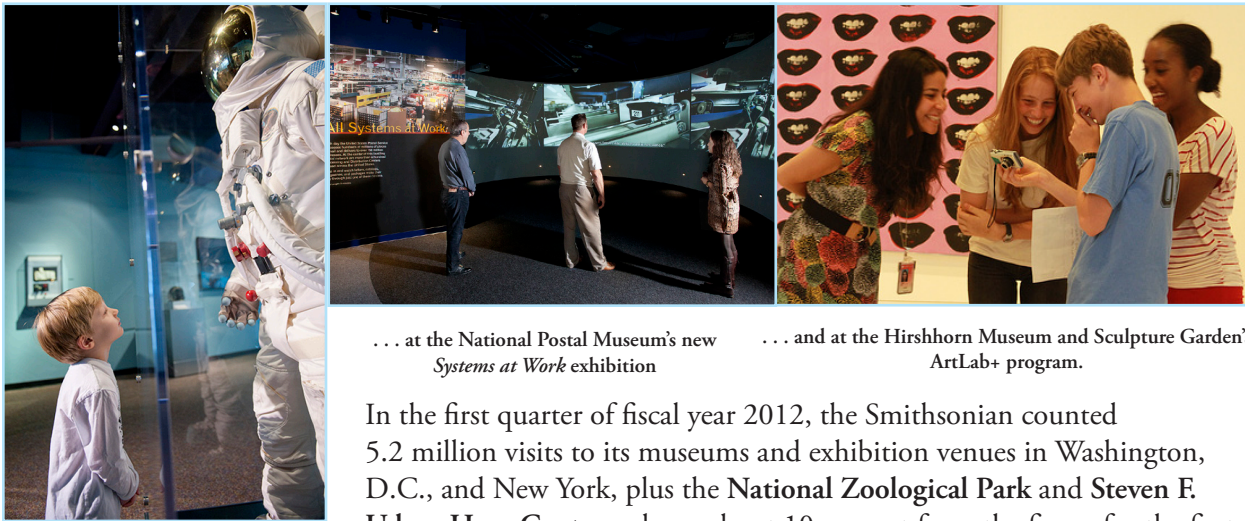




Secretary G. Wayne Clough addresses participants at the Microsoft Partners in Learning Global Forum, hosted by the Smithsonian and attended by educators and education leaders from more than 70 countries. The Smithsonian Center for Education and Museum Studies collaborates with Microsoft Partners in Learning on the “Shout” global environmental education initiative.

Report to the Regents First Quarter, Fiscal Year 2012

Broadening Access: Visitation Summary



Visitors at the Smithsonian Institution Traveling Exhibition Service's *Suited for Space* (at the Science Museum of Virginia) . . .

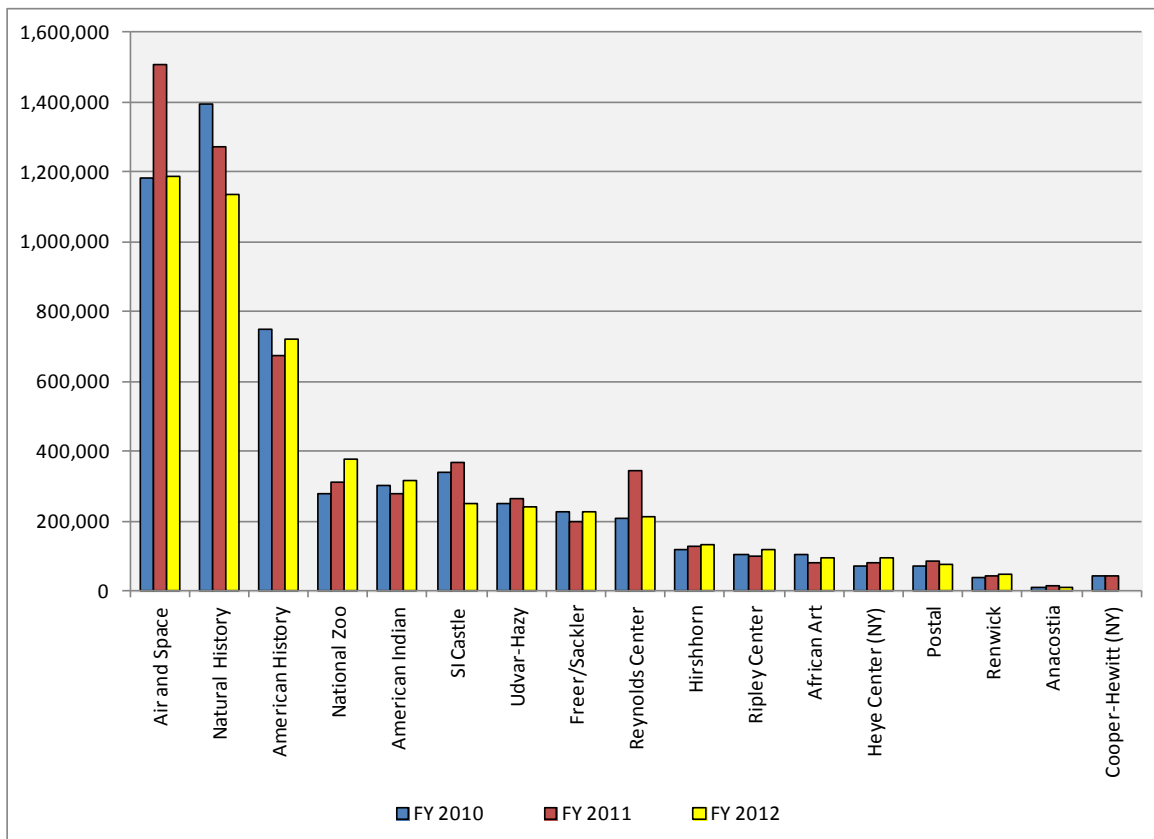
. . . at the National Postal Museum's new *Systems at Work* exhibition

. . . and at the Hirshhorn Museum and Sculpture Garden's ArtLab+ program.

In the first quarter of fiscal year 2012, the Smithsonian counted 5.2 million visits to its museums and exhibition venues in Washington, D.C., and New York, plus the **National Zoological Park** and **Steven F. Udvar-Hazy Center**—down about 10 percent from the figure for the first quarter of fiscal year 2011. The Smithsonian also counted 24.1 million unique visitors to its websites.

Visits to Smithsonian Venues

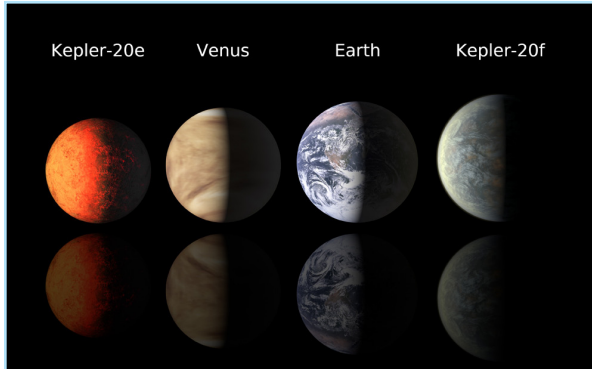
Fiscal Years 2010, 2011, and 2012



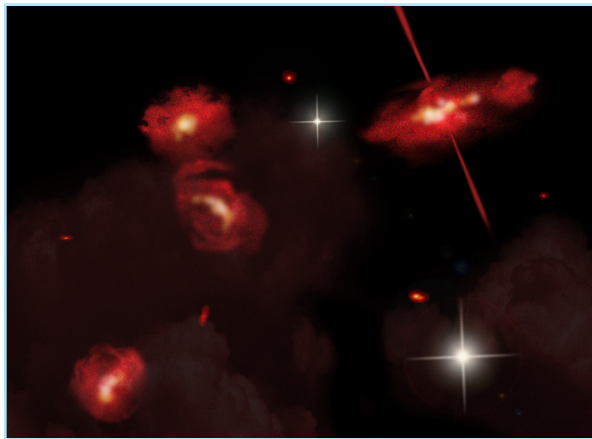
Grand Challenges Highlights

Unlocking the Mysteries of the Universe

*Research: Smithsonian Astrophysical Observatory (SAO)
Harvard-Smithsonian Center for Astrophysics (CfA)*



