Per[ ]t
Museum of Nature and Science

Exhibition Scope

Title: Exploring Our Origins (working title)
Dates: October 2019-March 2020
Venue: Temporary Exhibit Hall, Perot Museum of Nature and Science
Scientific Curator: Dr. Becca Peixotto
Exhibition Designer: Mike Spiewak

1. Project Objectives

1. To produce a major North American exhibition of original hominin fossil material from South Africa
2. To explore the process of scientific research and discovery that is occurring in South Africa regarding the origins of humankind
3. To offer visitors from North Texas and across North America the unique opportunity to see fossils of our ancient human ancestors for themselves, and to explore our shared human history
4. To highlight scientific professionals working in South Africa and careers associated with this research, particularly women and people of underrepresented communities
5. To deepen the partnership between the Perot Museum of Nature and Science (Museum) and the University of the Witwatersrand (Wits) as the two institutions collaborate on academic, scientific, and social justice goals in the areas of paleoanthropology and science communication
6. To introduce and raise the profile for the Museum's Center for the Exploration of the Human Journey in the field of paleoanthropology

2. Concept

Overarching Theme:

> *The discoveries of Australopithecus sediba and Homo naledi, in the region of the Cradle of Humankind UNESCO World Heritage Site in South Africa, changed how we understand the origins of humanity. The wide variety of scientific expertise involved in the fossil discoveries and subsequent research reminds us of the importance of science as we seek to understand our species' ancestry. The collaboration, tenacity, dedication, innovation and courage demonstrated by the scientific team is an inspiring human story to know and tell.*

Key Messages:

1. All modern humans today can trace their deepest roots to Africa.
2. South Africa is home to two important recent discoveries in paleoanthropology.
3. As we begin to understand these early hominins, we also learn more about ourselves.

Visit Outcomes:

Visitors to the exhibition will have the opportunity to:

1. Be aware that the Perot Museum of Nature and Science has an interest in human origins and is engaged in formal collaborations with the University of the Witwatersrand
2. See original fossils of our ancient human relatives for themselves
3. Explore our shared humanity and our shared roots
4. Celebrate emerging scientific discoveries, especially those coming from South Africa
5. Understand the possibilities within scientific analysis and the contributions of South African-based research
6. Imagine the future of technology's impact on science
7. Be inspired to engage with exploration and science

3. <u>Context and Issues</u>

This exhibition will occur within the framework of the Memorandum of Understanding signed in July 2018 by the University of the Witwatersrand and the Perot Museum of Nature and Science to further shared academic, scientific, and social justice goals particularly in the areas of paleoanthropology and science communication. The Museum's Center for the Exploration of the Human Journey was established a few months earlier to deepen the relationship between the Museum and Wits Professor Lee R. Berger and to expand the Museum's engagement with human origins topics, topics which are poorly represented in education and museums in North Texas and throughout the region.

The Museum currently houses 11 permanent exhibit halls whose content includes earth sciences, paleontology, ornithology, planetary sciences, minerology, energy production, engineering, life sciences, and human evolution. Most recently, the museum completely updated its Being Human Hall to include a more robust presentation of human evolution, including the discovery of *Homo naledi,* using tactile and multimedia interactives as well as hyper realistic hominin sculptures and a virtual reality experience.

The presence of this singular exhibit of original hominin fossils in Dallas, the heart of a region of the United States known more for a skepticism toward human origins than for an embrace of the science behind it, offers a tremendous opportunity to engage audiences in important conversations about evolution, epistemology, and diversity and inclusion in science.

The Center for the Exploration of the Human Journey (CEHJ), a division of the Museum focused on science communication of paleoanthropology and allied fields, will develop programming to increase the scale and educational impact of the *Human Origins* exhibition. The CEHJ identifies three target audiences for outreach: (1) the general public, (2) educators and (3) researchers.

