greatest museums of natural history**	5th largest Ornithology collection in the world; Osteological fish comparative collection is one of the largest in North America; Among the largest herpetology collection in North America; **1 of the largest Lepidoptera collections in the world**
Other Features	Library, Cafe, Store, Restaurant		Discovery Zone (**2,000 sq. ft.**), Butterfly Rainforest, Garden and trails; Store: **2,378 sq. ft.** (gross estimate); Other facilities: **4,208 sq. ft.** (gross estimate)

Key Attributes	Sam Noble Museum-UO	Smithsonian National Museum of Natural History	University of Michigan Museum of Natural History
Size/Location	**198,000 sq. ft.** / Norman, Oklahoma	**1.32M sq. ft.** / Washington, D.C.	**312,000 sq. ft.** - $261M in 2019 (includes Biological Sciences) /Ann Arbor, Michigan
Architects	**Architect:** Kaighn and Associates; **Contractor:** Flintco	**Architects** (1905): Charles Follen Mckim (from McKim, Mead, and White) and Daniel Hudson Burnham	**Architect:** Ennead Architects, SmithGroup; **Contractor:** Barton Malow
Annual Attendance	**15,000**	**982,080**	**165,000**
Focus	Focuses on the histories of cultures and different organisms; State history and finds as well.	Natural History of human cultures and origins, biodiversity and natural history of different habitats (oceans, mammals, insects)	Natural sciences (biology, space and time, and evolution); Merged the Biological Science building with the Museum
Funding	Majority of revenue: **donations and gifts (49.5%)**; Another large percentage of revenue: **admissions (39.4%)**; 11.1% of revenue: other individual sources	**55%: funding from Federal Appropriation; 23%: revenue from Contributions & Grants;** 8%: Business Activities; 6%: Endowments; 9%: Other	Museum is tied to university building (Biologoical Sciences); **Majority of funding: Endowments;**
Collection	**10M+ objects and specimen** (Archaeology, Ethnology, Herpetology, Ichthyology, Invertebrate Paleontology, Mammalogy, Native American Languages, Genomic Resources, Ornithology, Paleobotany, Vertebrate Paleontology)	**146M+** specimen and objects (Anthropology, Botany, Entomology, Invertebrate & Vertebrate Zoology, Mineral Science, Paleobiology, and Arts)	**13M+ specimens** (Zoology, Paleontology, and Anthropology) **Total space: 97,000 sq. ft.** (located in a different building)
Employees	**80 - 100**	**427**	**17** (museum only employees)
Educational Programs	Adult Programs; Discovery Room Sessions; School Educational Programs; Discovery Kits	Digital School Programs, Multiple School Programs for different age groups, Teaching Resources, Youth/Family/Adult Programs, Festivals and Event Series	Workshops, Virtual field trips, Labs, Discovery Guides
Exhibits	Cultural and archaeology of indigenous people around the world. Includes paleontology and zoology.	Natural habitats and human history (artifacts and bones). Includes animals and sea creatures life and history.	Designed to show visitors the processes and details of different scienctific research. Portrays different natural sciences. **Total space: 22,000 sq. ft.**; Designers: Lord Cultural Resources, Xibitz and Taylor Studios
Notable Aspects	**Among the most scientifically important invertebrate paleontology collections in North America**; World's largest Apatosaurus skeleton	One of the largest, most comprehensive natural history collection in the world, one of the most visited natural history museums in the world	Museum of Natural History winds its way through the building; Allows the public to view some visible labs; **One of the largest university aquatics facilities in the country**; Largest display of dinosaurs in Michigan