Artist's conception of Kepler-20e and Kepler-20f, shown in comparison to Earth and Venus



Red galaxies

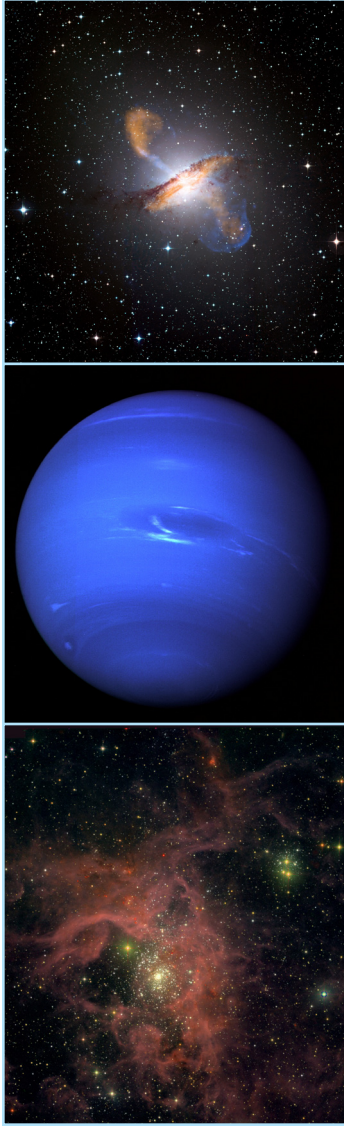
Using the Kepler satellite, SAO astronomers and their colleagues discovered two Earth-sized planets (Kepler-20e and Kepler-20f)—the first ever confirmed— orbiting a distant star. This is a significant milestone in the search for Earth-like planets that might harbor life.

SAO astronomers have found four extremely red galaxies, so distant that their light has been traveling towards us for over 11 billion years. Galaxies are red because they are dusty (a sign of star creation activity), because they contain many old red stars, or, if distant, because the expansion of the universe reddens their light. All three reasons seem to apply to these four galaxies, which were found using the SAO-led camera on the Spitzer Space Telescope.

Black holes have only three intrinsic properties: mass, spin, and charge—although their charge is usually thought to be close to zero. SAO astronomers have, for the first time, succeeded in directly measuring the mass and spin of a black hole: the one in Cygnus known as Cygnus X-1, which formed as the result of a supernova. Its mass is 14.8 times that of the Sun, and its surface-of-no-return (“event horizon”) for infalling matter spins more than 800 times per second.

Matter in the universe after the Big Bang consisted almost entirely of hydrogen and helium atoms. Only later, after undergoing fusion reactions in the nuclear furnaces of massive, short-lived stars, did these elements transform into the other, heavier elements of today’s cosmos and disperse to make newer stars. SAO astronomers completed a study of dwarf stars in our galaxy that are deficient in these heavy elements, confirming that these stars are among the oldest objects in the cosmos.

Two former CfA graduate students, Adam Riess and Brian Schmidt, along with another astronomer who worked independently of them, shared the 2011 Nobel Prize in Physics for their extraordinary discovery that, based on studies of supernovae at high redshift, the expansion of the universe is accelerating. Their thesis work at CfA addressed this topic.



Mind-bending images from *The Evolving Universe*

Other Research

Ending a 20-year search, Tim McCoy of the **National Museum of Natural History** and his colleagues have identified the first pyroclast (rock of volcanic origin) from an asteroid. The texture and composition of this fragment allowed the research team to conclude it was formed when ancient volcanoes erupted on the surface of an asteroid.

At the International Astronautical Congress in Cape Town, South Africa, two curators from the **National Air and Space Museum's** Division of Space History presented papers: Michael Neufeld (*The Three Heroes of Spaceflight: the Rise of the Tsiolkovskii-Goddard-Oberth Interpretation and its Current Validity* and *Was the Rocket 'Invented' or 'Accidentally Discovered'? Some New Observations*) and Roger Launius (*Opposing Apollo: Political Resistance to the Moon Landings* and *The Strange Career of the Spaceplane: NASA and the Quest for Routine Human Space Operations*).

Broadening Access

The **National Museum of Natural History** and **Smithsonian Astrophysical Observatory** collaborated to produce *The Evolving Universe*, currently on display at the former (October 21, 2011–July 7, 2013). This richly-illustrated exhibition explores how stars, galaxies, and the universe itself change as they move from birth through maturity to death. It will travel the nation with the **Smithsonian Institution Traveling Exhibition Service** after its run at the Smithsonian.

In live broadcast over NASA TV from the **National Air and Space Museum's** *Moving Beyond Earth* presentation center, a Space Shuttle astronaut team shared their experiences in the astronaut corps and discussed their last flight to supply the International Space Station.

Four lectures in the NASA-sponsored “Smithsonian Stars” series, featuring Smithsonian researchers and experts, were held at the **National Air and Space Museum**. Topics included determining the age of stars, a visual tour of Mars, exploring asteroids, and Antarctic meteorites.

Understanding the American Experience

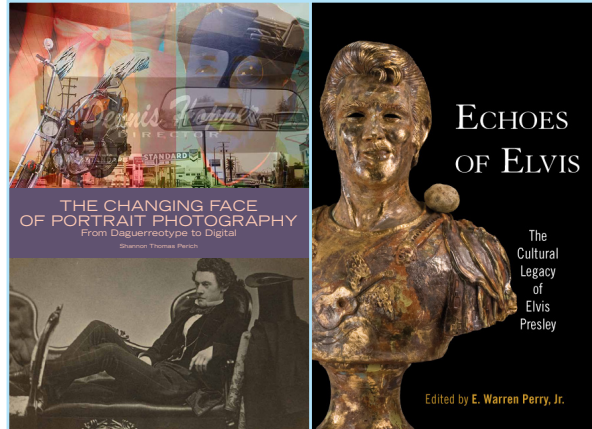
Research

The **National Museum of African American History and Culture** completed Phase I of its Civil Rights History Project, a collaboration with the Library of Congress to preserve the stories of Americans involved with the Civil Rights movement. To date, over 50 interview sessions have been completed.

The **National Museum of the American Indian** held two scholarly symposia. “Fact or Fiction? The United States Courts’ Use of History to Shape Native Law Jurisprudence” explored the historical foundations of key court decisions impacting Native Americans. At “Our Warrior Spirit: Native Americans in the U.S. Military,” Native veterans shared their stories of service, and noted scholar Herman J. Viola chronicled the history of Native soldiers from 1770 to the present.

The Smithsonian hosted a symposium organized by Shannon Perich of the **National Museum of American History** and Michelle Delaney of the **Office of the Under Secretary for History, Art, and Culture** on “Inventing American Photography.” In a related development, the **Smithsonian Institution Scholarly Press** published Perich’s book *The Changing Face of Portrait Photography: From Daguerreotype to Digital*.