The exhibition will celebrate the South African fossil discoveries, the world-class research centers at Wits, the vibrant Wits-based research community, and the contribution of scientists

from around the world. However, the exhibit of original hominin fossils material may be subject to criticism. In Texas, discussions of human evolution may be seen by some members of the public as being in conflict with their religious beliefs. Some members of the broader scientific community may object to original fossils traveling out of their home country (South Africa), in particular the holotype specimen of *Au. sediba*. The Museum and Wits are confident the benefits of the exhibit to the public and to the research community outweigh any potential criticism from parties not directly involved in the exhibit or the *Au. sediba* and *H. naledi* research teams.

We believe the display of these fossils with clear scientific information will serve to educate and enlighten visitors of all backgrounds and beliefs about our shared heritage as humans.

4. Interpretive Approach

The exhibit will focus on the stories of the exploration and discovery of *H. naledi* and *Au. sediba* within a 5,000 square foot space. Due to the limited footprint it will not be possible to tell the stories of the analysis and implications of *Au. sediba* and *H. naledi* in full, rather it will introduce the visitors to these topics. The interactive portions of the exhibition will expose the visitors to the technologies and processes used by the scientific team, from 3D scanning and printing to photogrammetry and CT scans.

Through the combined use of film, personal stories, authentic objects, visual and written content, discovery and interactivity – the exhibition will be a powerful, informative, compelling and memorable experience.

The exhibition will be formed around the original hominin fossil material. Thus, it is necessary to seek a loan of that material from the collections at Wits. As the fossil hominins are national treasures and the cultural patrimony of the people of South Africa, the Perot Museum will work closely with Wits in the development and implementation of the exhibit.

5. Outline Narrative

Section 1: Introduction to Prof Berger and Paleoanthropological Exploration and Discovery in South Africa

Upon entering the exhibit, visitors will view a short video which introduces the exploration and science team lead by Prof Berger and their inspired thinking around exploration and working in South Africa. We will hear the story of his son discovering the first *Au. sediba* fossils and subsequent discoveries related to *H. naledi.*

Section 2: *Australopithecus sediba*
Section 2.1: Discovery and Science of *Australopithecus sediba*

Following the film, visitors will enter a gallery that displays the authentic *Au. sediba* fossils, are complemented with a rich narrative and photographic presentation of the larger *sediba* story.

This will include an explanation of the discovery's significance and the *sediba* project's impact on paleoanthropology.

Proposed Key Loan Objects:
The MH-1 Karabo skull, other prepared skeletal elements from Karabo, and Block 10 containing what is believed to be the left side of the Karabo individual.

Section 2.2: Transition
A large graphic panel will continue the story of the team's scientific discoveries as it introduces the *naledi* story to the museum visitors.

Section 3: *Homo naledi*
Section 3.1: Discovery and science of *Homo naledi*
The next gallery will elaborate on the *H. naledi* discoveries and the intriguing questions that have emerged from that dramatic find. Visitors will have a chance to understand the cave where the objects were found, the team of Underground Astronauts who work in the cave, the technologies that are in use to support and enhance the science and the remarkable reaction to this unexpected discovery.

Section 3.2: Transition
An environmental passageway will lead visitors from this gallery toward the actual presentation of the fossils. Within the passageway, questions will be posed encouraging the visitors to ponder not just the uniqueness of the find's location deep in the cave but also the nature of our ancient relatives.

Section 3.3: Fossils
Emerging from the passageway, visitors find the remains of the *H. naledi* individuals presented with reverence in a specially lit gallery. The fossils will be dramatically lit and presented with limited label content to allow a powerful visual and emotional impact. A full-sized, hyper-realistic model of *Homo naledi* will stand attentively in the gallery overlooking the space.

Proposed Key Loan Objects:
The fossil remains of LES-1, the Neo individual.

Section 4: Interactive
The final space allows a more light-hearted and interactive experience that imagines a paleo-anthropological excavation site of the near-future. Through the use of handheld technology and a theatrical setting including a large photo mural of the South African landscape, visitors are encouraged to locate, dig up and document a hominin fossil or artifact. They also then use near-future technology to analyze their discovery and learn about its history.

6. <u>Audience and attendance</u>

The exhibition will appeal to several segments of the Museum's audience:

Primary Audience

Families

The interactive and experiential components paired with the significant historical objects in the exhibition directly play to our member audience – comprised mostly of families with children – as well as our nonmember audience who visit as families during the holiday season. Connecting through experiences is one of the biggest reasons these groups visit the Museum, and this exhibition will allow for these types of engagements.