Other Features		Other facilitation requirments: **995,000 sq. ft.**	Planetarium, Team-based Learning Classroom, Dome Theater, 2 Specimen-based classrooms

KEY ATTRIBUTES	FORT WORTH MUSEUM OF SCIENCE AND HISTORY	TEXAS MEMORIAL MUSEUM(TEXAS NATURAL SCIENCE CENTER)	PEROT MUSEUM OF NATURE & SCIENCE
Size/Location	**166,000 sq. ft.** ($80mil in 2009)/ Fort Worth, Texas	**35,356 sq. ft.** (museum)/ Austin, Texas	**180,000 sq. ft.** ($185 mill in Dec. 2012) / Dallas, Texas
Architects	**Design Architect** - Legorreta + Legorreta (Mexico City, Mexico); **Architect of Record** - Gideon Toal (Fort Worth, Texas); **Landscape Architect** - Mesa Digen Group (Fort Worth, Texas); **Contractor** - Linbeck Group LLC (Fort Worth, Texas); **Project Manager** - The Projects Group; **Civil Engineer** - Kimley-Horn Engineering; **MEP Engineers** - Blum Consulting Engineers; **Structural Engineers** - Datum Engineers; **Exhibition/Media Design/Development** - multiple companies	Details not available	**Designer**: Laureate Thom Mayne; **Architect Company**: Morphosis Architects (Culvercity, California); **General Contractor:** Balfour Beatty Construction (Dallas, TX); **Waterproofing Contractor**: Alpha Insulation & Waterproofing (Grapevine, TX); **Associate Architect:** Good Fulton & Farrell; **Lighting Consultant**: Office for Visual Interaction; **MEP Engineer**: Buro Happold
Annual Attendance	**≈1M**	**35,000+**	**950,000+ attendance; 1.15M+ served**
Focus	Educating all ages. Primarily showcase Texas natural history.	Texas natural sciences and history	Natural History, science, and technology
Funding	Primary funding: **patrons** and **investors. 50.2%:** contributions; **39%:** program services; 9.8%: other sources	Currently trying to secure funding (**Donations** are the current majority of funding; **University** is the other major funding factor)	**≈50%** funding: **Earned Revenues**; **≈43%: Contributed Revenues**; **≈8%: investment income**
Collection	**100,000+ objects and specimen** (Includes minerals, dinosaur fossils, birds, herbarium, and mammals); **6,900 sq. ft.** (estimated size)	**5.7M specimen** (Paleontology, Geology, Herpetology, Ichthyology, Entomology, and Diatomology); Collections and Research space **Total: 35,193 sq. ft.** (gross estimate)	**200,000+ items** (Entomology, Vertebrate and Invertebrate Paleonology, Malacology, Ichthyology, Herpetology, Ornithology, and Mammalogy)
Employees	**92** / Estimated space: **10,000 sq. ft.**	Amid hiring and training new employees/offices located in the WCH and PAI buildings of UT	**101**
Educational Programs	Discovery Space: Discovery: **6,000 sq. ft.** (estimated); Museum School, Virtual Field Trips. Discovery lab on wheels, Family Science Night programs, Discovery lab online, Discovery kits	Currently closed.	Field Trips, School Campus Visits, Virtual Programs
Exhibits	For all ages with interactive and hands-on exhibits to facilitate learning. **Total Space: 52,000 sq. ft.** (Innovation Studios - 7,600 sq. ft.; Innovation Gallery - 5,000 sq. ft; Urban Lantern - 2,000 sq. ft.; Energy Blast - 10,000 sq. ft; Heritage Courtyard - 4,450 sq. ft.; Oak Room - 3,400 sq. ft.; Fort Worth History Gallery - 3,000 sq. ft; Dino Labs - 3,700 sq. ft.; Cattle Raisers Museum - 10,000 sq. ft.; ; Science Studio - 2,500 sq. ft.) **Children's Museum** - 18,000 sq. ft.; **Planetarium:** 900 sq. ft. (estimated); **Omni Theather:** 30,000 ft	Currently closed to the public (Past Exhibits: Hall of Geology and Paeontology, Great Hall, Hall of Texas Wildlife, Hall of Biodiversity)	Variety of natural sciences, physical sciences (space, earth, and innovations), and biodiversity **Approximate total:** 80% of total square footage of the building = **144,000 sq. ft.** (Main lobby - 7,750 sq. ft.; learning labs, theater - **≈3,726 sq. ft.**, exhibits, auditorium, and planetarium)