Echoes of Elvis: The Cultural Legacy of Elvis Presley, edited by the **National Portrait Gallery’s** E. Warren Perry Jr., was published by the **Smithsonian Institution Scholarly Press**.



The **Smithsonian American Art Museum** organized “Encuentros: Artistic Exchange between the U.S. and Latin America,” a symposium that drew about 200 scholars. It was the third of five symposia on the theme of “American Art in a Global Context” supported by the Terra Foundation for American Art.

Broadening Access

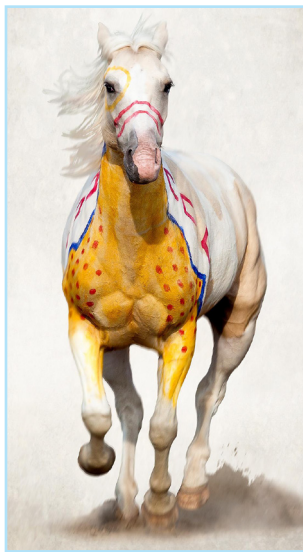
At the **National Museum of American History**, the permanent exhibition *The First Ladies* opened on November 19, 2011. It explores the unofficial but important position of First Lady and the ways in which different women have shaped the role. It features 26 dresses and more than 160 other objects associated with First Ladies, from Martha Washington to Michelle Obama.



The First Ladies

Also at the **National Museum of American History**, the meticulously conserved Jefferson Bible went on public display in the

exhibition *Jefferson’s Bible: The Life and Morals of Jesus of Nazareth* (November 11, 2011–July 15, 2012) in the Albert H. Small Documents Gallery.



A Song for the Horse Nation

The **National Museum of the American Indian** presented the exhibition *A Song for the Horse Nation* (October 29, 2011–January 7, 2013), showcasing 122 historic objects, artworks, photographs, songs, and personal accounts that tell the epic story of the horse’s influence on American Indian tribes.

Smithsonian Folkways Recordings’ *American Anthology of Folk Music* was inducted into the Grammy Hall of Fame. It is the second recording from Folkways to be so-honored, joining “This Land is Your Land” by Woody Guthrie. The *Anthology* brought little-known parts of America’s musical landscape to the public’s attention and inspired a generation of musicians to explore the traditions it presented.

The **National Museum of African American History and Culture** presented the panel discussion “America in Black and White” to address how the museum plans to address race-related issues.

The exhibition *Seeing Gertrude Stein: Five Stories* (October 14, 2011–January 22, 2012) at **National Portrait Gallery** featured artifacts and artistic works detailing the life and work of the noted American expatriate writer and art promoter Gertrude Stein.

Also at the Portrait Gallery, *The Black List* (October 27, 2011–April 22, 2012) offered images by photographer Timothy Greenfield-Sanders of prominent African Americans. In conjunction with its opening, the Gallery hosted a private event attended by 500 people, including more than a dozen of the sitters portrayed in the exhibition.

Two permanent exhibitions opened at the **National Postal Museum**:

- *Systems at Work* (opened December 14, 2011) takes visitors to 10 eras in the nation’s history, providing information about aspects of postal operations from each. Together, they reveal the evolution of the postal system over time. A companion virtual exhibit was created for those who are not able to visit the museum in person.
- *Mail Call* (opened November 10) explores how the military postal system works and why mail has always been so important to the deployed men and women of the armed forces. This exhibition also features a virtual exhibition counterpart.

The **National Portrait Gallery’s** David C. Ward and Frank H. Goodyear III collaborated with *The Atlantic* magazine for a special commemorative issue to mark the 150th anniversary of the Civil War. The issue includes images from the Gallery’s collection, articles by great writers of the period, and a short essay by President Barack Obama.

The *Americans All* initiative to explore immigration and migration in the United States includes staff from the **Center for Folklife and Cultural Heritage**, **Smithsonian Latino Center**, **Asian Pacific American Program**, **Smithsonian Center for Education and Museum Studies**, and **National Museum of American History**. This quarter it presented the first in a series of events focusing on new communities in the Washington, D.C., area, “Silver Spring Stories: A Conversation about Community and Immigration,” to an audience of over 160.

The exhibition *Carl Beam* (October 29, 2011–April 15, 2012) opened at the **George Gustav Heye Center of the National Museum of the American Indian** in New York City. It featured a retrospective of 41 works by Beam (Ojibwe, 1943–2005).

The **Archives of American Art** exhibition *Words Cannot Express: Death in the Archives* was on display in the Lawrence A. Fleischman Gallery at the Reynolds Center (October 31–December 31, 2011). Through primary sources, it examined the intense emotions surrounding death and dying.



Seeing Gertrude Stein



Artifacts from *Systems at Work*



Americans All in Silver Spring



Patent models on display in *Building a Better Mousetrap* included an electromagnetic engine (l) and a paper bag machine (r)

Inventing a Better Mousetrap: Patent Models from the Rothschild Collection (November 11, 2011–November 3, 2013) opened at the **Smithsonian American Art Museum**, featuring 32 models of 19th-century U.S. inventions from the collection of Alan Rothschild, the largest private collection of American patent models.



Artifact from *Something of Splendor*

Something of Splendor: Decorative Arts from the White House went on display at the **Renwick Gallery** of the **Smithsonian American Art Museum** (October 1, 2011–May 6, 2012). It explores the decorative arts in the official residence of the President. The museum also produced a short film, *At Home in the White House*, in which first families offer their personal memories about living in America's most famous home.

Call and Response: Community and Creativity is an ongoing initiative at the **Anacostia Community Museum** that explores the arts in Wards 7 and 8 of Washington, D.C. The second of the initiative's exhibition series presents works by artist Steven Cummings and Creative Junkfood, a multi-media production studio (December 12, 2011–April 29, 2012).

Valuing World Cultures

Research

Using new evidence, **National Museum of Natural History** anthropologist Melinda Zeder, has suggested that plant and animal domestication in the Near East occurred at about the same time, and more than once (in different places), for the same species. Her findings, published in *Current Anthropology*, raise questions about the 1,500-year gap previously believed to have separated the two types of domestication.

Two volumes by **National Museum of Natural History** scholars of human culture were published by the **Smithsonian Institution Scholarly Press**: *Faces We Remember / Neqamikegkaput: Leuman M. Waugh's Photography from St. Lawrence Island, Alaska, 1929–1930*, edited by Igor Krupnik of the museum's Arctic Studies Center and Vera Oovi Kaneshiro, and *Artifacts from the Craig Mound at Spiro, Oklahoma (Contributions to Anthropology, No. 49)*, by April K. Sievert with the museum's J. Daniel Rogers.

The **Smithsonian Institution Libraries** welcomed the Middle East Librarians Association for its 2011 annual meeting at the National Museum of Natural History. Close to 80 participants from prominent research and university libraries in the United States and around the world attended the meeting, which covered topics such as documenting the Middle East in the digital era.

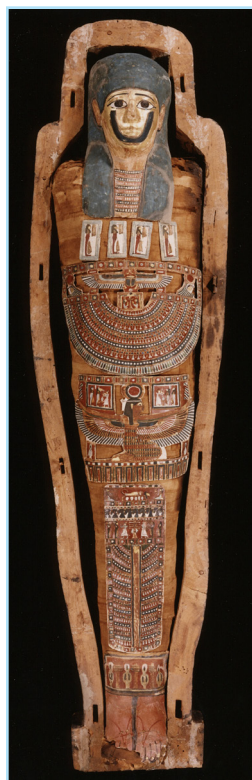
Center for Folklife and Cultural Heritage Director Daniel Sheehy gave a talk on “Music Recording Copyright in the United States” at the first China-U.S. Forum on Intangible Cultural Heritage: Comparative Policies, which was held in Guangzhou, China.

