Not Finished After All These Years

Museums have many important functions, but exhibits are what most people come to see. In addition to educating and entertaining, exhibits bring visitors in the door, generating revenue that supports Museum operations. More than a century after John F. Campion spoke at the Museum’s opening exercises on July 1, 1908, his observation that “a museum of natural history is never finished” is especially true in the world of exhibits (Fig. 2.1)—and in fact needs to stay true for the Museum to remain relevant (Alton 2000). Times change, expectations change, demographics change, and opportunities change. This chapter is a selective, not-always-chronological look at some of the ways that the Museum’s exhibits have changed with the times, evolving from static displays and passive observation to immersive experiences to increased interactivity and active visitor involvement. Starting from a narrow early focus, the Museum went on to embrace the goal of “bringing the world to Denver” and, more recently, to a renewed regional emphasis and a vision of creating a community of critical thinkers who understand the lessons of the past and act as responsible stewards of the future.1
Displays and Dioramas

Construction of the Colorado Museum of Natural History, as the Museum was first called, began in 1901. Edwin Carter’s collection of Rocky Mountain birds and mammals became the nucleus for the aspiring Museum. Work progressed behind the scenes on mounting Carter’s specimens for display, and additional objects were acquired such as John Campion’s collection of crystallized gold from Breckenridge, including Tom’s Baby—the largest single piece of gold ever discovered in Colorado, still on exhibit today (Alton 2000). When the Museum opened its doors in 1908, its three floors housed displays of birds, mammals, and rocks and minerals. The top floor of the 1903 building served as an art gallery to which trustees and others gave or loaned objects of art, and Denverites referred to the Museum as the “art museum in City Park.” Denver’s “unsinkable” Molly Brown is reputed to have been bringing items for the Museum from Europe on the ill-fated 1912 voyage of the Titanic. Eventually, in 1932, the art collections were transferred to the Denver Art Museum (Fig. 2.2).

The fruits of active fieldwork and pursuit of new specimens, along with professional exhibit work including taxidermy, foregrounds construction, and background painting, soon filled the small building. By 1916 the Museum was firmly established, with an annual attendance of nearly 160,000 people, but more room was already needed. Construction of the Joseph Standley Memorial Wing, completed in 1918, gave staff three new exhibit halls, complete with electric lighting, to fill (Haglund 1990). Now new subject matter could be addressed and new kinds of exhibits installed.

Wall Frames, Glass Cubes, and Beyond

Mirroring nationwide trends based on new construction techniques, educational philosophies, and artistry, approaches to exhibiting plants and animals have changed tremendously over the years. The Walter C. Mead Ecological Hall, now called Explore Colorado, was already an exhibit gallery (the Colorado Bird Hall) in 1908. Mounted glass frames and glass-sided “cabinets of curiosities” lined the walls, filled with birds and bird eggs and illuminated by light from windows. A central opening allowed air to circulate and natural light to reach the second floor (Haglund 1990) (Fig. 2.3).

In 1936 the windows and floor opening were covered, and Mead Hall became the Museum’s first exhibit hall to have modern dioramas with compound-curved walls and ceilings, and even interior fluorescent lighting—newly patented in 1941 (Alton 2000). The theme was to be “life zones,” with dioramas sequentially representing locations and elevations around Colorado, one in neighboring Arizona (Fig. 2.4).

Museum staff went on targeted collecting trips in the late 1930s and early 1940s to fill the renovated hall, bringing home mammals, birds, casts of rocks and outcroppings, plants, and field sketches of the places that would
be re-created for visitors to see through large, tilted glass windows. The curvature of the diorama shells, skilfully constructed of plaster smoothed over expanded metal lathe, made the art of background painting vastly more complex. Out of public sight, talented artists like C. Waldo Love filled their curved plaster “canvasses” with realistic scenes that captured every detail of the sky, clouds, landforms, plants, and—crucially—the spatial perspective from a visitor’s point of view (Alton 2000) (Fig. 2.5).

Even farther behind the scenes, a tremendous amount of work went into creating the three-dimensional components of the dioramas. Skilled tanners and taxidermists tanned animal skins and stretched them over unique hand-shaped body forms, making the mounted specimens as lifelike as possible—although usually in static, trophy-animal poses (Fig. 2.6). In that day and age, taxidermy body forms contained asbestos, and specimens were treated with arsenic and DDT to ward off insects—unknowingly posing a danger to exhibit artisans as well as pests.

From 1936 through 1940 efforts to bring the country out of the Great Depression were a great boon to the Museum. Workers funded by the federal Work Projects Administration (WPA) more than doubled the staff’s size. In addition to rearranging and re-cataloging varied collections and chipping fossils out of rock, WPA workers in a backroom workshop formed and painted “accessories”—the remarkably lifelike grasses, plants, stems, leaves, and blossoms that make up diorama foregrounds—a vital role later filled by volunteers. They produced 56,031 leaves and 5,200 flowering stalks in 1937 alone; by 1940 there were three times as many (Alton 2000).
As director, Alfred M. Bailey oversaw tremendous development and expansion of the Museum from 1936 to 1969, beginning with the transformation of the Colorado Bird Hall into the Walter C. Mead Ecological Hall.

Well, it was just a gallery, you see. There was a well in the middle and around that railing was a collection of Colorado birds and the Bradbury bird eggs. We had daylight lighting, of course, and in between the windows were these little cases with exhibits.

One day, walking around the top floor here, Walter Mead [trustee] said, “I’ve never liked this hall. If you want to do something about it, I’ll help pay for it.”

When Walter … offered to help, that was the beginning of the ecological hall. We decided we wanted to show the life zones of Colorado … from the Alpine clear down to the Upper Sonoran, and the Lower Sonoran in Arizona.

Waldo Love painted every one of the backgrounds in this hall, just from the sketches he’d make in the field. Instead of blocking it in first, he’d start at the left side and paint clear around to the right!

Bob [Robert Niedrach] started as a taxidermist in 1913 and became one of the best field men in Colorado. He supervised the diorama installation and trained all those WPA workers to make the plant materials.

We had women making the accessories. And actually they made a car load. All of those leaves were made by these really wonderful people we had working for us.
CHAPTER 2 — EXHIBITS An Evolution

Painstakingly placed on wooden foreground flats, diorama foregrounds work in concert with the background painting to create the illusion of seamless perspective and to re-create the habitats of the stars of the show: the animals themselves (Fig. 2.12).

Realistic and high-quality habitat dioramas are early examples of immersive—albeit passive—museum environments, and quickly became a Museum hallmark and tradition. Many more dioramas, reputed to be some of the best in the world, were completed at the Museum over the years, including the South America Hall, completed in 1929 and redone in compound-curved diorama shells in the 1950s; the Australia Hall in 1959 and South Pacific Islands Hall in 1962–1966; the Galápagos Islands dioramas in 1968; the Alaska Hall in 1970; the North American Wildlife Hall in 1982; and the Helen K. and Arthur E. Johnson Botswana Africa Hall in 1983.

Dinosaurs and Prehistoric Mammals

Diorama halls were not the only exhibitions to be created in the Museum’s early years. By about 1915 the Museum was ready to try its hand at paleontology, and over the succeeding years many dinosaur and mammal fossils and fossil skeletons were collected and placed on exhibit. The Museum’s first fossil-hunting crew collected 800 specimens from the Florissant fossil beds in central Colorado in 1915. The same year, the remains of a *Diplodocus* were discovered near Cañon City and donated to the Museum. Over the years, more and more fossils and skeletons were acquired, including the official state fossil, *Stegosaurus*.

