



Smithsonian

Fiscal Year 2020

Submitted to the Committees on Appropriations
Congress of the United States

Smithsonian Institution

Fiscal Year 2020

Budget Justification to Congress

March 2019

SMITHSONIAN INSTITUTION
Fiscal Year 2020 Budget Request to Congress
TABLE OF CONTENTS

INTRODUCTION

Overview	1
FY 2020 Budget Request Summary.....	7

SALARIES AND EXPENSES

Summary of FY 2020 Changes and Unit Detail.....	13
Fixed Costs	
Salary and Related Costs	16
Utilities, Rent, Communications, and Other	17
Summary of Program Changes.....	21
No-Year Funding.....	27
Object-Class Breakout	27
Federal Resource Summary by Performance Objective and Program Category	28

MUSEUMS AND RESEARCH CENTERS

Grand Challenges and Interdisciplinary Research.....	30
National Air and Space Museum	32
Smithsonian Astrophysical Observatory	39
Major Scientific Instrumentation.....	44
National Museum of Natural History	49
National Zoological Park.....	57
Smithsonian Environmental Research Center	66
Smithsonian Tropical Research Institute.....	70
Arthur M. Sackler Gallery/Freer Gallery of Art	78
Center for Folklife and Cultural Heritage.....	83
Cooper Hewitt, Smithsonian Design Museum.....	88
Hirshhorn Museum and Sculpture Garden.....	91
National Museum of African Art	97
Anacostia Community Museum	104
Archives of American Art	110
National Museum of African American History and Culture	114
National Museum of American History, Behring Center	124
National Museum of the American Indian	133
National Portrait Gallery.....	137
National Postal Museum.....	145
Smithsonian American Art Museum.....	149

MISSION ENABLING

Outreach	154
• <i>The Smithsonian Institution Traveling Exhibition Service; Smithsonian Affiliations; the Smithsonian Center for Learning and Digital Access; the Office of Fellowships and Internships; and the Smithsonian Institution Scholarly Press</i>	
Communications	159

Institution-wide Programs	162
• <i>Research Equipment Pool</i>	163
• <i>Information Resources Management Pool</i>	164
• <i>Latino Initiatives Pool</i>	164
• <i>Collections Care and Preservation Fund</i>	165
• <i>Asian Pacific American Initiative Pool</i>	167
• <i>American Women’s History Initiative</i>	168
Smithsonian Exhibits.....	171
Museum Support Center.....	174
Museum Conservation Institute	176
Smithsonian Libraries and Archives.....	181
Office of the Chief Information Officer.....	186
Administration	189
• <i>The offices of the Secretary; the Provost/Under Secretary for Museums and Research/Provost; the Chief Operating Officer/Under Secretary for Finance and Administration; and the central activities of diversity, human resources, financial/contract management, and legal services.</i>	
Office of the Inspector General	194
Facilities Maintenance	196
Facilities Operations, Security, and Support	200

FACILITIES CAPITAL

Overview	203
Summary Tables	206
Revitalization Projects	208
National Air and Space Museum	208
Steven F. Udvar-Hazy Center	211
National Zoological Park.....	212
National Museum of Natural History	216
National Museum of American History.....	218
Hirshhorn Museum and Sculpture Garden.....	219
Quadrangle.....	221
Donald W. Reynolds Center	222
Smithsonian Institution Building (Castle).....	223
Smithsonian Tropical Research Institute.....	224
Smithsonian Astrophysical Observatory	225
Suitland Collections Center.....	226
Freer Gallery of Art	228
Fire-Alarm Panel Replacements/Upgrade Security Notification	229
Multiple Location Revitalization Projects.....	230
Facilities Planning and Design	231

APPENDIX

Organization Chart.....	233
Visitation Chart.....	234
Trust Funds Summary.....	235
Appropriation Language and Citations	237
Inspector General Management Response.....	245
Adjustments to FY 2019 Funding	250

THE SMITHSONIAN INSTITUTION'S IMPACT ON AMERICA

The Smithsonian greatly appreciates the continued support of the Administration, the Congress, and the American people, and takes seriously the crucial role it plays in advancing the civic, educational, scientific, and artistic life of this nation. As a public trust, the Smithsonian addresses some of the world's most complex issues and uses ever-evolving technologies to broaden access to information for citizens, researchers, students, and policy makers.

Thanks to the generous bequest of English scientist James Smithson, Congress established the Smithsonian Institution in 1846 as an independent federal trust instrumentality, a unique public-private partnership that has proven its value as a cultural and scientific resource for 173 years. The federal commitment provides the foundation for all we do, and in attracting private support. We leverage our federal funding to enrich the lives of the American people and advance "the increase and diffusion of knowledge."