With a focus to connect with the Spanish speaking audience in our community, the bilingual aspect of this exhibition will widely appeal to our Hispanic guests who seek content in their native language.

Secondary Audiences

Schools and students

Rich educational content for schools along with an exhibition run during peak school group season will help drive attendance for those groups. The Museum will develop Teacher Resource Packs to help educators align classroom visits to the exhibition with the required Texas Essential Knowledge and Skills standards.

The Dallas-Fort Worth area is home to more than 35 institutions of higher education, many of which offer courses in human origins, archaeology, and anthropology. Students and instructors will want to engage with the exhibition as a unique opportunity to see original hominin fossils in person.

Experts

This exhibition will appeal to specialists in paleoanthropology and allied field by showcasing original fossil material and new research.

Donors

The exhibition content strongly aligns with focus areas for our donor base who will connect to the exhibition through special donor engagements.

Th exhibition will also appeal to the South African community in Dallas and throughout the region.

7. Exhibit-related programming

General Public: CEHJ will offer an assortment of public programs to accompany the *Human Origins* exhibition. Programming will include paleoanthropology-themed current Museum programs, such as *Science on the Spot*, *Social Science* and *Science Café*, as well as novel programming to facilitate public engagement with active scientists. In an effort to highlight South African culture and natural history, the Museum will partner with another cultural institution in Dallas to host an event.

Educators: Building on established Museum expertise in teacher training, the CEHJ will offer professional development workshops for middle school, high school and community college educators. Educators will increase their paleoanthropology content knowledge and science communication skills by working directly with scientists and Museum education staff to learn creative, engaging and effective ways to teach human origins and evolution. Teachers will earn Continuing Professional Education (CPE) credit for their participation.

These workshops will allow the Museum to establish itself as a center for Human Origins training by creating a small cohort of more confident and capable paleoanthropology educators. Participating educators will improve their teaching practice with free or low-cost training and CPE credit. A pilot workshop is scheduled for February 2019.

Researchers: Working in collaboration with the Wits curators, the CEHJ will facilitate research access to fossil material for select scientists. Researchers will apply for access through existing University of Witwatersrand channels and follow Wits policies and procedures. The Museum will provide after-hours lab space, curatorial supervision and museum security. Participating scientists will agree to present at a Museum educator workshop, school program, or public program during their stay in Dallas, TX.

Scientists will benefit from the opportunity to access the fossils and gain teaching experience in an informal educational environment. Through this partnership, the Wits and the Museum will expand their network of scientific collaborators and increase their institutional profile within the academic community.

This programming will increase public engagement with paleoanthropology and South Africa, as well as raise the profile of important paleoanthropological finds

8. Travel Protocols

Wits and the Museum propose the following travel protocols:

1. The Malapa and Lesedi hominins (MH-1, Block 10, and LES-1) will be hand-carried by Prof Berger or other designated representatives of Wits and the Museum to and from the USA unless written instructions to the contrary have been received from the repository, University of Witwatersrand.
2. The fossils should arrive to the Museum on or about 1 October 2019.
3. A complete and adequate photographic record must be made before the fossils are transported.
4. The objects or specimens must be clearly marked with accession numbers.
5. The material must be carefully packed and all packaging must be clearly marked with the accession numbers, the name of the site, and the name and address of the permit holder or the University of the Witwatersrand.
6. The material may not be loaned to any person or institution other than Prof Berger or the Perot Museum of Nature and Science without the consent of SAHRA.

7. The material shall be returned to South Africa on or before 01 May 2020 at the expense of the Perot Museum of Nature and Science.
8. SAHRA will be notified in writing of the return of the material, and a report on the activities undertaken in terms of this permit will be lodged with SAHRA before 01 June 2020.
9. Copies of all papers or publications resulting from this permit will be lodged with SAHRA.

9. Security and Exhibit Protocols

Perot Museum of Nature and Science (Museum) must provide security for the Fossils from the moment they are received at Museum premises, during all phases of unloading, unpacking, installation, display, de-installation, repacking, and loading, until the moment it is shipped out from the Museum premises. Wits will review and approve the Fossils security plan with the Museum upon submission of the Museum floor plan.