The family of Harold James Cook, curator of paleontology in the 1920s, owned land at Agate Springs, Nebraska, which became the source of many of the Museum’s first fossil mammal skeletons. In 1930 fossil skeletons of a dire wolf and saber-toothed cat, among others, were articulated and put on display, soon followed by many other skeletons, including some from California’s La Brea Tar Pits. In 1932 a huge Nebraska mammoth was articulated on the first floor in what would become the Fossil Mammal Hall (Markman 1961). A *Diplodocus* skeleton arrived in 1934 and 1935, bones still surrounded by their rock matrix from Dinosaur National Monument.
Vertebrate paleontology preparator Philip Reinheimer, along with other staff members and WPA workers, prepared and articulated the huge skeleton in record time (Fig. 2.13). Because fossils and skeletons were put on exhibit one at a time, it is difficult to say just when either the Fossil Mammal Hall or the Dinosaur Hall “opened,” but by 1938 the Museum’s signature Diplodocus was on prominent display, and in 1939 the Stegosaurus skeleton joined other North American dinosaurs. The Fossil Mammal Hall was available to the public around 1947. Artist Mary Chilton Gray painted a series of well-known murals above the exhibit cases, fleshing out the fossil skeletons, placing them in landscapes, and putting the finishing touches on both the Dinosaur and Fossil Mammal Halls (Fig. 2.14). With some relocations, changes, and additions, both halls remained essentially the same for some 50 years.

Between the opening of Prehistoric Journey in 1995 and the beginning of Space Odyssey’s installation around 2001, the first-floor area previously devoted to dinosaurs became a “Curator’s Choice” hall, with wall cases devoted to individual curators and their research, to highlight the science behind the scenes and put a human face on the Museum’s science. The Fossil Mammal Hall and part of the old Dinosaur Hall were subsequently converted to collections storage, but likely will again become public exhibition space as the Museum proceeds with upcoming initiatives.

More Room for Exhibits

From 1917 through today, the need for more room has been a recurring refrain in the Museum’s history. Complementing the Standley wing, the William H. James Memorial Wing opened to the south of the core building in 1929. In 1940 Phipps Auditorium opened. In 1947 Denver voters approved a $350,000 bond issue for construction of another addition, this one to the west. When dedicated in 1953, it provided a new entrance, a scenic lounge, and lots more exhibit space—including a temporary exhibits room. Two wings completed in 1968 provided even more room for growth. Spurred by a $1 million gift, the southwest Boettcher Foundation Wing created space for the Charles C. Gates Planetarium and planned halls of North American and African wildlife. The northwest wing paved the way for what are now Ricketson
Auditorium, offices, collection areas, and exhibits such as the Mary W. A. and Francis V. Crane American Indian Hall, now known as North American Indian Cultures. This remained the configuration of the Museum until another major expansion, in 1987 (Alton 2000).

**Breaking the Million Mark**

Starting in 1972 visitors could purchase Museum memberships. As financial support from the City of Denver dwindled in the early 1980s, memberships became increasingly important to the Museum’s financial health, and the eventual reduction of government funding forced Museum administrators to begin charging admission in 1982 (Haglund 1990). Since both general attendance and memberships are driven by the attractions the Museum has to offer, it is not surprising that the 1980s saw a steep rise in the number and importance of temporary exhibitions. As of this writing, the Museum has reached an all-time high of more than 64,000 member households.⁵

Some were traveling exhibitions, such as 1983’s *The Unknown Ansel Adams* and 1984’s *Folk Toys of Japan*, which occupied the Assistance League Gallery in what is now the Naturalist’s Nook classroom on the third floor. Others included a Hopi Snake Dance exhibit and *Colorado Archaeology: Riddles from the Past*, which were created in house in 1984. With space at a premium, some, such as 1984’s *Chaco Phenomenon*, 1985’s *Ebla to Damascus*, 1986’s *Cenote of Sacrifice*, and 1987’s *After Man* and *In Search of the Mary Rose*, were installed within existing diorama halls and permanent galleries (Fig. 2.15). Increased and varied temporary exhibition offerings paid off, with paid Museum attendance exceeding 1 million
in 1982—the first time since 1946 that the Museum saw that many visitors—and again in 1984, rarely to fall below the mark.

Not surprisingly, starting around 1983 the major—though far from only—focus of Exhibits Department staff shifted from permanent to temporary exhibitions. Since its opening in 1986, there have been more than 40 Museum-enhanced exhibitions in the Allan R. Phipps Changing Exhibits Gallery. Between 1980 and 1997, more than 50 other in-house and traveling exhibitions occupied smaller galleries around the building, such as the Assistance League Gallery—both when it was on the first floor and in its initial third-floor location—and the third-floor Johnson Gallery (which later became the third—and last—location for the Assistance League Gallery and eventually home to the permanent *Egyptian Mummies* exhibition). When the IMAX Theater was installed, a number of complementary tie-in exhibitions were created in house for the IMAX lobby, such as *To Fly*, *Grand Canyon*, and *Speed*. Countless more small in-house temporary exhibits have been in other locations, such as the former Lifeways Gallery in the center of *North American Indian Cultures*, the interior of Botswana Africa Hall, and portions of the former Hall of Ancient Peoples and Perspectives Gallery in the former west entrance lobby, both now part of *Space Odyssey*. Almost all of these smaller temporary venues were lost to more permanent uses over the years, but the Leprino Family Atrium on the west side is now a venue for twice-yearly two-dimensional art exhibitions that highlight the relationship between art and science.

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Figure 2.16. Botswana Africa Hall’s 2,700-square-foot Savuti Crossroads diorama, the Museum’s largest.
The Last Wildlife Hall Dioramas

The opening of the Helen K. and Arthur E. Johnson Botswana Africa Hall in 1981 represented the completion of an exhibit commitment made in 1966. The Savuti Crossroads diorama, the last to be completed in the hall and the Museum's largest, contains 22 mounted mammal specimens including baboons, greater kudu, sable antelope, steenboks, warthogs, and zebras in a savanna grassland environment (Fig. 2.16).

The Boettcher North American Wildlife Hall opened to the public in 1982, with completion of exhibit cases and interpretive panels complementing the hall's recently finished dioramas. Exhibits staff who worked here at the time of its planning and completion think of it as the first Museum wildlife hall to be conceived of three-dimensionally as an interpretive exhibition and more complete visitor experience.

In 1983 an all-new pronghorn diorama was completed in the Colorado Mammal Hall, and a new white-tailed deer diorama—the Museum's first to show signs of human presence, in the form of a cultivated cornfield—was finished in 1984. Though these were the last wildlife dioramas to be produced at the Museum, future efforts refurbished foregrounds and replaced specimens. And the diorama sensibility was far from gone, with dioramas reconstructing past life still to come in Prehistoric Journey, and even of future life in Space Odyssey.

The Blockbuster Revolution

In 1982 Denver voters passed a $20 million bond issue to modernize the Museum's aging facilities and expand the building eastward. The original 1903 building was demolished in 1985 to make room for 50-foot-high atria that would connect two new wings to Phipps Auditorium and the rest of the Museum. Completed in 1987, the project moved the main entrance to the north side for the first time and added an attractive new retail shop as well as the popular T-Rex Cafe (Haglund 1990). The new wings also provided room for a new exhibition about the history of life on Earth, Prehistoric Journey, and classroom and exhibit space for the Hall of Life, which merged with the Museum in 1987. A major driving force for the expansion was the creation of a large gallery capable of housing major temporary exhibitions—so-called blockbusters, for their ability to draw crowds willing to circle the block for the chance to attend once-in-a-lifetime experiences.
Record-Breaking Attendance

The nationwide blockbuster phenomenon came to Denver in a big way with the Museum’s hosting of *Ramses II: The Great Pharaoh and His Time* (Fig. 2.17). This powerful pharaoh ruled Egypt for 67 years, from 1279 to 1213 BC, and was responsible for many of the monumental temples and palaces associated with ancient Egypt. The exhibition presented a priceless collection of 71 artifacts loaned from the Egyptian Antiquities Organization, including a 57-ton colossal statue of Ramses. Nearly 1 million people visited the exhibition during its five-and-a-half-month stay at the Museum, from October 1987 to March 1988; the downside of such dramatic attendance is the “shadow effect,” which adversely affected Museum attendance for many months after *Ramses II* closed its doors.