In pursuit of this mission, the Smithsonian is a world leader in research and discovery, addressing today's relevant issues and helping the American people understand the world through the arts and humanities. We use cutting-edge technology to create unprecedented access to our treasures and inspire educators, students, and learners of all ages.

This year we are starting to implement our new Strategic Plan. It will help us be more responsive to the expectations of our visitors and audiences. The plan sets forth the following goals to: be a more unified Institution; spark new conversations and address complex challenges; reach one billion people a year with a "digital first" strategy; better understand and make an impact on 21st-century audiences; drive large, visionary, interdisciplinary research and scholarly projects; preserve our natural and cultural heritage while optimizing our assets; and provide a nimble, cost-effective, and responsive administrative infrastructure to enable us to accomplish all of those goals. We also continue to improve facilities maintenance and collections care to be even better stewards of America's treasures and seek out new federal, state, and local partners to expand our reach.

Our vision for the Strategic Plan is that, by 2022, we will build on our unique strengths to engage and inspire more people where they are, with greater impact, while catalyzing critical conversations on important issues affecting our nation and the world.

The Smithsonian is large and complex, encompassing art, history, science, education, and culture. We have 19 museums, 21 libraries, nine research centers, the National Zoo, and 214 Affiliates in 45 states, Puerto Rico, and Panama. We are also open every day of the year, except Christmas Day. We have research and education facilities in eight states and the District of Columbia, and are involved in research in more than 145 countries. In fiscal year (FY) 2018, our museums had almost 29 million visits, and another 4.5 million people visited our traveling exhibitions. In addition, the magazines *Smithsonian* and *Air and Space* have a combined readership of more than seven million people. The Smithsonian Channel is distributed by all of the top cable service providers and is available in more than 38 million households nationwide.

Our collections total 155 million objects, including 145 million scientific specimens, 340,000 works of art, and more than two million library volumes. We also care for 162,000 cubic feet of archival material, 16,000 musical instruments, and more than 2,000 live animals. We have the Star-Spangled Banner; Samuel Morse's telegraph; Thomas Edison's light bulb; the Hope Diamond; the Wright Flyer; one of Amelia Earhart's planes; Louis Armstrong's trumpet; labor leader Cesar Chavez's jacket; the Lansdowne portrait of George Washington; the Congressional Gold Medal awarded to Japanese American World War II veterans; the *Spirit of Tuskegee* airplane; the camera John Glenn used on his pioneering voyage into space; a wide array of Asian, African, and American art; the Apollo 11 command module, *Columbia*; and the space shuttle *Discovery*. We hold these objects in trust for the American people and preserve these priceless national treasures for future generations to enjoy.

In FY 2018, our visitors enjoyed approximately 100 new exhibitions, including: *A Right to the City* at the Anacostia Community Museum; *Americans* at the National Museum of the American Indian; *Taíno: Native Heritage and Identity in the Caribbean* at the George Gustav Heye Center; *Mark Bradford: Pickett's Charge* at the Hirshhorn Museum and Sculpture Garden; *Encountering the Buddha: Art and Practice Across Asia* at the Arthur M. Sackler Gallery; *One Year: 1968, An American Odyssey* at the National Portrait Gallery; *Visionary: Viewpoints on Africa's Arts* at the National Museum of African Art; *Alexander Hamilton: Soldier, Secretary, Icon* at the National Postal Museum; *2001: A Space Odyssey Immersive Art Exhibit* at the National Air and Space Museum; *Outbreak: Epidemics in a Connected World* at the National Museum of Natural History; *Electric Fishes Demonstration Lab* at the National Zoo; *Iridescence* at Cooper Hewitt, Smithsonian Design Museum; *Diane Arbus: A Box of Ten Photographs* at the Smithsonian American Art Museum; *No Spectators: The Art of Burning Man* at the Renwick Gallery; *Pushing the Envelope: Mail Art from the Archives of American Art* at the Archives of American Art; *The American Revolution: A World War* at the National Museum of American History; and *Watching Oprah: The Oprah Winfrey Show and American Culture* at the National Museum of African American History and Culture.

One of the key goals of our Strategic Plan is to become "One Smithsonian," which means to work more collaboratively, efficiently, and effectively to extend our reach and relevance, and have a more profound impact on our increasingly diverse audience. We implemented several Institution-wide projects in 2018 and 2019 to further that goal. The Smithsonian's American Women's Initiative began a five-year, pan-Institutional celebration of the 100th anniversary of women's suffrage in America. Our Solstice Saturday event on the first Saturday of summer featured free parties, programs, and performances, and extended hours until midnight throughout our museums, research centers, and the National Zoo. On Earth Day in April, we began the One Smithsonian Plastics Reduction Initiative to reduce the Smithsonian's use of plastics and increase our recycling of plastic waste. We also established the Smithsonian Accessibility Innovations Fund Awards to encourage creativity and innovation that promotes accessibility to the Institution as a whole. In 2019, we will celebrate the Year of Music by exploring opportunities to reach audiences across Washington, DC and the rest of the country while building bridges throughout the Institution and fulfilling our goal of being One Smithsonian.