The Museum agrees to display the Fossils in a limited access space. Dedicated staff with mutually acceptable security training must staff the Fossils whenever it is open to the public. the Museum will provide a copy of their security training plan. The appropriate number of staff shall be determined and specified in writing by Wits in consultation with the Museum upon floor plan submission by the Museum.

A dedicated security member must control access to the Fossils space at all times the space is open and must be present if any Fossils are stored in the Exhibition space during installation and de-installation.

The Exhibition space must be locked, monitored and alarmed when no dedicated staff members are present and/or the Museum is closed to the public.

The Exhibition hall must be equipped with a reasonable number of cameras and night intrusion devices.
Entry and exit points must be equipped with video surveillance and door contact devices.

The Fossils must be covered by 24-hour monitored and recorded CCTV surveillance.

Alternatively, the Fossils must be checked regularly after hours by guards on rounds. Wits will review the Museum afterhours security plan and may deem additional security necessary at the Museum expense upon discussion with the Museum.

At the time of floor plan submission, the Museum must identify any entrances or exits and elevators leading into the Fossils space and explain to Wits's satisfaction how these will be secured during the Exhibition.

The Museum will provide all display cases alarms as required and will be connected to the Museum security console.

The Museum agrees to provide all fire precautions as required by law or local ordinance. Functioning fire protection systems and devices must be available in the Exhibition, staging, and storage spaces, as noted in the Perot Museum of Nature and Science General Facilities Report.

In case of security system failure, contingency plans must provide for an adequate number of security personnel inside the Fossils gallery until electronic protection has been restored.

The Museum must display Fossils in the Wits approved locked cases.

Only a person trained in handling museum objects and specimens, and working under the supervision of the Wits Registrar or designated Wits representative, may handle Objects during unpacking, installation, de-installation, and repacking, except in an emergency and after direct contact with Wits, or with written permission from the Wits Registrar.

Wits will provide all Fossil mounts, and the Museum may make no alteration to these mounts without written consent from Wits.

10. Environmental Conditions

Smoking, eating, and drinking in the space where the Exhibition is displayed, staged, and/or stored are expressly forbidden.

The Museum generally shall maintain the Object staging area(s) and Fossils space at 70 degrees Fahrenheit, plus or minus 5 degrees Fahrenheit, and relative humidity at 50%, plus or minus 10%.

The Museum must have environmental recording devices in the Fossils space and must supply Wits Registrar with reports per the instructions set forth in the Manual on a weekly basis after the Fossils have been delivered to the Museum.

Should the Museum be unable to maintain the necessary environmental conditions within the Exhibition space, desiccants may need to be provided at Museum expense.

Light levels for specifically designated Fossils must be controllable within the specified range and must be maintained according to Wits written instructions.

Fossils must not be exposed to natural or UV light, and any lights, skylights, or windows in the gallery or staging area must be covered with UV filters or shades and must be dimmable down to the aforementioned light levels.

The Museum must notify Wits if any construction is to take place in the Exhibition space or adjacent to it a minimum of six months before the Opening Date. The Museum must share the

construction schedule with Wits so that any conflicts with the Work Schedule can be identified and subsequent changes can be made to the construction schedule.

Painting in the Exhibition space must be completed two weeks prior to the installation of any Fossil to allow for off-gassing, and no construction or painting may take place in the Exhibition gallery once Fossil crates have been placed in the Exhibition space.

No part of the Fossils may be stored, crated, or moved off the Museum premises without prior authorization from Wits Registrar.

The Museum shall store all Object and Component crates and packing materials inside a secure. dry, pest-free area, protected from extremes in temperature and humidity and other damaging conditions.

11. Condition Reports

Wits will send Wits Registrar, or a similarly qualified member of Wits staff to the Museum site for installation and de-installation.

The Museum registrar or a similarly qualified member of the Museum staff must examine all Fossils as soon as they are unpacked during installation and before they are repacked during de-installation and must complete the Condition Reports with Wits representative.

Wits will send Condition Reports and Object Lists with the Fossils.