Planning for *Ramses II* began in 1985. The 30,000-square-foot exhibition was the first to open in the newly constructed addition, occupying the Allan R. Phipps Gallery, the Morrison Atrium, and the first-floor southeast wing. To enhance and give context to the experience, Museum staff designed and produced an ancient Egyptian environment complete with magnificent pillars, models of palaces, and replicas of tomb art from Ramses II’s time. A visitor favorite was the lily pond, with water lilies and papyrus growing in the water, surrounding a statue of Horus and Ramses as a child. Interpretation included a mini-theater video presentation, maps of Egypt, a timeline showing when Ramses lived and ruled Egypt, and an audio tour narrated by Charlton Heston.

The colossus of Ramses, which welcomed Museum visitors in a monumental way, was brought to Denver in three massive pieces—each on its own custom-appointed truck—from Memphis, Tennessee. A special reinforced platform and new service door were created to handle its size and weight (Fig. 2.18). Specialized rigging equipment was required to reassemble the pieces, and it took five days to install and seam the colossal statue.8

Museum staff also created an Egyptian bazaar in the northeast atrium, evoking the wares, sights, and sounds of the Middle East, to complement the exhibition. Artisans and craftsmen from Egypt demonstrated their skills, some little changed from Ramses’s day. Visitors could observe a potter at work, copperware being decorated, rugs being handwoven, gold jewelry being custom-made, and the intricate techniques of inlaying mother-of-pearl into wooden objects. Demonstrations of papyrus-making fascinated the crowds—and of course many items were available for purchase (Fig. 2.19).

The Museum’s volunteer program reached new heights with *Ramses II*. More than 1,300 volunteers—178 each and every day—did everything from talking with visitors within the exhibition, helping to sell wares in the bazaar, guiding tours, and checking coats.9 In fact, to this day we could not do what we do without the many volunteers who facilitate visitor experiences in galleries and exhibitions throughout the building, and the Museum’s
A phenomenally successful volunteer program is regarded as a national and even international model.

Reflecting the popularity and importance of this Museum and other scientific and cultural organizations in the region, in 1988 voters in the metro area approved the farsighted creation of the Scientific and Cultural Facilities District (SCFD), a 0.1 percent sales tax to help support beloved institutions that is still in effect today—to the envy of museums in many other metropolitan areas.

**Major In-House Effort**

The Museum’s next major blockbuster, the 40,000-square-foot *Aztec: The World of Moctezuma*—developed completely in house and the most comprehensive exhibition of its kind ever presented outside Mexico—opened in September 1992. By the time it closed in February 1993, more than 700,000 people had visited the exhibition—and it won the 1993 American Association of Museums (AAM) Curators’ Committee Exhibit Competition. This unique exhibition was the result of a long-term collaboration between the Museum, the University of Colorado Boulder, Mexico’s National Museum of Anthropology, and the Templo Mayor Museum of Mexico City. The concept originated in 1983 during a series of discussions among Jane S. Day, David Carrasco, and Eduardo Matos Moctezuma. As part of the exchange, the Museum assembled an exhibition called *The Navajos: Indians of the Southwestern United States*, which was presented at the Templo Mayor Museum in Mexico City in 1991.

![Figure 2.20. Aztec: The World of Moctezuma featured colorful reconstructions and Mesoamerican artifacts.](image)
Whatever It Takes

The internal structuring of institutions is always in flux, flexing to meet the needs and the times, and the Museum is no exception. In its early days, nearly everyone was involved in the business of creating exhibits, and in fact, in creating an entire museum from the ground up. "Preparateurs" and "field men" abounded, working to dig, chisel, clean, articulate, and display fossils and fossil skeletons; to find, identify, sort, and arrange rocks and minerals; and to collect, skin, tan, mount, and pose animals—everything it took to prepare the Museum's exhibits. The Museum's directors and curators oversaw exhibit content, and curators wrote the labels.

Taxidermy and sculpture were a huge part of the exhibits business for many years as new dioramas were created and new wildlife halls opened. Al Rogers, Jack Putnam, Kent Ullberg, and Henry (Wichers) Inchumuk were among the talented cast of characters, each an artist in his own right. In the 1930s and long beyond, several departments had their own exhibit preparators and technicians. The roster was joined by the Accessories Department, where artificial foliage was produced for the Museum's dioramas and displays (Fig. 2.21).

The world of exhibit preparation and production changed under the leadership of Arminta "Skip" Neal, at a time when the museum world was beginning to think about exhibits in more modern, visitor-centered ways. In a farsighted move that resulted in high quality—and most important, consistency—she brought the Museum's exhibit experts together into a multitalented, professional department. This legacy was carried forward by a protégé, Alan Espenlaub, who started as an exhibit preparator and later served as exhibits director from the late 1970s until 1992.

The Espenlaub years saw a tremendous amount of change. By 1984, with no new dioramas being built, tanning, taxidermy, and foregrounds were no longer needed. Reshuffling and layoffs ensued. The Exhibits Department consisted of six preparators, several graphic designers, a photographer, and a videographer—a small staff that accomplished a great deal of work in a creative environment that was much more insulated than it soon became. With the shift in emphasis from permanent to temporary exhibitions came a shift from all preparators doing aspects of everything—from developing, designing, and writing to building, wiring, and installing to cleaning and maintenance—toward specialization. Existing staff found themselves gravitating toward their strengths, such as exhibit design, content development and writing/editing, project coordination, maintenance and upkeep, and so on.

Also during these years, the department strengthened a commitment to cross-departmental teamwork, for which the Museum is well known in the museum field—particularly in terms of exhibition content development. A far cry from the days when curators wrote all the labels and even from the 1980s, when curators still drafted labels then edited by exhibit staff, exhibition content in the 1990s was developed much more collaboratively. Mirroring nationwide trends pioneered by the Field Museum in Chicago and embracing the relatively new field of visitor studies and evaluation, the exhibition professions of visitor-centered content...
development and interpretive writing were born. In 1994 the Exhibits Department and \textit{Prehistoric Journey} project team created a process document, "Triad-Based Interpretive Content Development of Medium-to-Large In-House Exhibitions," laying out roles, responsibilities, and authority for project team representatives of the three major players, the Exhibits, Research and Collections, and Visitor Programs Departments. With some procedural and nomenclature changes, the addition of Technology Department representation, and increased project management oversight—along with a gated approval process by senior leadership and trustees—this tried-and-true model has become part of how we operate and a source of great success for the Museum.

For a brief period, the Museum’s exhibits team also developed, designed, and fabricated exhibitions for Rocky Mountain National Park, Kawuneeche Visitor Center, and Moraine Park Museum (Fig. 2.22). As the Museum took on more and larger temporary exhibition challenges, the department grew, reaching a staff of around 40 in the early 1990s. Aside from the "shadow effect" that followed \textit{Ramses II}, times were good. New specialties, such as technology and visitor studies and evaluation, were added. The foregrounds and sculpture groups—though not taxidermy—were rebuilt, and both permanent and temporary staff were hired to take on the tasks of creating \textit{Prehistoric Journey}. At its height, the department encompassed some 60 people, not counting subcontractors. Then, at the end of 1995, the axe began to fall.