The **Freer and Sackler Galleries** hosted two scholarly symposia: the inaugural Lunder Consortium for Whistler Studies’ “Palaces of Art: Whistler and the Art Worlds of Aestheticism,” and “Imperial Exposure: Early Photography and Royal Portraits across Asia” (to coincide with the Sackler exhibition *Power|Play: China’s Empress Dowager*).

The Galleries also presented a bilingual (English/Japanese) webcast about the Freer’s tea-leaf storage jar Chigusa, which drew over 400 participants from Japan, Australia, the United States, and elsewhere.

The African Studies Association’s Annual Meeting was held in Washington, D.C., in November 2011. The **National Museum of African Art** offered a pre-conference Museum Day with panel discussions and tours of the museum’s Eliot Elisofon Archives and main storage facilities. Offerings for meeting participants also included a tour of the exhibition *Central Nigeria Unmasked* and a reception.

A catalogue for the **National Museum of African Art’s** exhibition *Artists in Dialogue 2* was published in time to be stocked on its store shelves for the African Studies Association Meeting.



Eternal Life in Ancient Egypt

Broadening Access

With seven new cases of artifacts and mummies—most of which have not been on display at the Smithsonian—the new permanent exhibition *Eternal Life in Ancient Egypt* (opened November 17, 2011) at the **National Museum of Natural History** focuses on the insights that mummies, burial rituals, and cosmology provide about life in ancient Egypt.

The **Smithsonian Latino Center** collaborated on this year’s **National Air and Space Museum’s** Hispanic Heritage Month Family Celebration, which featured presentations by NASA scientists and engineers, a “Young Latinos in STEM” session, and a dance party hosted by Jim Byers of WPFW’s “Latin Flavor.”

The **Asian Pacific American Program** presented the 11th annual South Asian Literary and Theater Arts Festival at the Baird Auditorium of the National Museum of National History. It was followed by a reception at the Indian Embassy, attended by Indian Ambassador Nirupama Rao.

The **Anacostia Community Museum’s** first traveling exhibition, *Word Shout Song: Lorenzo Dow Turner Connecting Communities through Language*, went on display at South Carolina State University’s I.P. Stanback Museum in

Orangeburg. It was on view at the museum in 2010–11 and, due to intense interest was reformatted as a touring exhibition.

Two permanent exhibits went on display at the **Freer Gallery of Art** on November 5, 2011: *Cranes and Clouds: The Korean Art of Ceramic Inlay* and *Silk Road Luxuries from China*.



At the Indian Embassy: Under Secretary Richard Kurin, Asian Pacific American Program Director Konrad Ng, Ambassador Nirupama Rao

Understanding and Sustaining a Biodiverse Planet

Research: Smithsonian Environmental Research Center (SERC)

SERC scientists published 12 papers in peer-reviewed journals, including the high-impact journals *Nature* and *BioScience*.

SERC biologists have discovered how U.S. efforts to keep out invasive species are falling short. In the most comprehensive study to date, SERC's Whitman Miller looked at more than 100,000 international ships docked in U.S. ports and loaded with ballast water that may harbor microscopic invasive species. He found cargo ships dump millions of tons of ballast water in port every year that have not been properly treated for invasive species. This highlights the urgent need for new technologies for onboard treatment of ballast water.

Climate change is drawing invasive species like the green porcelain crab north, where they can wreak havoc on local ecosystems, a phenomenon known as “Caribbean Creep.” However, in a study published in *PLoS ONE*, SERC's João Canning-Clode gathered evidence that unusually harsh winters could stop this advance. He conducted an experiment in which three groups of green porcelain crabs were subjected to differing temperature treatments, and found that even relatively short exposure to abnormally cold conditions killed off large numbers of the crabs. This suggests that while climate change can help invasive species spread, abnormal weather may work in the opposite direction.

In a study published in the *Journal of Biogeography*, SERC biologist April Blakeslee found evidence for the “parasite escape hypothesis” of invasive species. She examined two snail species and confirmed that invading new territory helped them escape a parasitic flatworm in their original habitat.



SERC scientists have discovered that much ballast water released in U.S. ports has not been treated for invasive species . . .



. . . but unusually cold winters may help to limit the northern expansion of invaders.



STRI entomologist David Roubik

Research: Smithsonian Tropical Research Institute (STRI)

In this quarter, 60 publications were added to the STRI bibliography. Among these was the **Smithsonian Institution Scholarly Press** volume *Ecology of the Podocarpaceae in Tropical Forests (Contributions to Botany, No. 95)*, edited Benjamin L. Turner of STRI and Lucas A. Cernusak.

The discovery and observation of two new, related bee species—one from Panama's Coiba Island and another from northern Colombia—by STRI's David Roubik and his colleagues have shed new light on the origins of the Isthmus of Panama. Traditionally, geologists believed the Isthmus arose about 3 million years ago. Evidence that bees closely related to South American species were established in Central America around 17 million years ago, however, supports other evidence that the connection between the continents is much older.



STRI scientists found an inverse relationship between body size and relative brain size in spiders



STRI scientists S. Joseph Wright and Ben Turner braved ticks and tigers to discover how human activities have affected the nitrogen cycle at two remote Smithsonian Institution Global Earth Observatory (SIGEO) sites in Panama and Thailand, examining changes over time in leaf nitrogen concentrations and the ratio of heavy to light nitrogen isotopes. Nitrogen deposition may change the composition of tropical forests, and understanding it is important to understanding the effects of global change.

As part of their research on how miniaturization affects brain size and behavior, William Wcislo and William Eberhard of STRI measured the central nervous systems of nine species of spiders of vastly different sizes—the largest weighed about 400,000 times more than the smallest. They discovered that the brains of tiny spiders are so large that they fill their body cavities and overflow into their legs. These results were reported widely in the media, including in the *New York Times* Science section.

International research is crucial to the management of sea turtles that need both coastal and offshore habitats. In December 2011, STRI convened a Regional Symposium on South Eastern Pacific Sea Turtles, featuring 26 speakers from countries along the Pacific coast from the

United States to Peru. The 120 participants exchanged information about turtle conservation.

Research: National Museum of Natural History (NMNH)

In an article in *Science*, NMNH paleobiologist Douglas Erwin and his colleagues cast new light on the evolution of complex animals. Their results expose a 200-million-year gap between molecular evidence of the evolution of such animals and their first appearance in the fossil record during the Cambrian explosion, and they attempt to explain this lag. By synthesizing data from the fossil record with molecular data, this study demonstrates that to understand early animal evolution, an understanding of the expansion of ecological networks through deep time is needed.

NMNH's Richard Vari and his collaborators published the first in-depth analysis of the neotropical freshwater fish family *Characidae*, the third-largest family of fish in the world. Their work has resulted in dramatic revision of previous concepts, including the recognition of multiple families rather than one.

Working with a team of investigators, NMNH's Kevin de Queiroz sequenced the genome of green anole lizards (*Anolis carolinensis*) and compared it with genomes of birds and mammals. It is the first genome from the large group of lepidosaurian reptiles (lizards and relatives) to be sequenced. The results, published in *Nature*, provide insights into genome evolution in vertebrates.