Notable Aspects	Omni Theater, Children's museum, Planetarium, Retail, and Dining areas	Museum in risk of permanent closure; Public (exhibit) space is Texas Memorial Museum, research and collections are in different buildings located at JJ Pickle Research Campus	Engaging hands-on exhibits (6 learning labs - **≈4,410 sq. ft** total) Auditorium, and Planetarium
Other Features	**Total Restroom sq. ft:** 8,800 sq. ft; **Stars Cafe** - 3,000 sq. ft.; **Store** - 3,000 sq. ft.;	Vertebrate Paleontology Annex = 1,372 sq. ft.; Non Vertepaleontology Lab = 3,872 sq. ft.; Texas Archeological Res. Lab = 29,989 sq. ft.	Other faciliation requirements space = **20% of total square footage**; public cafe, retail store; rain-water collection system

KEY ATTRIBUTES	WITTE MUSEUM	HOUSTON MUSEUM OF NATURAL SCIENCE
Size/Location	**174,000 sq. ft.** (museum) / San Antonio, Texas	**433,000 sq. ft.** / Houston, Texas
Architects	**Main Building Designer:** Lake|Flato; **Exhibition Designer**: Gallagher and Associates (Museum Planning and Design Firm)	(Built in 1960) **Designer:** Jim Goodwin of Pierce and Pierce; **Consulting Firm**: Staub, Rather, and Howze
Annual Attendance	**600,000**	**2M**
Focus	History and heritage of South Texas	Natural science; Different cultures and paleontology.
Funding	Main support from the city of San Antonio **Department of Arts & Culture; 74.1%:** Contributions; **11.6%:** program services; 16.4%: other sources	**60.1%** funding: **Contributions and Grants**; **33.2%** funding: **Program Service Revenue**; 15.6% funding: Other
Collection	**320,000 artifacts & specimen** (Natural History - zoological, herpteology, paleontology, butterflies, botanical, shells, gems & minerals, and live animals - Texas Art, World History, Military HIstory, Texas History, Fossils, Anthropology, and American History); **Located at B. Naylor Morton Research and Collection Center** (size not available)	**1.5M+ artifacts and specimen** (African & Texas Wildlife, Astronomy, Energy, Indigenous Cultures of North, Central and South America, Paleontology, Ancient Egypt, Chemistry, Gems & Minerals, and Malacology)
Employees	**50**	**311**
Educational Programs	Group Visits, Distance Learning for Classes and Groups, Museum Camp, STEAM (Science, Technology, Engineering, Art, and Math) Sunday, Land Stewardship Ambassador Program, Professional Teacher Development	**For Students:** School field trips, Science Camps, Classes & Labs, Outreach Programs; For Teachers: Trainings, Events, Workshops; **Adults**: Lecture Series, Classes and Tours, Travel Programs, Day Excursions, Cultural Dining Experiences
Exhibits	Southern natural history and lifestyle. (collections are stored off-site)	(Exhibits change frequently) Focus on Astrology, Ancient Egypt, and Human biology and life; Natural history of multiple fields
	Approximate Total for exhibits: **35,000 sq. ft.** (Vister entrance, Valero Great Hall, Dinosaur Gallery, People of the Pecos Prehistory galleries, and Learning Labs); **20,000 sq. ft** for South Texas exhibits, collections, and public programs	Wiess Energy Hall 3.0 - **30,000 sq. ft.**; Paleontology hall - **230,000 sq. ft.**; Hammon Hall of Texas Coastal Ecology - **2,400 sq. ft.**; Welch Hall - **15,000 sq. ft.**;
	Mays Family Center - **19,000 sq. ft.**	Cockrell Butterfly Center - **3,000 sq. ft.**
Notable Aspects	World-class collection of historical artifacts, dioramas, relics, fossils, and displays on Texas heritage, natural history, and science	One of the most heavily attended museums in the US; **Largest Paleontology hall in the US**; **One of the largest collections of mollusk in the world**
Other Features	Rentable Venues - **10,000 sq. ft.**	Wortham Giant Screen Theater, Planetarium, George Observatory