Again mirroring nationwide museum trends, including the outsourcing of major projects, staffing levels were reduced over time to current levels, where they have remained for a decade or more—but the commitment to teamwork remains the same. Currently, the department consists of 18 full time equivalents (19 individuals): a three-quarter-time director, Jodi Schoemer; an office manager, Kate Richter; three project managers, Lisa Decker, Jamie Klein, and Bryce Snellgrove; two three-quarter-time and one full-time exhibit developer/writers, Nancy Knepper, Laurel Navo, and Frances Kruger; two exhibit designers, David Pachuta and Chad Swiercinsky; one full-time and one three-quarter-time graphic designers, Salle Tulchin and Lisa McGuire; two graphic design and production assistants, Tyrone Beall and Lauren Yandik; one graphic production artist/shops manager, Rob Jurado; one gallery installation coordinator, Victor Muñoz; one fabricator/installer, Todd Norlin; one fabricator/production shop manager, Kevin Johnson; and one exhibit and lighting maintenance coordinator, Jack Leyba (Fig. 2.23). Technical exhibit maintenance, videography and digital media development, photography, print graphics, and visitor studies and evaluation, all specialties that once resided in Exhibits, are currently in other departments.
The Aztec exhibition interpreted the people, their culture, and their empire as it existed in the early 16th century under Moctezuma II, the last great Aztec ruler (Fig. 2.20). The theme of the exhibition was a walk through the great capital of Tenochtitlan at a moment in time just before the arrival of Hernán Cortés and his Spanish conquistadores in 1519. Through the display of artifacts loaned by Mexican museums and illustrated text panels, original murals, models, and dioramas; videos; and an audio tour created by Museum staff, the achievements and accomplishments of the Aztec people came to life for Museum visitors. Visitors journeyed through the floating agricultural islands—called chinampas—at the city’s outskirts, through the city streets to the great marketplace at Tlatelolco, and eventually to the sacred precinct and the Templo Mayor—the physical, political, and spiritual heart of the Aztec empire. This highly immersive experience even went beyond Ramses II to set a new standard for temporary exhibitions at the Museum, continuing to influence many later exhibitions and exhibit enhancements such as the Viking Village (Fig. 2.24), a village-themed family activity area produced in house in 2001 to accompany Vikings: The North Atlantic Saga, and even the 2011–2012 Exhibits Department collaboration with the Science Museum of Minnesota to develop and produce a traveling exhibition about the Maya.

Allure of the East
For its next blockbuster the Museum turned its sights to the Far East, hosting The Imperial Tombs of China from November 1996 through March 1997 (Fig. 2.25). This exhibition introduced the Museum’s audiences to the splendors of Chinese dynasties. Four of the 8,000 ancient clay soldiers and two horses from the “silent army” guarding Qinshihuang—the first Chinese emperor—came to the Museum, along with a 2,000-piece jade burial suit, sewn together by two pounds of gold thread, and a wealth of other artifacts (Friedland 1996).
Keeping up with the Times

One way to think of the evolution of exhibits is to look at permanent Museum exhibits through the lens of visitor activity level: passive, interactive, personal, interpersonal, and personally active. For many years, exhibits at the Museum and elsewhere were pretty much passive affairs, requiring lots of looking and reading. They appealed mostly to experts, people who were already interested in the subject matter, or those who had guests in from out of town. The Museum’s first attempt at hands-on interactivity in the mid-1980s, which is—somewhat embarrassingly—still on exhibit as of this writing, was the Mammals, Monotremes, and Marsupials exhibit adjacent to Australia Hall. Push buttons reveal backlit transparencies, and visitors are asked to match answers to questions (Fig. 2.26).

1991: Explore Colorado, with discovery boxes associated with each diorama, a menu-driven video kiosk, touchable bronze sculptures, and a push button interactive map in the center of the hall, represents another step toward interactivity (Fig. 2.27).

1994: Edge of the Wild’s on-demand animal sounds, touch specimens, hands-on opportunities, interactive video activities, and talk-back board make for a very interactive experience—with a touch of the personal (Fig. 2.28).

2003: Space Odyssey’s visitor-choice, almost science-center environment is highly interactive—both mechanical and digital—and the Museum Galaxy Guides and staff make it an interpersonal experience (Fig. 2.29).

2009: Expedition Health takes all these attributes and goes them one better, with a large number of digital interactives and an emphasis on both personalization and personally, physically active experiences. This continuing evolution, driven largely by audience awareness and technology—staying just ahead of what people have at home—is a pretty interesting place for a museum to be (Fig. 2.30).
Early Chinese emperors spent much of their lives getting ready for their deaths. Artifacts in the exhibition represented nearly 2,400 years of Chinese culture and objects from seven dynasties, from the warring states of 75 BC through the Han and Ming dynasties and the Qing dynasty, which ended in 1911. Galleries throughout the exhibition were designed to replicate the layout of tomb complexes, putting objects in context and immersing visitors in the atmosphere and environment of imperial tombs—complete with a reconstruction of the throne room of the last emperor at Shenyang Palace. Totaling nearly 30,000 square feet, *Imperial Tombs* occupied not just the Phipps Gallery but also the entire second-floor space below.¹¹

In addition to the splendid artifacts, one of the most appreciated aspects of the Museum’s presentation of this exhibition was the sense of context imparted by the elegant, spacious design and the fact that it was, like *Ramses II*, a rich experience replete with food, film, merchandise, and ambience. In fact, the Museum did so well—attracting more than 700,000 visitors—that the next venue, the Orlando Museum of Art, purchased many Museum-developed props, videos, and graphic panels. This is a phenomenon that continues to this day, largely because the Museum has maintained the tradition of enhancing each temporary exhibition with everything from props and immersive elements to improved graphics and interpretation to facilitated cart activities to specimens and artifacts from our own collections and beyond.

### The *BODY WORLDS* Phenomenon

In 2006 the nationwide human-bodies exhibit craze came to Phipps Gallery with *BODY WORLDS 2: The Anatomical Exhibition of Real Human Bodies*, showcased at the Museum from March through July 2006 (Fig. 2.31). *BODY WORLDS 2* represented a type of blockbuster for the Museum unseen since *Ramses II, Aztec, and The Imperial Tombs of China*. *BODY WORLDS 2*, the brainchild of Gunther von Hagens, was organized by the Institute for Plastination of Heidelberg, Germany.

The overall goal of *BODY WORLDS 2* and its associated programs was health education, and it resonated well with the health-conscious Rocky Mountain region. The exhibition included 28 whole-body plastinates—donated bodies preserved through a patented plastination process and dissected to highlight specific systems or aspects of the human body. Additionally, approximately 200 individual organs and backlit body slices were displayed in 40 cases. An audio guide, made available through the Institute for Plastination, was available in both Spanish and English to provide deeper insight about the specimens.

The popular camel and calf whole-body plastinates were featured on the second floor bridge, just outside the IMAX Theater lobby. An 800-square-foot gift shop was located at the end of the exhibition, selling primarily *BODY
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WORLD 2 merchandise. Nearly 700,000 people saw the exhibition during its four-month stay.12

Capitalizing on the success of the first BODY WORLDS exhibition, the Museum hosted another: von Hagens’s BODY WORLDS and the Story of the Heart. The exhibition featured more than 200 authentic specimens, including entire bodies and individual organs, focused on the first functioning organ to develop after conception—the heart—which nourishes, regulates, and sustains our bodies throughout our lives. Like BODY WORLDS 2, the exhibition was an unforgettable anatomy lesson that allowed visitors to see and understand physiology and health, and gain new appreciation and respect for what it means to be human. Though not as well attended as the first, more than 300,000 people experienced the exhibition from March through July 2010.

Figure 2.31. BODY WORLDS exhibitions brought human biology and plastinates to the Museum.
Major Changes, Honored Traditions

Over the years, many new permanent exhibitions have been added to the Museum’s varied menu of choices, and even more have been renovated, relocated, or even replaced. With each new project, Museum staff looks for ways to blend respect for tradition and understanding of visitor needs with the latest exhibition techniques and educational philosophies. Dioramas have been the Museum’s mainstay for many decades, but today’s exhibitions incorporate elements unimagined not all that long ago. Exhibits staff team up with curators, educators, and others to create memorable, educational, and meaningful experiences for visitors.

Arminta “Skip” Neal, a Leader in Exhibitions

Arminta “Skip” Neal (1921–2003) helped pave the way for women in traditionally male fields, creating innovative exhibitions at the Museum and fostering the careers of museum professionals around the country and the world (Fig. 2.32).