Another key facet of our Strategic Plan is digital technology, which allows us to reach new, diverse audiences more than ever before. In FY 2018, our websites attracted more than 160 million unique visitors. In social media, we currently have more than 12 million followers on Facebook and Twitter alone, with tens of thousands more engaging with us on other Internet platforms. Our *Sidedoor* podcast debuted in October of 2016, featuring behind-the-scenes stories from the Smithsonian's museums, research centers, and world-renowned experts. The podcast, now in its third season, has reached people in all 50 states and more than 146 countries, with more than three million downloads to date.

For years, we have been digitizing our objects, specimens, archival materials, and library books to make them more accessible to the public. So far, our museums and libraries have created digital images for 3.4 million objects, specimens and books, and electronic records for more than 31 million artifacts and items in the national collections. Our archives have created 3.9 million digital images, and now have electronic records and metadata for close to 120,000 cubic feet of archival material. More than 10,000 digital initiative volunteers have transcribed more than 340,000 pages of data for our Transcription Center. Furthermore, we have implemented rapid-capture digitization, a conveyor-belt technology to accelerate the digitization of our collections. We reached another milestone when the Smithsonian's Digitization Program Office (DPO) worked with the National Museum of Natural History's Department of Botany to digitize and transcribe the Museum's one-millionth botanical specimen.

Thanks to the work of our DPO, we are now leaders in the field of 3D scanning, allowing people to see our treasures and specimens in a new light. Users can connect with our collection of 3D-digitized Smithsonian objects available online, creating replicas of Smithsonian objects via 3D printers for scientific research or use in the classroom. The digitization team's new 3D collection website features updated content and functionality, with the most recent advance allowing viewers to interact with Smithsonian collection objects, using Virtual Reality applications. The team is also automating the 3D scanning pipeline so that hundreds of objects may be scanned in mere weeks.

Another way we accomplish the "diffusion of knowledge" is with myriad educational offerings that serve millions of people annually from preschoolers to senior citizens. For instance, the Smithsonian Science Education Center publishes K–8 STEM curriculum materials that 1,500 school districts, representing all 50 states and 25 countries, have adopted. The Smithsonian Learning Lab website created by the Smithsonian Center for Learning and Digital Access offers teachers and students free digital access to more than one million resources from across the Smithsonian. Smithsonian Affiliate museums host speakers, traveling exhibitions, and webinars, bringing educational offerings into many communities across the country. In FY 2018, the Smithsonian Institution Traveling Exhibition Service (SITES) took large and small exhibitions to regional museums and provided educational materials to schools and libraries. In all, SITES sent exhibitions to museums and provided educational materials to schools and libraries in all 50 states, the District of Columbia, and overseas, and reached an audience of 4.5 million people. In FY 2018, poster exhibitions were sent to 3,811 schools, museums, and libraries. We are also working with administrators in the Nation's Capital to provide educational materials to all Washington, DC K–12 public school students.

We have many education, learning, and discovery spaces in our museums and research centers. The Institution also serves the public appetite for education through the National Museum of American History's *Object Project*, a 4,000-square-foot space in the Museum's Innovation Wing, the National Museum of Natural History's *Q?rius*, our 10,000-square-foot science education center for teenagers, and the National Air and Space Museum's various education spaces that are integrated into exhibits. In May of 2018, the National Museum of the American Indian's George Gustav Heye Center opened its imagiNATIONS Activity Center. In addition, we continue to connect with young learners through the Hirshhorn Museum and Sculpture Garden's *ARTLAB+* program for teens and Cooper Hewitt's Smithsonian Design Center in New York City's Harlem neighborhood. Smithsonian Affiliates also hosts Spark!Lab to provide Smithsonian educational experiences through hands-on invention centers developed by the National Museum of American History.

However, given the Institution's high profile and popularity, the Smithsonian's facilities require constant care and maintenance to enable us to serve our visitors. Our next major facilities capital project will be the renovation of the National Air and Space Museum building on the National Mall. The 750,000-square-foot building, which opened in 1976, hosts approximately seven million visitors each year and has welcomed more than 330 million people in the past 40 years, far exceeding its original projections. Smithsonian Facilities staff teams have spent the past three years planning for and overseeing the design of this massive project, which will be the first major overhaul of the building's infrastructure. This work is necessary to ensure that the building can continue to handle its large number of visitors and provide a suitable environment for the nation's priceless artifacts of aviation and space flight.