Nick Pyenson of NMNH's Paleobiology Department conducted a comprehensive analysis of dead stranded whales. By comparing stranding and sighting records, he found that the former reflects the same patterns of diversity found in the latter, and that including stranding information provides a better picture of the cetacean diversity than can be obtained from a live survey alone.



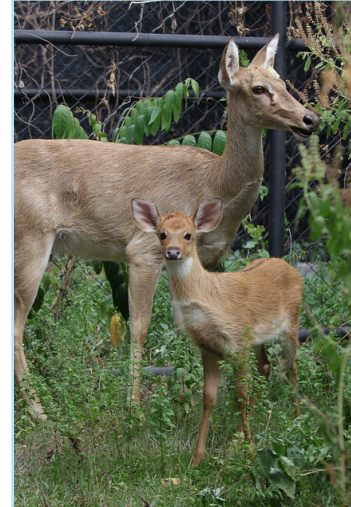
Skeleton of a stranded whale

Research: National Zoological Park (NZIP)
Smithsonian Conservation Biology Institute (SCBI)

Research conducted by Earlham College's Heather Lerner when she was a SCBI postdoctoral researcher has helped to illuminate the family tree for one of the world's most diverse and endangered bird families, the Hawaiian honeycreepers. Using next-generation DNA sequencing methods, Lerner and her collaborators determined the types of finches from which the honeycreepers evolved, and linked the timing of that evolution to the formation of the four main Hawaiian Islands.

Nearly 20 years after SCBI became the first to produce an Eld's deer fawn through artificial insemination, SCBI scientists have contributed to the birth of the first Eld's deer through in vitro fertilization, which occurred at the Khao Kheow Open Zoo in Thailand. SCBI has a long history of training researchers and veterinarians working with Eld's deer and developing innovations to conserve the species, which is considered endangered by the International Union for Conservation of Nature.

Coral reefs are disappearing because of pollution, climate change, acidification, and destructive fishing practices, threatening the first extinction of a worldwide ecosystem since prehistoric times. Using a technique applied by SCBI scientists in the Caribbean and Hawaii, researchers from SCBI and partnering organizations spent two weeks collecting sperm and embryonic cells to create the first frozen repository of Great Barrier Reef corals. The samples remain alive but in stasis in long-term storage, and future scientists will be able, if necessary, to thaw and use them to restore a species or diversify a population.



Eld's deer



Endangered coral

Other Research

The Biodiversity Heritage Library, a collaborative initiative headquartered at the **Smithsonian Institution Libraries** that provides the digital literature component of the Encyclopedia of Life, hosted "Life and Literature," a two-day conference for biodiversity literature stakeholders. The conference was held at the Field Museum in Chicago.

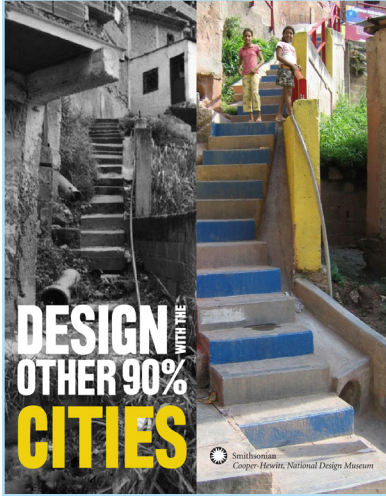
Broadening Access

The **Smithsonian Tropical Research Institute** published a 44-page educational booklet in Spanish, *Nuestra Casa en el Universo*, to inform indigenous groups about climate change and Reduced Emissions from Deforestation and Degradation (REDD) proposals to combat it.

Black-footed ferret keepers at the **Smithsonian Conservation Biology Institute** in Front Royal revealed the name chosen by over 1,000 people who voted on *Smithsonian* magazine's website for the new star of the National Zoo's black-footed ferret webcam: Rosebud. The young Rosebud will remain in captivity for possible breeding, and on view via webcam for devoted ferret fans.



Rosebud the black-footed ferret



Crossing Boundaries

Research

A fully illustrated catalogue was published to accompany the **Cooper-Hewitt, National Design Museum** exhibition *Design with the Other 90%: Cities*. The catalogue features essays by and interviews with experts on socially responsible design, as well as profiles of the innovations covered in the exhibition.

The **Museum Conservation Institute** worked on over 60 projects with 23

Smithsonian units and with external organizations, including government agencies, conservation groups, universities, and foreign agencies. Among the Institute’s research highlights were the following:

- Institute researchers published results from two projects that used proteomics methods to study proteins in wool. In one, the Institute’s Mehdi Moini and his student Naoko Araki studied how rates of change in amino acid residues might be used as a short-term (less than 400 years) dating technique for wool objects. The other looked at the textiles of the Coast Salish Indian tribe, finding evidence to support oral traditions and historic accounts that suggest special dogs were once bred for their wool.
- Edward Vicenzi, Melvin Wachowiak, and Elizabeth Keats Webb are working with historians, research scientists, and conservators from other Smithsonian units and external organizations to develop new insights on daguerreotypes, the first successful photographic technique.

The **Archives of American Art** partnered with the Getty Research Institute on the symposium “Artists and Archives,” at the Getty Center in Los Angeles. Featuring noted cultural theorists, art historians, and artists, the symposium considered how primary sources can not only document works of art, but also become works of art in their own right.

Broadening Access

The **Hirshhorn Museum and Sculpture Garden** presented *Directions: Empire*³ (November 10, 2011–March 25, 2012), an exhibition that examined the ongoing influence of Andy Warhol’s groundbreaking film *Empire* (1964), and *Black Box: Ali Kazma* (December 19, 2011–May 13, 2012), the latest installation in the museum’s ongoing Black Box new media exhibition series.

Cooper-Hewitt’s National Design Week (October 15–October 23, 2011) series is now in its sixth year. Highlights of the 2011 program included three sold-out sessions of the Target Design Kids family program; a Teen Design Fair; a panel on the state of contemporary design; a “Business of Design” breakfast with corporate leaders; and the 2011 National Design Awards gala.



MCI staff are seeking new insights into early photography

Cooper-Hewitt's 2007 exhibition *Design for the Other 90%* has been developed into an ongoing series. *Design with the Other 90%: Cities*, the second exhibition in this series (October 15, 2011–January 9, 2012), focused on design solutions to the challenges created by rapid urban growth. It was on display at the United Nations headquarters in New York City, an ideal place to connect with stakeholders. A variety of media and social media initiatives were launched to support the exhibition, including an interactive blog, a campaign of daily Tweets and Facebook posts, an online database of socially responsible design projects, and a four-part series produced by the Smithsonian Channel.



Design with the Other 90% at the United Nations

The **National Air and Space Museum** hosted “Moving Beyond Earth: Innovations in Space,” an event cosponsored by the Lemelson Center of the National Museum of American History. The program included a screening of the film *Orphans of Apollo* and a discussion with its director, a full-day public symposium, presentations on living in space and the future of spaceflight, and family programs.

As part of the Director’s Discussion Series, **National Museum of African Art** Director Johnnetta Betsch Cole discussed issues of race and the future of museums with acclaimed Princeton University philosopher Kwame Anthony Appiah.

Three staff of the **Smithsonian Institution Archives** received professional honors: Pamela Henson received the History of Science Society Joseph H. Hazen Education Prize, awarded annually in recognition of outstanding contributions to the teaching of the history of science; Nora Lockshin was awarded Professional Associate status in the American Institute for Conservation; and Effie Kapsalis was awarded the Smithsonian Secretary’s Innovative Spirit Award.