In 1943 Neal received a fine arts degree from UCLA and went on to serve two years in the Women’s Army Corps during World War II. She then went to work at the Denver Art Museum as a scientific illustrator for Eric Douglas, curator of Native American art, in 1947. Douglas greatly influenced Neal’s later work in exhibit design.

In 1950 Neal began working at the then-Denver Museum of Natural History in the Archaeology Department, under the renowned H. Marie Wormington. Neal’s talents were quickly recognized, and she became the curator of graphic design. By 1976 she was promoted to assistant director, heading up exhibitions work at the Museum.

Neal is best known for pioneering, innovative interpretive exhibit design. She authored several award-winning “how-to” books: Cigar Box Dioramas (1961), Help for the Small Museum: Handbook of Exhibit Ideas and Methods (1973), and Exhibits for the Small Museum: A Handbook (1996). She also co-authored, with Wormington, The Story of Pueblo Pottery (1974). During her tenure at the Museum, Neal designed and oversaw installation of Crane Hall, among other noteworthy exhibitions, and also managed to instruct museum exhibit methods courses as a Fulbright professor in Lima, Peru, and in Nigeria for UNESCO, as well as here in the United States. Neal’s proudest accomplishment was her instrumental role in the establishment of the Museum’s Native American Advisory Council, one of the country’s first.
Two Cranes to Build One Hall

The exhibition now known as *North American Indian Cultures*, on the second level of the Museum, owes its existence largely to Mary and Francis Crane. From 1951 to 1968, the Cranes collected some 12,000 Native American artifacts, purchased from other collectors, Native artists, trading posts, dealers, and galleries. They displayed their treasures in their Southeast Museum of the North American Indian in Marathon, Florida, in the Florida Keys. When the Cranes decided to find a new home for their collection in 1968, they chose Denver.

Thanks to the Cranes’ generosity, the Museum went overnight from owning a small collection of North American ethnographic materials to curating the largest such collection between Chicago and Los Angeles. Crane Hall opened in phases from 1974 through 1978, with Arminta “Skip” Neal designing and guiding the process (Alton 2000). Since then, especially between 1992 and 2012, staff have added new interpretive panels, rotated objects on and off display to ensure their long-term preservation, re-created a Navajo hogan and weaving platform, and reinterpreted objects and cultures with more cultural sensitivity and awareness. Like the cultures it depicts, the hall constantly evolves while remaining true to its heritage (Fig. 2.33).

In addition to several splendid miniature dioramas—artifacts in their own right—that depict Native American life in the past, the hall boasts the only two life-size dioramas in the Museum currently featuring Native people and cultural materials. In one, a visitor arrives in the early 1860s at a Cheyenne encampment just 20 miles east of the Museum, along Coal Creek (Fig. 2.34). As visitors wander throughout the hall, they are immersed in environments that show how Native people in places as diverse as Arctic coastlines, southwestern deserts, and eastern woodlands gathered, cultivated, and hunted food and built homes using the resources...
of their environments. Unfortunately, construction of the Leprino Family Atrium in 2003 made North American Indian Cultures more difficult for visitors to find. A future Museum initiative calls for developing an entirely new exhibition, internally referred to as Human Journey or The Human Experience.

Although much of the current exhibition focuses on the past, woven throughout are ways in which modern Native Americans keep their cultures strong and continue to observe their people’s traditions. Various tribes, part of the Museum’s Native American Resource Group, helped develop the hall and ensure Native perspectives were included. This dialogue renews and sustains the relationship between the Museum and Native peoples.

Marvelous Gems and Minerals
The Museum’s original mineral hall typified the earliest styles of museum exhibitry: flat-topped wooden display cases and labels with tiny type on cream-colored card stock, an old-style crystal cavern display, a drill core specimen in a long case, a fluorescent minerals area, and a few meteorites for good measure. A complete renovation of the hall into the Coors Mineral Hall, carried out from 1978 to 1982, was both a labor of love and created one of the Museum’s first “modern” exhibitions. One of many noteworthy aspects of the hall is its breathtaking optical-illusion-at-its-finest crystal cave display (achieved with skillfully placed mirrors) (Fig. 2.35).

Periodic additions over the years continued to improve the hall and add immersive elements. The Colorado Mining section at the back of the exhibition’s winding hallways, completed in 1985, takes visitors through mine-themed environments and exhibits (Fig. 2.36). The exquisite gems section adds glittering appeal. Alma King, the magnificent rhodochrosite specimen from the Sweet Home Mine, added in 1997, is displayed within a dramatic cave-like area reached through a simulated mine shaft. Diane’s Pocket, a spectacular “vug” of aquamarine crystals, was installed in 2006, bringing the hall to a new level of excellence.

New Life for an Old Hall
Now as in the past, it takes nearly an army of people to create an exhibition. Thanks to the efforts of these dedicated people, many temporary and permanent Museum exhibitions have been awarded national honors, continuing the Museum’s long-standing tradition of producing high-quality exhibitions. Extensive renovations transformed the Mead Ecological Hall into Explore Colorado in 1991, an effort that won the American Association of Museums Curators’ Committee Exhibit Competition in 1992. The two-year project was funded by the Denver Metropolitan Area’s SCFD 0.1 percent sales tax. It set new standards for Museum-wide teamwork, diorama refurbishment methodology and techniques, state-of-the-art exhibitry and educational.
effectiveness, and the delicate business of tampering with a venerable, aging exhibit hall. Period architectural detailing, such as the beautiful cove ceiling, was restored, and the dioramas themselves were painstakingly cleaned and refurbished (Fig. 2.37). One severely damaged diorama—the great blue heron group—was almost completely replaced.

Around this time the Museum was becoming more and more aware of the importance of visitor expectations, comfort, and needs. A sterile, cavernous exhibit hall was transformed into a spacious yet intimate one, incorporating structures for exhibit interpretation and providing visitors with seating, interactive experiences, and other amenities while maintaining a historic flavor and reference to a glorious past (Alton 2000) (Fig. 2.38). Also in recognition of the importance of clarity for visitors, the exhibit team—immortalized in composite as the fictitious naturalist-artist-explorer C. Moore—developed a set of specific educational objectives.

The interpretive challenge was to interpret the existing dioramas—and Colorado’s ecosystems—in such a way as to draw attention to environmental interactions as well as individual species, to interest visitors in absorbing further information, to underscore general ecological themes, and to help visitors experience the entire exhibition in more meaningful ways, thereby better understanding Colorado. Curators conducted original research on Colorado’s ecosystems, transforming the old “life zones” concept into a more fluid understanding of environment-species dynamics.14

Building on Success

Edge of the Wild, an exhibition that resulted from refurbishing the Charles Boettcher Colorado Mammal Hall, was the second major diorama hall renovation project undertaken with SCFD funding. Project staff took what
they learned from *Explore Colorado* a step further, focusing not just on interpretation but on increased interactivity and accessibility—resulting in a 1996 American Association of Museums accessibility award. Extremely innovative in its day, the exhibition includes custom-designed disabled-access seating and such visitor-involvement opportunities as a talk-back board asking visitors to record their own wildlife encounters and experiences, an animal tracking video game, touchable objects, and numerous other opportunities for direct visitor engagement (Fig. 2.39).

Taking its cue from the cornfield in the white-tailed deer diorama, *Edge of the Wild* asks visitors, “Whose backyard is it, anyway?” The principal theme of the exhibition—embodied in the hall’s original dioramas—is how Colorado’s large mammals survive in an environment that is increasingly altered by human activity. Several zoological specimens were replaced in the process, substituting a new bison and mountain lion in more active and dramatic poses for...
animals that had previously been on display, but now needed to be better safeguarded for posterity (Fig. 2.40).