The Smithsonian continues to take collections stewardship very seriously. Our collections are a vital national asset, and we are always improving storage conditions and balancing the preservation of and access to these collections. The collections we maintain are a valuable resource for scientists from federal agencies such as the Departments of Agriculture and Defense, and the United States Geological Survey. We work with the White House's Office of Science and Technology Policy to coordinate our efforts with federal agencies and avoid duplication of activities. Today, we still use collections acquired a century or more ago to address the effects of global change, the spread of invasive species, and the loss of biological diversity and its impact on interconnected ecosystems. Federal, state, and local authorities often look to our collections for answers to questions about flu epidemics, oil spills, volcanic eruptions, and aircraft downed by bird strikes.

As an ambassador of goodwill and a research partner, we are involved in research in more than 145 countries by coordinating with strategic allies across the federal Government and working with foreign governments and the private sector. Through our Office of International Relations and our science, art, history, culture, and education units, we work with virtually every Cabinet-level federal agency and numerous other organizations.

Another goal of our Strategic Plan is to catalyze new conversations and address complex challenges. Because we combine world-class museums, cutting-edge research, and accessible educational programs, the Smithsonian is uniquely qualified to address a range of relevant topics. That is why we strive to serve and be recognized as a leading

advocate for dialogue on global and national issues. We are implementing this goal through a series of conversations with thought leaders, which are posted on our website called Smithsonian Second Opinion at www.smithsoniansecondopinion.org. Thus far, we have examined three topics: immigration, earth optimism, and the arts.

In addition, we leverage our strengths with our strategic national and international partners for a combined greater impact. For example, our international efforts are increasingly directed toward cultural heritage protection. These and other Smithsonian projects foster international collaboration and bring together governments, foundations, and the world's leading thinkers and scientists. We bridge cultural and scientific disciplines and borders, whether rescuing art from the rubble of damaged galleries and museums, helping to save endangered species, or inspiring tomorrow's artists, scientists, and leaders in all disciplines. Beyond the walls of our buildings, our teams are making discoveries, preserving the past, and sharing insights with audiences of all ages. By working with our partners around the world, we amplify our impact. Cross-disciplinary collaboration gets results and produces a shared legacy of progress and discovery.

With our worldwide reach, the Institution is particularly well connected to study biodiversity issues. The Smithsonian's ForestGEO (Global Earth Observatories) network is a worldwide partnership of more than 95 institutions working to monitor the health of six million trees (including nearly 13,000 different species) on 63 plots in 27 countries. Our follow-up initiative, Tennenbaum Marine Observatories, or MarineGEO, replicates this success by assessing the health of coastal areas and the oceans at large to determine how to manage these important resources. Six new sites are scheduled to be added to this network in 2019, which will bring the total to 15 active MarineGEO sites.

Smithsonian scientists also work around the world to help save endangered, vulnerable, and threatened species, such as: Asian elephants; Panamanian golden frogs; African kori bustards; Asian tigers; Przewalski's horse; the African scimitar-horned oryx; coral reefs; North American black-footed ferrets; Cuban crocodiles; Asian clouded leopards; and giant pandas.

Elsewhere, in today's world of long-distance travel and new technologies, deadly viruses can reach around the globe in 24 hours, and nearly 75 percent of emerging pathogens in humans come from animals. With that in mind, the Smithsonian is a founding partner in the USAID-funded Emerging Pandemic Threats Program, which helps public health officials avoid the next major pandemic. Veterinary scientists and pathologists from the National Zoo and the Smithsonian Conservation Biology Institute are conducting regional wildlife pathology workshops to train biologists and conservationists to recognize, identify and stop the next global health threat in its initial stages. Toward that end, our scientists recently discovered a new coronavirus in a species of bat in Myanmar. The team will share this information with the government of Myanmar to help develop policies and strategies for lowering the risk of viral transmission from wildlife to humans.

The Smithsonian's 500 staff scientists also tackle other vital issues of the day, make important discoveries, and share them with the public. For example, scientists at the Harvard-based Smithsonian Astrophysical Observatory (SAO) continue to explore the universe's boundless mysteries, from carbon-based planets capable of supporting life to a

planet forming in an Earth-like orbit around a young star light-years away from our own solar system. The Giant Magellan Telescope, or GMT, that is being built at the Las Campanas Observatory in Chile, is one such exciting project. It promises to change the way we see and understand the universe. Its array of seven huge mirrors, each one twice the length of an automobile, will work in tandem to produce images 10 times sharper than those created by the Hubble Telescope. Another example of the ingenuity of SAO researchers is the Solar Probe Cup, an instrument SAO designed and NASA launched as part of the Parker Solar Probe spacecraft, which will expand our understanding of the sun.