Cooper-Hewitt Director Bill Moggridge made a presentation on “Convergence and Complexity in Design” at a session at the World Knowledge Forum 2011 in Seoul, Korea.

Strengthening Collections

The **Hirshhorn** acquired a significant and beautiful piece, *Cube Light* (2008), by Chinese artist Ai Weiwei. In addition to his fame as an artist, Ai has become a major public figure as a result of his work as artistic consultant on the Beijing National Stadium for the 2008 Beijing Olympics and his outspoken social and political activism.

The **National Postal Museum** acquired (on long-term deposit from the U.S. Postal Service) the Postmaster General’s Collection, which consists of a stamp collection containing rare and unique items dating back to the mid-19th century and a collection of stamp art commissioned by the Postal Service. The collection is believed to contain more than 100,000 items.



Cube Light by Ai Weiwei

The collections of **National Museum of African American History and Culture** continue to grow with the addition of a variety of powerful artifacts. Acquisitions this quarter included two gifts from legendary rock 'n' roll pioneer Chuck Berry: a 1973 Cadillac Eldorado (driven during the filming of *Hail! Hail! Rock 'n' Roll*, a documentary on the singer-songwriter-guitarist) and a Gibson ES-350 guitar named "Maybellene." Other acquisitions included handwritten lyrics by Sly Stone of Sly and the Family Stone; the waitress costume worn in "Monster's Ball" by Halle Berry, the first African American woman to receive the Academy Award for Best Actress; an original life cast of pianist Eubie Blake's hand; and a dress worn by Lena Horne in the film *Stormy Weather*.



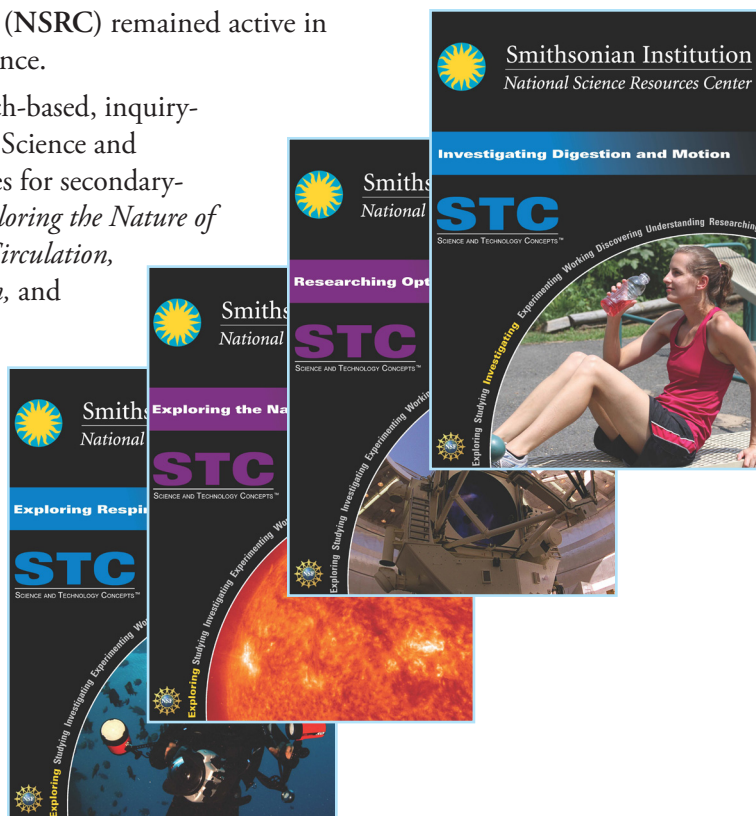
Chuck Berry Cadillac

Broadening Access: Education and Outreach

The Smithsonian hosted the annual Microsoft Partners in Learning Global Forum, a week-long program of workshops, networking events, awards, and presentations attended by more than 700 educators, education leaders, and government officials from more than 70 countries. At the event, Microsoft Partners in Learning announced the continuation of its partnership with the **Smithsonian Center for Education and Museum Studies** on the "Shout" global environmental education initiative.

The **National Science Resources Center (NSRC)** remained active in promoting reform in the teaching of science.

- The NSRC published four research-based, inquiry-centered instructional units in its Science and Technology Concepts (STC) series for secondary-school teachers and students: *Exploring the Nature of Light*, *Exploring Respiration and Circulation*, *Investigating Digestion and Motion*, and *Researching Optical Systems*.
- INNOVEC—an NSRC partner organization in Mexico—held its sixth international conference on improving science education. NSRC's Sally Goetz Shuler delivered a keynote address on implementing inquiry-based science education at the elementary level.
- NSRC kicked off year two of its Department of Education Investing in Education grant by distributing 746 Science and Technology Concepts kits to teachers in 65 schools in Texas, New Mexico, and North Carolina, and adding nine middle schools to the project.



Smithsonian Affiliations offers museums and other cultural and educational organizations access to the Institution’s collections and other resources. At the end of the first quarter of fiscal year 2012, there were 170 Affiliates in 40 states, Panama, and Puerto Rico, and 1,252 Smithsonian artifacts were on view at Affiliates. In this quarter:

- The Smithsonian welcomed one new Affiliate: The Mexican Museum (San Francisco, California).
- Fifteen Smithsonian staff participated in programs and events with Affiliates.
- Seven Smithsonian Institution Traveling Exhibition Service shows traveled to Affiliates.



Participants at SCEMS Teachers Night

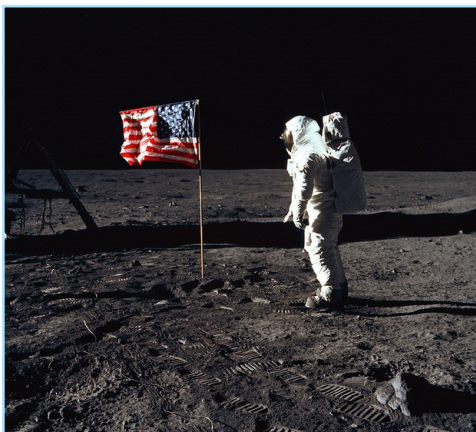
The **Smithsonian Center for Education and Museum Studies (SCEMS)** manages the Smithsonian content area on ePals—the world’s largest social learning network, with 700,000 teacher and school members worldwide. This quarter, SCEMS coordinated an ePals “Invention Challenge” with the **Lemelson Center of the National Museum of American History**, in which students were challenged to invent a new product to make their daily life more fun, efficient, or easy.

In this quarter, SCEMS also offered its annual Smithsonian Teachers’ Night, hosted this year by the **National Museum of the American Indian** and attended by approximately 2,000 educators from over 20 states. In addition to Smithsonian units, exhibitors included the U.S. Department of Education,

National Gallery of Art, National Park Service, Math Alive!, and ePals.

The **Smithsonian Institution Traveling Exhibition Service (SITES)** continued to sustain a high level of outreach activity. In the first quarter of fiscal year 2012, SITES circulated 46 exhibitions to 80 venues in 32 states and the District of Columbia, where they were viewed by approximately 1 million visitors.

Although SITES did not launch any new exhibitions this quarter, it finalized an agreement with Historic New England to sponsor a regional tour of the exhibition *The Way We Worked* starting in 2014, which will bring it to venues in all six New England states. This popular exhibition, which began statewide tours across Idaho and Missouri this quarter, is offered through SITES’s Museum on Main Street program.