**How Dare You Move the Dinosaurs!**

Another major new permanent exhibition opened its doors to the public in 1995. Tackling evolution head-on, *Prehistoric Journey*—affectionately known as “PJ”—involved sacrilege from the beginning: gutting the first-floor Dinosaur and Fossil Mammal Halls and relocating specimens to a new location on the third floor of the relatively new northeast wing of the building. Protests of people seeking nostalgic childhood experiences to the contrary, *Prehistoric Journey*, too, won the American Association of Museums Curators’ Committee Exhibit Competition, in 1996. This exhibition is widely viewed as the last major permanent exhibition that the Museum will ever undertake entirely using in-house staff, largely because of the expense of employing the large number of people needed for such efforts.

To the great benefit of the visitor experience, the Museum hired its first in-house museum evaluator at the outset of the *Prehistoric Journey* project to work with the cross-departmental in-house team. Explicit goals and objectives were determined early in the process. Visitor studies and museum evaluation, then a new and growing field, was beginning to reveal a gold mine of information about what people know and don’t know, are or are not interested in, and how best to reach them and give them the kinds of
experiences they expect and will remember for a lifetime. One example of the value of testing and evaluation is the evidence cases next to each diorama or “envirorama”—the Museum-coined term for an open, walk-through diorama—along Prehistoric Journey’s trail through time (Fig. 2.41). Designed to answer the question on the tip of every visitor’s tongue, “Yes, but how do you know?” and to re-create the experience a visitor might have listening to an expert paleontologist answering that question, it took many mock-ups, fine-tuned iterations, and conversations with visitors to arrive at the successful formula: “There was once an [underwater reef, tropical forest, and so on] where this [limestone quarry, dry Wyoming hillside, etc.]
is today.” Like the red circles drawn on-screen by sports commentators during a football game, hand-drawn notations point the way, and straightforward 1–2–3 lists, in simple language, explain how we know (Fig. 2.42).

Since the subject of Prehistoric Journey is nothing less than the history of life on Earth, even with carefully honing the content it became clear that more room was needed in the 10,000-square-foot space in order to tell the story. Careful sculpting of the space took advantage of every square inch, rather like building a trim yacht, and a mezzanine was added to accommodate two of the seven major sections of the exhibition, in the process allowing visitors to symbolically simulate the rise of life from the seas, complete with lighting and other experiential cues, as they ascend. Other visitor-centered innovations include content targeted to three levels of interest: discovery, exploration, and study. Discovery elements, usually on sloping panels in front of exhibit cases, are identified by a large magnifying glass symbol. They are almost always interactive or touchable, written at a fourth-grade reading level, and deal with fundamental and fascinating topics. With permission from National Geographic, study elements are always presented in a “book” format reminiscent of the instantly recognizable magazine. They deal with select topics, such as radiometric dating or the famous Miller-Urey experiment, in greater depth—and at a 12th-grade reading level. Everything else is presented on the exploration level, with an integrated mix of color illustrations, text, specimens, and interpretive media.15

Although Prehistoric Journey is standing the test of time, a cross-departmental core team ensures that time does not stand still. In addition to adding a touchscreen interactive on human evolution, a dramatic new entrance, and several other upgrades from 2008 through 2011, Museum staff recently installed a new exhibit of the famous Folsom and Dent projectile points, excavated by Museum scientists, in Prehistoric Journey—another example of paying homage to the Museum’s distinguished scientific tradition (Fig. 2.44).

Room for Improvement

Until 1997 two Egyptian mummies—one in a closed coffin—were housed in a small, isolated, hard-to-find gallery on the Museum’s third floor. A single case of artifacts was interpreted only with identification labels. Three “books-on-a-wall” panels presented scholarly explanations of
mummification practices. Not only was the gallery difficult to find for many visitors, visitor tracking studies and exit interviews showed that visitors did not understand the exhibition—and this at a time when visitor enthusiasm for and interest in both Egypt and mummification were running high (as they still do today). To solve the location challenge, and in part because of the great success of Ramses II, a new Egyptian Mummies hall opened in the spring of 1998 on the first floor, incorporating exhibit elements the Museum had created for the blockbuster. The project team set out to develop a compelling exhibition about how and why the ancient Egyptians mummi-fied their dead. The theme would be the science of how archaeologists learn about ancient artifacts—especially when the artifacts cannot be examined by hand because of potential damage and deterioration (Fig. 2.45).

Collaboration, both internal and external, distinguished this American Association of Museums award-winning effort. The team pursued the loan of a few additional carefully selected, attention-grabbing artifacts. The two mummies that had been on display since 1985 belong to the City of Pueblo, Colorado. Their official caretakers, Pueblo’s Rosemount Museum, sent them to Denver so more people could see them; continuation of this relationship provided the centerpiece objects for the new exhibition. The Egyptian Study Society, a group associated with the Department of Anthropology, contributed both financial assistance and a unique object: an inspired reproduction of one of the coffins. Visitors can now see what the original 3,000-year-old coffin once looked like, and learn about the Egyptian Study Society members’ venture into archaeological reconstruction. Collaboration with the University of Colorado Health Sciences Center (UCHSC) and University Hospital provided the most innovative components of the exhibition: X-rays and computed tomography, better known as CT or CAT scans, of the mummies. The Center for Human Simulation at UCHSC
transformed data into both two-dimensional and three-dimensional images, including the skin and funerary objects hidden inside the wrappings of the “rich woman’s mummy.” Video and other accessible interpretation tell visitors these interesting science stories. Customer satisfaction research showed that visitors rated the new experience much higher, a big leap from once being the lowest-rated exhibition in the Museum.¹⁶

To make way for the next major permanent exhibition, *Space Odyssey*, Egyptian Mummies was relocated to what was once the Assistance League Temporary Exhibit Gallery on the Museum’s third floor, where it continues to be a big attraction for visitors.

A more recent example of improving the visitor experience in the permanent halls is the interpretive renovation in 2010 of the North American Wildlife Hall, an effort that included new interpretive information and graphics, seating, videos and sound effects, and updating of interpretive cases. The hall’s west entrance had already been redone in 2003 when the Leprino Family Atrium opened, focusing on the theme of change and including a modern yet classical synoptic collection of large and small animals (Fig. 2.46).

**Dynamic Platform for Visitor Experiences**

Around the time of the Museum’s name change from the Denver Museum of Natural History to the Denver Museum of Nature & Science in 2000, and marked by a process that was fraught with internal strife but eventually yielded one of the Museum’s most popular exhibitions, *Space Odyssey* opened on the first floor of the Museum in 2003. A core team at the Museum worked with Delphi Productions of Alameda, California, to create the exhibition infrastructure; all programming and future enhancements were and are done in house. Adding an entirely new kind of visitor experience to the Museum’s repertoire, *Space Odyssey* was designed to give Museum visitors an all-new, hands- and minds-on way to explore space science, integrating exhibits and programs into a dynamic educational experience. Digital media, live performances, and a fully integrated information network highlight current space news and information, and ensure that each visit is new and different (Fig. 2.47).
Just as science centers were beginning to provide context for their visitors, natural history museums were looking to tap into the excitement of inquiry-based discovery learning. With a legacy of world-class dioramas and award-winning traditional exhibits, the Museum turned its sights in that direction. *Space Odyssey* was envisioned from the start as a seamless integration of immersive environments, hands-on interactives, live programming, and digital information working together to deliver timely, relevant, customized space science information. *Space Odyssey* is literally a “stage for the performance of space science education,” with an unusually flexible infrastructure, constantly updated information, permanent and portable interactive exhibits, and a dynamic human presence.

Bringing this complex idea to fruition required creativity and vision to plan and construct a robust digital infrastructure, compelling physical environments, a core complement of fixed and portable interactive exhibits, an opening suite of some 30 programs and demonstrations, and flexible performance stages and multiuse spaces. For example, instead of restricting performances to a single stage, *Space Odyssey* has many “virtual stages” that easily transform into performance spaces. And since extreme practicality is necessary in order to make challenging choreography appear effortless, the exhibition also required the creation of reliable behind-the-scenes processes, schedules, and techniques for staffing *Space Odyssey*, for developing new props and programs, for delivering live performances, and for living up to the promise of rapid updateability and current content. These efforts paid off, winning the Museum the 2004 Association of Science-Technology Centers Leading Edge Award for Visitor Experience, the coveted “Edgie.”