In addition, the National Museum of Natural History (NMNH) is the leading partner in a global effort called the *Encyclopedia of Life* (EOL), an ambitious project to build and maintain a key repository of scientific information about virtually every form of life on Earth. EOL is an online database with more than 5.5 million pages, and more than 90,000 people use it for their work. Its financial, logistical, and research support comes from numerous partners, including the MacArthur and Sloan Foundations.

The NMNH also houses the Consortium for the Barcode of Life, an international initiative to develop DNA barcoding as a global standard for identifying biological species. This technique uses a short DNA sequence from a standardized position in the genome as a molecular diagnostic marker for species identification. As the U.S. leader in DNA barcoding, the Smithsonian seeks to increase its research and training capacity to better work with strategic partners in expanding the frontiers of knowledge in this exciting field.

We do all this thanks to more than 6,800 dedicated employees — award-winning scientists and scholars, curators, researchers, historians, and experts in fields from astrophysics to zoology — and more than 6,900 generous, on-site volunteers, nearly 800 research Fellows, nearly 1,300 research associates, and more than 1,700 interns and 11,000 digital initiative volunteers: brain power that benefits the Smithsonian and the world many times over. Because of their level of commitment, the Smithsonian was, for the ninth year in a row, ranked as one of the best places to work in the federal Government.

Building on our rich legacy, with the continuing support of Congress, the Administration, our Board of Regents, and the American people, we will offer even more opportunities to enlighten and engage the public. Today, with our many museums, distinguished research and scholars, iconic American treasures, and vast array of information from our websites, the Smithsonian remains a valuable resource for the American people and the world. As such, with this FY 2020 budget request, the Smithsonian will continue to harness its resources to serve as an investment in the future and a steward of our past.

SMITHSONIAN INSTITUTION FY 2020 BUDGET REQUEST SUMMARY

Account	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Request
Salaries and Expenses	\$731,444,000	\$739,994,000	\$759,345,000
Facilities Capital	<u>\$311,903,000</u>	<u>\$303,503,000</u>	<u>\$219,000,000</u>
Total	\$1,043,347,000	\$1,043,497,000	\$978,345,000

For fiscal year (FY) 2020, the Smithsonian’s request to fund operating expenses and revitalization of the Institution’s physical infrastructure is **\$978.3 million**. The total amount includes **\$759.3 million** for Salaries and Expenses (S&E) and **\$219.0 million** for the Facilities Capital account. A detailed summary of the changes requested is provided in the table at the end of this section.

SALARIES AND EXPENSES

FIXED COSTS INCREASES

- **Salaries and Related Costs (\$0)** — This request accounts for the decrease in Workers’ Compensation (-\$216,000) and reapplies those savings to partially fund locally hired employees at the Smithsonian Tropical Research Institute in Panama (+\$216,000).
- **Non-pay Fixed Items (+\$4,077,000)** — The Institution requests additional funding, largely for inflation-related increases in rent, software licenses, and other operating costs. Details are provided in the S&E section of this budget submission.

PROGRAM INCREASES

ENHANCED INTERDISCIPLINARY RESEARCH

- **Research Equipment Pool (+\$300,000)** — The Institution requests an increase (+\$300,000) to the Research Equipment Pool to support the Smithsonian’s ambitious research agenda. This basic equipment infrastructure requires regular maintenance, upgrades, and routine replacement. With the current allocation, the Institution cannot effectively address the many research needs throughout the scientific community. Research Equipment Pool funds have enabled Smithsonian museums and research centers to undertake groundbreaking research in numerous areas, such as with DNA sequencers and mass spectrometers.

EXPAND DIGITAL TECHNOLOGIES

- **Digitization (+\$1,550,000)** — The Smithsonian continues work on its Strategic Plan to use new technologies to share its vast collections and extensive research, along with the expertise of its scholars, scientists, researchers, museum specialists, and curators. The Institution has invested in creating a standard mass-digitization process that enables replicable, cost-effective, high-throughput projects, resulting in high-quality digitization for all priority collections. This request supports the Smithsonian's Digitization Strategic Plan to stimulate learning and innovation. Digitizing the national collections and making them accessible online are major Strategic Plan priorities.

There are also many research projects around the Institution which generate enormous amount of data. The proper storage, management, publishing and curation of this valuable data require significant technical infrastructure and full-time staff support to ensure its long-term access and preservation. The positions to be filled will form a distributed team of research technology professionals to provide a base level of information technology (IT) support to Institution-wide research projects. This is necessary because massive data storage and access requirements, driven by research mandates, require increased staffing to support first-class research at the Institution.