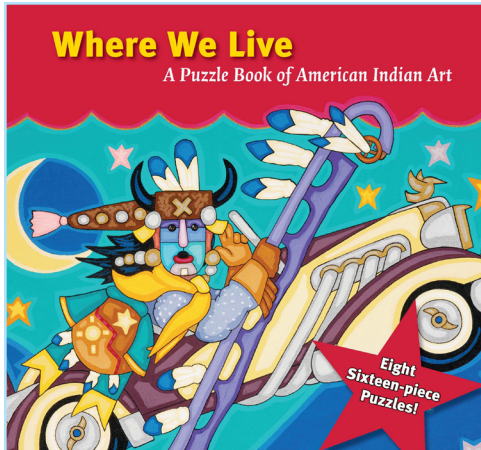


Claims of “faked” moon landings were among the tall tales examined in the online conference “Conspiracy Theories in Aerospace History.”

The **National Air and Space Museum** presented a live online conference on “Conspiracy Theories in Aerospace History: A Lesson in Critical Thinking for the Internet Age” for a global audience of secondary school teachers and students. It covered four topics clouded by conspiracy theories: the disappearance of Amelia Earhart, the Japanese attack on Pearl Harbor, UFOs, and the Apollo moon landing. Approximately 6,000 viewers from at least 41 states and 58 countries participated.

The **National Air and Space Museum** also hosted its 7th annual “Air and Scare” family event at the **Udvar-Hazy Center**, featuring “trick or treating” inside the Center and fun educational activities all around. Despite terrible weather, the Center hosted more than 20,000 visitors for the day.

The Publications Office of the **National Museum of the American Indian** released the innovative children’s book,



Where We Live: A Puzzle Book of American Indian Art. The book was produced as a part of the educational material development for the museum's New ImagiNations Activity Center.

The Smithsonian Associates' Discovery Theater has partnered with the National Air and Space Museum's Hilton Early Childhood Initiative to commission a new show and hands-on workshop series, "Amelia and Her Big Red Plane." The first installment of the series was an original puppet show for families and school groups, which told the story of how Amelia Earhart became the beloved first lady of American flight. Hands-on workshops based on the show followed.

National Museum of African American History and Culture

Director Lonnie Bunch gave a crew from C-SPAN's American History TV a tour of the museum's storage facility for a segment of the program *American Artifacts*. The half-hour program has subsequently aired more than a dozen times.

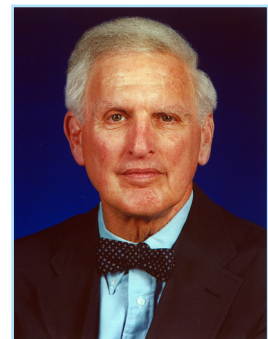
Organizational Excellence

The Smithsonian Institution was named one of the 10 best places to work in the Federal government by the non-profit Partnership for Public Service. This is the second year the Smithsonian participated in the survey; it was ranked fourth, the same ranking as last year.

A pan-institutional planning committee comprised of representatives from 20 units, including museums, cultural programs, the National Zoo, and Smithsonian Enterprises, produced a framework and vision for the Smithsonian in the areas of Latino history, art, culture, and related topics. The plan, "Enhancing Understanding of the U.S. Latino Experience," calls for the Smithsonian to build on current initiatives and expand the Institution's efforts in relevant areas of research, collections acquisitions, exhibitions, education, collaborations, and audience engagement.

Leadership

Former Secretary of the Smithsonian Ira Michael Heyman died in Berkeley, California, on November 19, 2011, at the age of 81. He served as Secretary from 1994 until 2000. A highlight of Secretary Heyman's tenure was the 150th anniversary celebration of the Smithsonian, which included the popular exhibition *America's Treasures* that traveled around the nation for more than a year and a huge celebration on the National Mall. Heyman also saw the potential for technology to expand the Smithsonian's reach, overseeing the creation of the Smithsonian's first website, www.si.edu. He initiated the **Smithsonian Affiliations** program to foster outreach, and established the **Smithsonian Latino Center** and **Asian Pacific American Program** to help make the Smithsonian more diverse.



Information Technology

The Digitization Program Office is working on a Smithsonian 3D Charter Collection. Units were asked to nominate iconic collection items and signature research projects for inclusion in a roster of 3D imaging efforts that represent the breadth of Smithsonian collections and scientific inquiry. Fifteen projects from 12 units have been identified; captures to date include the Gunboat *Philadelphia* at the **National Museum of American History**, the Wright Flyer at the **National Air and Space Museum**, the Cosmological Buddha at the **Freer and Sackler Galleries**, and the fossil whale site Cerro Ballena in Chile (a **National Museum of Natural History** research site).

The **Archives of American Art** launched an account on the online photo-sharing platform Pinterest. It shared more than 400 images from its collections to encourage the public to explore and “pin” captivating images from the Archives’ website.

The American Computer Museum awarded its 2011 Edward O. Wilson Biotechnology Pioneer Award to the creators of Leafsnap, the first mobile app for plant identification. Among the honorees was **National Museum of Natural History** botanist and Biodiversity Consortium head John Kress.

A partnership of eight organizations including the Smithsonian announced the release of the DMP (Data Management Plan) Tool, which offers web-based support for researchers creating data management plans for funders such as the National Science Foundation, Institute of Museum and Library Services, and private foundations. It will help Smithsonian researchers craft data management plans that meet funders’ expectations, and lay the foundation for making research data safe, discoverable, and usable by others.

A security assessment, resulting in formal security accreditation, was conducted for the first time for the Building Automation Systems supporting Mall facilities and the **National Zoo**. The Building Automation Systems are critical infrastructure control systems that manage air circulation, temperature, and humidity controls to protect collections, as well as the comfort of visitors and employees.

Major Construction, Renovation, and Facilities Projects

National Museum of African American History and Culture

\$500 million total estimated project cost

All design and construction milestones were met in 2011, and a construction management firm assisted with the coordination of design and construction issues for the February 2012 groundbreaking. The museum continues the concept phase of exhibit design with Ralph Appelbaum Associates. Total project costs are to be shared evenly, with \$250 million from Federal capital funds and \$250 million from non-Federal sources.



3D capture at the National Air and Space Museum . . .



. . . and at a National Museum of Natural History research site in Chile

National Zoological Park, General Services Building and North Road Retaining Wall

\$33.8 million total estimated project cost

The \$8.3 million Phase I of the project, funded over fiscal years 2004–2011, is complete. It includes immediate repairs to the General Services Building (GSB), design of permanent structural and safety upgrades, and relocation of the Vehicle Maintenance Branch to Suitland, Maryland. Phase II includes \$25.5 million for GSB construction and replacement of an adjacent retaining wall. A supplemental environmental assessment for the retaining wall began in May 2011 and was completed in March 2012. Federal funding has been requested for fiscal years 2012–2014 for construction of the retaining wall and GSB upgrades .

*National Zoological Park, Smithsonian Conservation Biology Institute,
Smithsonian-Mason Global Conservation Studies Partnership*

\$37.47 million total estimated project cost

Construction of the joint Smithsonian-Mason program facilities is well under way in Front Royal, Virginia. George Mason University is building residential and dining facilities funded through a \$20 million state bond, while the Smithsonian is renovating and expanding an existing building to house classrooms, laboratories, and faculty offices for a new education center. A single construction contract for the education center and concurrent utility upgrades was awarded in May 2011, and work was approximately 50 percent complete at the end of the first quarter of fiscal year 2012. The total cost of this work is \$15.6 million—\$10.6 million in Federal funds in fiscal years 2010–2012, and \$5 million in private funds. All facilities are projected to be complete for the start of the fall 2012 semester.