*Space Odyssey* is operationally complex and labor intensive, relying largely on updateable digital media and on people—especially on 300-plus
volunteer Museum Galaxy Guides—to shape and deliver current content. Trained to deliver demonstrations and programs, facilitate interactive exhibits, and entertain and interact with visitors, they also bring portable interactive props onto the floor to customize visitors’ experiences. The Museum—and visitors—benefit tremendously from this exceptional group’s knowledge, skills, passion, and experiences. Volunteers range from homeschooled elementary school students to retirees. They work side by side with staff, including actors and educators.

The Museum Galaxy Guides are committed to an ongoing program of learning: information on a web-based “Galaxy Guide Portal” and weekly briefings for each shift, conducted by staff and outside experts, expand their horizons and keep their knowledge and skills current and relevant. Fifteen or so Space Sciences volunteers and a small number of staff work in the Space Sciences Newsroom, keeping up with space science discoveries, images, and events, and producing topical PowerPoint presentations. These are used to train other volunteers and for display on media screens in Space Odyssey, as well as for celebrations of current events such as the Mars Exploration Rover landings, for which the DMNS was, according to NASA, the best-attended venue in the United States. Portable props, such as Phases of the Moon, the GPS Cart, and the Sundial Machine, serve as “human-based teaching devices.”

Museum Galaxy Guides also make extensive use of laptop computers, mounted on height-adjustable rolling carts, which allow them to use information from the Galaxy Guide Portal and from select sites on the Internet as source materials in response to visitor questions and interests. Laptop displays can be mirrored on large media screens (where webcasts, NASA TV, and other digital displays are also hosted), turning them into virtual stages and accommodating larger audiences.

Among Space Odyssey’s immersive environments is a realistic, scientifically accurate Mars diorama. Visitors look out on a canyon landscape with stratified rock formations based on Candor Chasma, a real site on Mars. This diorama capitalizes on the Museum’s long-standing tradition of world-class reconstructions, but it is far from static. It is a stage for “future living history,” where “astronauts” conduct live science demonstrations, communicating with visitors via two-way radio. Clever special effects simulate conditions on Mars,
contributing to scientific understanding and creating unforgettable experiences (Fig. 2.48).17

*Space Odyssey* and its success enabled the Museum to think in a new way—not to overturn what has gone before, but to add to the palette of visitor experiences at the Museum. After *Space Odyssey*’s opening, Museum attendance increased substantially, and surveys indicate that repeat attendance increased from an average of once in two years to once in six months.

**Your Human Body, Not the Human Body**

Continuing the evolutionary path of Museum exhibitions and capitalizing on the increasing potential of technology, *Expedition Health*, a permanent 10,000-square-foot health science exhibition with hands-on, full-body activities and real anatomical specimens, opened in April 2009. The theme is an expedition up Mount Evans, a beloved Colorado “fourteener.” A Peak Pass card customizes the visitor’s experience at interactive exhibits and activity stations, where a virtual learning companion selected from a group of real-life “expedition buddies” delivers video content and provides personal connections. Specialized learning environments geared to different ages, interests, and learning styles round out the on-site experience; a customized website extends the experience at home or school. The project’s internal core team worked with Jeff Kennedy Associates of Boston, Massachusetts, to create *Expedition Health*.

In the technologically complex exhibition and on the website, the visitor experience is personalized with an electronic card reader and data collection system. At one of ten sign-in stations, visitors enter a first name, age, birth month and day, and gender on their Peak Pass and choose an expedition buddy from a group of everyday Coloradans. This information becomes part of a database that customizes and records the visitor experience at Peak Pass–activated interactive exhibits and activities, and later on the *Expedition Health* website. Visitors can access additional activities and revisit their experience online using a unique login number on their personal profile, printed at one of six sign-out stations. Regional focus is
another customizing feature, with a common thread of how the body adapts to life at 5,280 feet above sea level (Denver’s elevation) and adjusts to conditions on an expedition up 14,258-foot Mount Evans. The expedition theme weaves together science and experience, provides a compelling story line, honors the Museum’s natural history roots, and provides an element of adventure. More than 425,000 people experienced Expedition Health in its first year.

In keeping with increased understanding of visitor needs and behavior, five specialized learning environments in the gallery are geared to visitors of different ages, interests, and learning styles. Future Museum exhibitions are likely to include areas designed for the growing early childhood education audience, such as Tykes Peak, which gives young visitors and their caregivers a place to explore health in developmentally appropriate ways (Fig. 2.49). Summit Science Stage is a live demonstration area and hub of facilitated programs. The stage, outfitted with large flatscreens, state-of-the-art projection and audio, and a high-resolution document videocam, features science demos with hands-on activities and real specimens as well as live shows with high-quality digital media. It is hoped that the in-house Digital Media Department, created in support of Expedition Health, will continue to ensure a higher standard of show development and media production museum-wide. BodyTrek Theater, an immersive “object theater” combining objects, video, and props, was the first of its kind in the Rocky Mountain region. BodyTrek includes special sensory
effects and is highly participatory, making it an ideal learning environment for young teens. The experience features an expedition up Mount Evans with an expert mountain guide, illustrating how people adapt to extremes such as high elevation and exertion, and measuring how your own body responds as a sensor in your chair measures your blood-oxygen level and takes your pulse. Special effects such as wind, falling “snow,” and snapshots of the audience at dramatic moments bring the experience and science content to life. At Biology Base Camp, designed for families, visitors participate in five self-guided biology experiments (Fig. 2.50). Volunteers supply lab coats, gloves, and guidance; video tutorials give step-by-step instructions. Genetics of Taste was the first museum-based community health research lab. Guided by specially trained volunteers, visitors contribute data to an innovative National Institutes of Health project investigating the connection between body composition, genetic ancestry, and genes linked to the ability to taste bitter compounds.

To create the exhibition’s experiential underpinning, 12 expedition buddies were selected from a diverse pool of more than 500 applicants to participate—as volunteers—in a summerlong “physical and intellectual boot camp” and a real mountain expedition (Fig. 2.51). The training, expedition, and individual interviews were documented in video and stills used in interpretive graphics and media. Research shows that children in particular learn more effectively with a
companion; each visitor’s buddy delivers content and context as a virtual learning companion in professionally produced videos at Peak Pass–activated exhibits. The buddies provide a human perspective and represent ages from ten to “retiree,” as well as the diversity of the community. The process was a complex collaboration between the Museum, Jeff Kennedy Associates, community members, the National Outdoor Leadership School, the U.S. Forest Service, and filmmakers.18

Summative evaluation data collected in the fall of 2009 indicated long dwell times and an unusually high level of engagement: nearly half the visitors stopped at more than 50 percent of the components, and more than half participated in full-body interactive experiences.19 Though the exhibition had been open a relatively short period of time, some 30 percent were making a return visit. Statistics like this helped Expedition Health earn the Museum’s second Association of Science-Technology Centers “Edgie” Award for Visitor Experience, in 2010.

Shooting for Dynamism and Quick Response

Visitor evaluations show that unless people witness things changing before their eyes, as in Space Odyssey, or that have changed since their most recent visit, they aren’t likely to think of the Museum as being truly dynamic. A number of smaller-scale efforts that strive to put new information in the visitor’s view on a quicker-term basis have been implemented in the past decade or so. As of this writing, small new exhibits are typically installed in core-competency-based changing cases every six months to a year: Anthropology’s Weckbaugh Alcove and Red Wall in North American Indian Cultures, the Earth Sciences/Paleontology changing case in Prehistoric Journey, and the Zoology case, housed in a historic mahogany exhibit case in the central atrium.
To address things that call for an even faster turnaround, the somewhat-under-the-radar Quick Response Team (QRT) started up in 1999. This large cross-departmental team takes on the task of displaying information about current events and items of topical interest. One important step for the team was to figure out what delivery mechanisms and locations were available, unlikely to conflict with other Museum programs and events, and—most important—easy to implement. Staff designed and built a rolling QRT cart that can accommodate two sides of interpretation and images, beneath which are mix-and-match modular components: a video or computer monitor, talk-back writing surface, pedestal with a vitrine for displaying objects, and/or a pedestal for touch specimens. Fifteen or so cart displays between 2000 and 2010 included such topics as Six-Billion-People Day, marking a milestone in the world’s population and including both an in-house display and a public forum in downtown Denver; wolf and lynx reintroduction; drought and groundwater; and Going Green, about the Museum’s conservation and energy efficiency initiatives (Fig. 2.52).