UNDERSTAND AND IMPACT 21st CENTURY AUDIENCES

- **Asia Pacific American Initiatives Pool and Latino Center (+\$400,000)** — The Institution requests an increase (+\$200,000) to the Asia Pacific American Initiatives Pool (APAIP). Since it began in 2016, APAIP has funded 33 projects in 15 units with its original \$400,000 annual federal appropriation. Each year, the pool has seen an increasing number of high-quality proposals that have now grown beyond its capacity for funding.

The Institution requests an increase (+\$200,000) for the Smithsonian Latino Center (SLC) to begin operation of the Smithsonian Latino Gallery (SLG) at the National Museum of American History beginning calendar 2021 as the first space at the Smithsonian dedicated to the Latino experience. SLC has completed an interpretive master plan, preliminary schematic design, audience research, exhibition content outlines, and is nearing completion of visual identity and branding consultancy for SLC and SLG.

PRESERVE OUR NATURAL AND CULTURAL HERITAGE

- **Animal Welfare (+\$500,000)** — Funding is requested for the National Zoological Park's Smithsonian Conservation Biology Institute (SCBI, in Front Royal, Virginia) breeding facility. SCBI is world-renowned for its heroic efforts to research, breed, and reintroduce some of the world's most critically endangered

species into the wild. The National Zoo must strategically augment staffing with contract support to successfully achieve its vital mission of saving species from extinction.

- **Facilities Maintenance (+\$5,000,000)** — The Smithsonian requests an increase of \$5.0 million to enable its maintenance program to continue stabilizing and standardizing the overall condition of its facilities. The increase will enable the Institution to address the significant maintenance backlog and meet the minimum standards for annual maintenance budgets as endorsed by the Government Accountability Office and the National Research Council. This increase also provides some additional preventive maintenance and building system reliability to ensure that proper environmental conditions are maintained for the national collections and that public expectations are met.
- **Security (+\$5,500,000)** — The Institution requests an increase of approximately \$5.5 million to address critical security needs. As the physical footprint of the Smithsonian has increased and facilities are revitalized, the Institution's security and law-enforcement needs have also grown. This has caused a steady degradation in the security base budget. Additionally, recent increases in violent shooter attacks in the United States have highlighted the need to improve the Smithsonian's ability to respond quickly to these types of incidents. Consequently, the Institution requests an increase for existing unfunded security positions and additional contract security officers to continue full-time magnetometer screening and bag searches, and to provide additional security in galleries and other public spaces.

ENABLE COST-EFFECTIVE AND RESPONSIVE ADMINISTRATION

- **Information Technology (IT) Security (+\$400,000)** — This funding request supports enhancing the maturity of the IT security program which is independently evaluated annually by the Smithsonian's Office of the Inspector General. This request includes funds to support improvements in our Information Security Continuous Monitoring and Incident Response capabilities of the security program to more rapidly detect and respond to incidents as well as emerging vulnerabilities and threats. The funding will also support addressing audit recommendations to bring the Smithsonian Astrophysical Observatory's network and technology environment into our continuous monitoring program.
- **Internal Controls (+\$1,624,000)** — This request funds 10 essential positions required to provide the necessary support Institution-wide, especially related to internal controls to prevent waste, fraud, and abuse in areas that they oversee. These positions are in the Office of the Inspector General (3 FTEs); Office of the General Counsel (1 FTE); the Office of Human Resources (3 FTEs); Office of Equal Employment and Minority Affairs (1 FTE); and the Office of Contracting and Personal Property Management (2 FTEs).

FACILITIES CAPITAL PROGRAM

The request for the Facilities Capital Program (**\$219,000,000**) is essential to arrest the deterioration of some of the Smithsonian's oldest and most visited buildings and maintain the current condition of other facilities through systematic renewal and repair. This amount will allow the Facilities Capital Program to address all of the priority one projects that are ready to be fixed in FY 2020.

For FY 2020, the requested funds will enable the Institution to continue the major renovation project at the National Air and Space Museum (NASM, at \$100.0 million). The request will also continue major revitalization work at the National Museum of Natural History (\$1.5 million); the National Zoological Park (\$25.0 million); and the National Museum of American History (\$3.0 million). In addition, these funds will allow the Smithsonian to perform essential revitalization work at the NASM Steven F. Udvar-Hazy Center (\$18.4 million); Hirshhorn Museum and Sculpture Garden (\$8.5 million); Quadrangle (\$2.0 million); Donald W. Reynolds Center (\$3.5 million); Smithsonian Institution Building (Castle, at \$1.0 million); Smithsonian Tropical Research Institute (\$1.7 million); Smithsonian Astrophysical Observatory (\$0.8 million); Suitland Collections Center (\$5.5 million); Freer Gallery of Art (\$2.0 million); and fire-alarm replacement (\$2.0 million). The request also provides for important revitalization projects throughout the Institution, program support, and projects costing under \$1 million each (\$14.5 million). Furthermore, this request accounts for planning and design of future projects (\$29.6 million), including at the Castle and the Arts and Industries Building (\$16.0 million). Details are provided in the Facilities Capital section of this budget request.