National Zoological Park, Asia Trail II: Elephant Trails

\$54.3 million estimated total project and program cost

The second phase of the Asia Trail project has a current budget of \$54.3 million—\$39.48 million Federal (received in fiscal years 2006–2012) and \$14.82 million Trust. Construction of the new elephant barn and two of three outdoor habitats was completed in 2010, and work on the elephant community center was 53 percent complete as of the end of calendar year 2011. Additional private funding is being sought for the final habitat, and the project is now scheduled to be finished in 2013.

National Zoological Park, Seal / Sea Lion Exhibit—The American Trail

\$40.6 million total estimated project cost

The Zoo’s Seal/Sea Lion exhibit is being revitalized to meet standards for animal care and to improve accessibility. The project also includes an upgrade of underground utilities in what was formerly called Beaver Valley. Construction is approximately 80 percent complete and is projected to be finished in mid-June 2012. Upon reopening this summer, the Zoo is renaming the valley area “The American Trail.” The non-capital, interpretive component of the project will be funded with more than \$1 million in Trust funds, while the Federal capital contribution is approximately \$39.6 million in fiscal years 2009–2012.

Arts and Industries Building (AIB)

\$52.8 million estimated cost for shell only

Construction on the AIB shell revitalization project (structural upgrades and replacement of the roof and windows) was 30 percent complete at the end of the first quarter of fiscal year 2012, and is expected to be finished by spring 2013. Major portions of the old roof have been removed, and new steel framing that replicates the appearance of the original iron trusses is being installed in the halls. Project funding consists of \$30 million from the Federal Legacy Fund, \$15 million from Federal facilities capital funds, and the rest from private gifts. Design scope and budget definition are under way for an adjoining underground services building shared with the Castle. Anticipated reductions in Federal appropriations, however, have pushed the funding for its construction into fiscal year 2014 or beyond.

National Postal Museum, New Program Space

\$18.2 million total estimated project cost

The National Postal Museum, located in the historic Washington, D.C., City Post Office Building, has been given 12,000 square feet of space and use of a central hall by the U.S. Postal Service. Using funds from non-Federal sources, this new space will be transformed into a philatelic center and a visitor orientation space. Design was completed in late summer 2011, with construction to start in 2012 and to be completed for a 2013 opening.

Smithsonian Tropical Research Institute, Gamboa Laboratory Facilities

\$23.4 million total estimated project cost

The Smithsonian Tropical Research Institute is building a new terrestrial science lab on its recently acquired Gamboa site to replace outdated facilities; the project is funded with \$19.94 million in Federal and \$3.46 million in Trust funds. At the end of the fiscal year, the notice to proceed with the construction contract was expected in early 2012, with completion in 2014.

Smithsonian Environmental Research Center, Mathias Replacement Laboratory Project

\$50.66 million total estimated project cost

The Smithsonian Environmental Research Center is eliminating trailers that house lab space and offices; renovating and reconfiguring the Mathias Lab; and creating replacement labs that meet national standards. The 95,000-square-foot project employs sustainable technologies and building materials that will yield substantial reductions in energy and maintenance costs. Following a groundbreaking ceremony in May 2011, construction began in June 2011 and is expected to be complete by mid-2014.



National Museum of Natural History, Main Building Ground Floor and Mezzanine

\$24.0 million total project cost

The entire north ground floor of the main Natural History Building is under renovation. The 15,500-square-foot west end of the floor will become a new education center, and the 27,600-square-foot east end will house an expanded Smithsonian Early Enrichment Center, renovated Smithsonian Institution Libraries facilities, a paleobiology laboratory, and a consolidated facility support operations center. The project was awarded for construction in December 2010, with completion planned for mid-2012.

National Museum of American History, Kenneth E. Behring Center

Revitalization of west wing public spaces, package III: \$71.9 million total project cost

The third phase of renovation at the National Museum of American History will focus on three west wing public spaces and the replacement of windows. Construction documents have been completed, with the solicitation for construction delayed six months until March 2012 due to a readjustment of fiscal year 2013 Federal funding. Construction will begin in fall 2012. The Federal appropriation for design and initial construction (\$24.5 million) was received in fiscal years 2009–2012, with the remainder (\$40.8 million) requested for fiscal years 2013 and 2014. An additional \$6.6 million is expected in private funding for exhibit space preparation and equipment.

Cooper-Hewitt, National Design Museum

\$59.9 million total estimated project cost

The renovation of the Fox-Miller townhouses was completed in summer 2011. Design for the Carnegie Mansion renovation was completed in April 2011, with a construction contract awarded near the end of fiscal year 2011. The contractor started demolition in March 2012, with construction scheduled to be complete by early 2014. Total project costs include \$27.3 million in Federal funds and \$32.6 million in private funds. Cooper-Hewitt hosted a celebration event to mark the opening of the Miller/Fox townhouses and the successful completion of its capital campaign.

Donald W. Reynolds Center for American Art and Portraiture

\$19.5 million total estimated project cost

The Smithsonian will complete the renovation of the Reynolds Center with the reconstruction of the F Street stairs and the addition of landscaping and security. Costs are estimated at \$9.5 million in Federal funds and \$10.0 million in Trust funds.

Museum Support Center of the National Museum of Natural History, Pod 3

\$38.5 million total estimated project cost

Renovations have been completed on Pod 3 in Suitland, Maryland, which provides consolidated storage space for several types of collections. Transfer of collections from four museums is under way and is expected to be complete by June 2012 at a cost of almost \$2 million.

Permanent Physical Security Barriers

\$55 million total project cost

Security barriers at the National Air and Space Museum, National Museum of American History, and National Museum of Natural History are now in place, with construction on the latter completed at the end of 2011. Design of barriers for the Castle and Quadrangle will start in fiscal year 2016, and work on off-Mall barriers will follow in order of priority.

Sustainability

Energy Savings Projects: Energy service companies (ESCOs) offer a unique way to implement energy conservation measures. ESCOs assume the front-end costs of conservation infrastructure, and receive their compensation out of clients' operational savings over time. In an era of tight budgets, this provides an effective way for the Smithsonian to meet its sustainability goals without large capital expenditures. An ESCO was selected to develop a comprehensive energy-saving plan for the Smithsonian's Suitland, Maryland, site, and is currently engaged in preliminary assessment. The assessment will concentrate on energy and water savings; the goals of the project are to reduce water and conventional energy use, increase renewable energy use, and revitalize facilities.

Alternative Fuels: The Smithsonian fleet has expanded its alternative fuels infrastructure by completing the installation of two electric vehicle charging stations, each of which can charge two vehicles simultaneously. Each station is networked and centrally monitored to manage vehicle data and electricity consumed. Once connected, each electric vehicle requires approximately five hours to fully charge. A compressed natural gas vehicle filling station capable of fueling three vehicles per hour also has been installed in the new central fleet maintenance facility. Natural gas offers a cleaner alternative to petroleum-based fuel and is an integral part of the Smithsonian's petroleum reduction initiatives.



Recycled Materials: In fiscal year 2011 the Smithsonian exceeded recycling expectations, with an average waste recycling rate of 25.4 percent—a huge improvement over the fiscal year 2010 figure of 17.6 percent and far above the Smithsonian's goal of 15 percent. All categories of recycling were up, but gains were particularly impressive for paper, comingled containers, scrap metal, and wood pallets. Composting is expected to be another area for potential gains within the next few years.



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