Other QRT delivery systems include videos, posters, programs, and facilitated carts. The most consistently successful QRT outlet is a free-standing glass-covered bulletin board that can be placed in a number of locations, complete with a graphic background that makes the display look polished while enabling quick development, production, and installation without needing to rely on graphic designers, exhibit preparators, and other busy staff. More than 50 topics have been covered thus far on this In the News bulletin board. In 2010–2011 alone, bulletin board displays covered avalanches in Colorado; the Haiti and Chile earthquakes; National Volunteer Month; a Mississippi tornado; tornados and runoff flooding because of extreme heat in Colorado; the environmental effects of the BP oil spill; beetle kill in Colorado; the Fourmile, Reservoir Road, and Fraser wildfires; spider myths; Snowmastodon ice age discoveries; the Japan earthquake and tsunami; environmental and health effects of nuclear reactor meltdown; the bedbug epidemic; and the August 2011 Colorado and East Coast earthquakes.

The 2010 discovery of ice age fossils at Snowmass Village created a need to find additional quick and relatively easy ways to keep the public informed about the exciting progress of the dig. From QRT bulletin boards and a facilitated cart in Prehistoric Journey to displays in PJ’s Earth Sciences Lab window and on the Museum website, updated Snowmastodon news has been constantly available to visitors and fans. In a testament to the flexibility and ingenuity of Museum staff, a huge, plaster-jacketed mammoth skull had a place of honor in the Museum’s central atrium, temporarily obscuring the Insects, Butterflies, and Moths exhibit. Staff and volunteers cracked open the cast and prepared the unique Clay Mammoth, known internally as “Gigantor,” unveiling the unseen and unknown before visitors’ eyes (Fig. 2.53).
What Next?

Next up is the rest of the Museum 20/20 strategic plan. From the exhibitions perspective, Museum 20/20 began with the development and installation of Expedition Health and refurbishing Phipps Gallery to the highest standards for hosting traveling exhibitions. In perfect illustration of John Campion’s 1908 words, construction has begun on the new Education and Collections Facility, which will expand the Museum to the south. The new facility will contain a second state-of-the-art temporary exhibit gallery, capable of hosting a separate exhibition or connecting to Phipps Gallery for a single extremely large one. The second floor of the new building will also house an exciting new Discovery Zone for the growing audience of families with young children age three to five. The Planet Earth initiative is the next major permanent exhibition project in the pipeline, to be followed by an anthropology exhibition currently referred to as Human Journey or The Human Experience. The Museum’s tradition of creating, hosting, and enhancing high-quality exhibits shows no signs of stopping.

Figure 2.53. Fossil preparators working on the Clay Mammoth.
Museum Conservation Department

by Jude Southward

In 1988 the Museum completed the General/Facilities Survey funded in part through the Institute of Museum and Library Services (IMLS) Conservation Project Support program. Results of the survey indicated that the institution needed to commit to improved collections storage and develop a conservation plan for the long term. The Museum created the Museum Conservation Department in 1990 to help guide the work and in the same year completed its first annually updated Long-Range Conservation Plan.

The goal of the Conservation Department is to provide long-term preservation care and reduce risks to the collections, both in storage and on exhibit (Fig. 2.54). A preventive conservation strategy helps staff mitigate risks to collections from physical, chemical, and biological sources. This strategy includes developing policies and procedures for integrated pest management, reduction of light levels, and improving collections storage. In the latter instance, the Museum collections on open shelves are at risk for damage from mishandling, overcrowding, dust accumulation, pest infestation, and fading from light exposure. The department addressed these problems by improving storage conditions to include new closed cabinets and upgraded storage mounts. Between 2008 and 2010, the department led the Museum through a risk assessment to further identify and manage risks (IMLS Museums for America provided partial funding). This is an internationally recognized process, and the Museum was among the first worldwide to complete the process to such a degree of thoroughness across its collections and throughout the facility. The assessment allowed the Museum to quantify risks for the first time, and along with the Long-Range Conservation Plan, the Collections Risk Assessment20 (Southward et al. 2013) now guides collections preservation. Recommendations from these two documents provided invaluable input into the planning and design for the Education and Collections Facility.

The Museum and the Conservation Department have a successful grant-writing history: during the period between 1984 and 2011, staff and contract conservators received 17 grants from the IMLS Conservation Project Support program for either improving storage conditions or completing conservation stabilization treatments of objects. Almost all grants included a condition survey, the fabrication of new storage mounts (Fig. 2.55), and the purchase of new storage cabinets. Funds received from IMLS for these grants total approximately $1 million, and the matching cost share of funds for staff and volunteer time amounts to slightly more than that amount. These funds have allowed staff to examine the condition of and improve storage for

Figure 2.54. Conservator Jude Southward works on the Benjamin Franklin temporary exhibit.
approximately 20,000 collection objects. The physical and chemical integrity of approximately 2,000 objects have been stabilized through conservation treatments. An additional grant from the National Endowment for the Humanities helped the Museum lay the groundwork for an emergency preparedness plan for collections.

Department staff work closely with Exhibits staff on exhibitions by completing incoming and outgoing condition reports, stabilization treatments, and monitoring of environmental conditions for permanent and temporary exhibitions, as well as for numerous changing cases and object loans. Some of the more recent blockbuster exhibitions include China, Jane Goodall, Machu Picchu, Ben Franklin, Dinosaurs, Vikings, Quest for Immortality (Egypt), Lewis & Clark, Titanic, Gold, Genghis Khan, Real Pirates, and A Day in Pompeii. In addition, the department undertook preventive conservation measures for the dioramas and completed condition reports and stabilization treatments for objects in the North American Indian Cultures exhibition when it was upgraded in the mid-1990s. The Museum was a founding member of the Rocky Mountain Regional Conservation Center and used many of the conservation services provided by that organization during the 1980s until the department was created in 1990. Carl Patterson consulted closely with the Museum during the 1980s and served as the first head of the department, from 1990 until 1991. Carolyn Leckie served as department chair from 1992 until 1998. Jude Southward served as a department conservator from 1993 until 1998, and she has served as department chair since 1998. Robert (Bob) Akerley served as the special projects coordinator from 1992 until 2006. The current department is comprised of Jude Southward, conservator and chair of the department, and Julie Parker, the Save America’s Treasures grant conservator. Staff has participated in community outreach by giving presentations at local, national, and international conferences as well as being available to answer questions from the public regarding collections care.

Other conservators who have worked in the department include Matthew Crawford, Jessica Fletcher, Judy Greenfield, Barbara Johnson, Gina Laurin, Abigail Mack, Meghan McFarlane, Judi Moon, and Michaela Niero. Conservator Cathy Hawks consulted to lay the groundwork for the DMNS Collections Emergency Preparedness Plan, and conservators Robert Waller and Garnet Muething guided Museum staff through the Collections Risk Assessment. Volunteers and interns have assisted the department throughout the years, and have been especially dedicated to working with the two-year-long IMLS grants to improve storage conditions.
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In addition to Literature Cited and the following endnotes, the Museum’s annual reports from the years 1930–1939, 1981–1988, and 1996 were an important source of information for this chapter.


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CHAPTER 2 — EXHIBITS An Evolution

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