**SMITHSONIAN INSTITUTION
FY 2020 BUDGET SUMMARY
BY APPROPRIATION ACCOUNT**

SALARIES AND EXPENSES	FTEs	Amount
FY 2019 Enacted	4,232	\$739,994,000
<u>FIXED COSTS INCREASES</u>		4,077,000
Salaries and Related Costs	0	0
Utilities, Rent, Communications, and Other	0	4,077,000
<u>PROGRAM INCREASES</u>		
Enhanced Interdisciplinary Research	0	300,000
Research Equipment Pool	0	300,000
Expand Digital Technologies	6	1,550,000
Digitization Support	6	1,550,000
Understand and Impact 21st Century Audiences	2	400,000
Asia Pacific American Initiative Pool and Latino Center	2	400,000
Preserve Our Natural and Cultural Heritage	9	11,000,000
Animal Welfare	0	500,000
Facilities Maintenance	9	5,000,000
Security	0	5,500,000
Enable Cost-Effective and Responsive Administration	12	2,024,000
Information Technology Security	2	400,000
Internal Controls	10	1,624,000
Total FY 2020 Salaries and Expenses	4,261	\$759,345,000

**SMITHSONIAN INSTITUTION
FY 2020 BUDGET SUMMARY
BY APPROPRIATION ACCOUNT**

FACILITIES CAPITAL	FTEs	Amount
FTEs in Base	48	
Revitalization		
National Air and Space Museum		100,000,000
Steven F. Udvar-Hazy Center		18,400,000
National Zoological Park		25,000,000
National Museum of Natural History		1,500,000
National Museum of American History		3,000,000
Hirshhorn Museum and Sculpture Garden		8,500,000
Quadrangle		2,000,000
Donald W. Reynolds Center		3,500,000
Smithsonian Institution Building (Castle)		1,000,000
Smithsonian Tropical Research Institute		1,700,000
Smithsonian Astrophysical Observatory		800,000
Suitland Collections Center		5,500,000
Freer Gallery of Art		2,000,000
Fire-Alarm Panel Replacements		2,000,000
Multiple Location Revitalization Projects		14,500,000
Facilities Planning and Design		29,600,000
Total FY 2020 Facilities Capital	48	\$219,000,000
FY 2020 REQUEST, ALL ACCOUNTS	4,309	\$978,345,000

**SMITHSONIAN INSTITUTION
SALARIES AND EXPENSES (S&E)
FY 2020 Congressional Request**

	FTEs	Amount
FY 2019 Enacted	4,232	\$739,994,000
Fixed Costs Increases		
Salaries and Related Costs	0	0
Utilities, Postage, Rent, Communications, and Other	0	<u>4,077,000</u>
Total Fixed Costs Increases		4,077,000
Program Increases		
Enhanced Interdisciplinary Research	0	300,000
Research Equipment Pool	0	300,000
Expand Digital Technologies	6	1,550,000
Digitization Support	6	1,550,000
Understand and Impact 21st Century Audiences	2	400,000
Asia Pacific American Pool and Latino Center	2	400,000
Preserve Our Natural and Cultural Heritage	9	11,000,000
Animal Welfare	0	500,000
Facilities Maintenance	9	5,000,000
Security	0	5,500,000
Enable Cost-Effective and Responsive Administration	12	2,024,000
Information Technology Security	2	400,000
Internal Controls	<u>10</u>	<u>1,624,000</u>
Total Program Increases	29	15,274,000
Total Increases	29	19,351,000
Total FY 2020 Salaries and Expenses	4,261	\$759,345,000

SMITHSONIAN INSTITUTION
Salaries and Expenses
Unit Detail of the FY 2018 Enacted, FY 2019 Estimate, and FY 2020 Request
(\$s in Thousands)

Page #	FTE = Full-Time Equivalent	FY 2018		FY 2019		FY 2020		ANALYSIS OF CHANGE						
		Enacted		Estimate		Request		(FY 2020 Increases)						
		FTEs	\$000	FTEs	\$000	FTEs	\$000	Pav & Benefits	Rent & Utilities	Fixed Other	Program Change	\$000		
	MUSEUMS AND RESEARCH CENTERS													
	32 National Air and Space Museum	151	20,110	151	20,110	151	20,110	0	0	0	0	0	0	0
	39 Smithsonian Astrophysical Observatory	99	24,593	99	24,593	99	24,745	0	152	0	0	0	0	0
	<i>Rent Increase</i>								152					
	44 Major Scientific Instrumentation	0	4,118	0	4,118	0	4,118	0	0	0	0	0	0	0
	30 Universe Consortium	1	184	1	184	1	184	0	0	0	0	0	0	0
	49 National Museum of Natural History	335	49,789	335	49,789	335	49,789	0	0	0	0	0	0	0
	57 National Zoological Park	208	27,566	208	27,566	208	28,066	0	0	0	0	0	500	500
	<i>Animal Welfare</i>												500	500
	66 Smithsonian Environmental Research Center	32	4,227	32	4,227	34	4,487	0	0	0	2	260	260	260
	<i>Digitization Support</i>										2	260	260	260
	70 Smithsonian Tropical Research Institute	191	14,486	191	14,486	191	14,702	216	0	0	0	0	0	0
	<i>STRI Compensation</i>							216						
	30 Biodiversity Consortium	3	1,543	3	1,543	3	1,543	0	0	0	0	0	0	0
	78 Arthur M. Sackler Gallery/Freer Gallery of Art	45	6,273	45	6,273	45	6,273	0	0	0	0	0	0	0
	83 Center for Folklife and Cultural Heritage	17	3,084	17	3,184	17	3,484	0	0	300	0	0	0	0
	<i>Festival Costs</i>									300				
	88 Cooper Hewitt, Smithsonian Design Museum	36	5,061	36	5,086	36	5,086	0	0	0	0	0	0	0
	91 Hirshhorn Museum and Sculpture Garden	37	4,534	37	4,544	37	4,544	0	0	0	0	0	0	0
	97 National Museum of African Art	28	4,654	28	4,654	31	5,054	0	0	0	3	400	400	400
	<i>Digitization Support</i>										3	400	400	400
	30 World Culture Consortium	2	792	2	792	2	792	0	0	0	0	0	0	0
	104 Anacostia Community Museum	19	2,405	19	2,405	19	2,405	0	0	0	0	0	0	0
	110 Archives of American Art	17	1,933	17	1,933	17	1,933	0	0	0	0	0	0	0
	114 National Museum of African American History & Culture	145	33,079	141	32,617	141	32,617	0	0	0	0	0	0	0
	<i>FY 2019 adjustment: see page 250 (to Libraries: -\$462K)</i>													
	124 National Museum of American History, Behring Center	164	25,373	164	25,373	165	25,583	0	0	0	1	210	210	210
	<i>Digitization Support</i>										1	210	210	210
	133 National Museum of the American Indian	216	32,671	216	33,648	216	33,648	0	0	0	0	0	0	0
	<i>FY 2019 adjustment: see page 250 (from Security: +\$406K)</i>													
	137 National Portrait Gallery	56	6,556	56	6,556	56	6,736	0	0	0	0	180	180	180
	<i>Digitization Support</i>										0	180	180	180
	145 National Postal Museum	6	1,131	6	1,581	6	1,581	0	0	0	0	0	0	0
	<i>FY 2019 adjustment: see page 250 (from Facilities: +\$250K)</i>													
	149 Smithsonian American Art Museum	89	10,239	89	10,389	89	10,389	0	0	0	0	0	0	0
	<i>FY 2019 adjustment: see page 250 (from Admin: +\$150K)</i>													
	30 American Experience Consortium	4	550	4	600	4	600	0	0	0	0	0	0	0
	Total for Museums and Research Centers	1,901	284,951	1,897	286,251	1,903	288,469	216	152	300	6	1,550	1,550	1,550

SMITHSONIAN INSTITUTION
Salaries and Expenses
Unit Detail of the FY 2018 Enacted, FY 2019 Estimate, and FY 2020 Request
(\$s in Thousands)

Page #	FTE = Full-Time Equivalent	FY 2018 Enacted						FY 2019 Estimate						FY 2020 Request						ANALYSIS OF CHANGE (FY 2020 Increases)				
		FTEs		\$000		FTEs		\$000		FTEs		\$000		FTEs		\$000		Pav & Benefits	Rent & Utilities	Fixed Other	Program Change			
		\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	FTEs	\$000			
		MISSION ENABLING																						
		Program Support and Outreach																						
154	Outreach	64	9,333	64	9,333	64	9,333	0	0	0	0	0	0	0	0	0	0	0	0	0				
159	Communications	23	2,839	23	2,839	23	2,839	0	0	0	0	0	0	0	0	0	0	0	0	0				
162	Institution-wide Programs	0	16,784	0	16,784	0	17,784	0	0	0	0	0	0	0	0	0	0	0	0	1,000				
	<i>Research Equipment Pool</i>																			0	300			
	<i>Information Resource Management Pool</i>																			0	500			
	<i>Asia Pacific American Initiatives Pool</i>																			0	200			
171	Smithsonian Exhibits	28	3,169	28	3,169	28	3,169	0	0	0	0	0	0	0	0	0	0	0	0	0				
174	Museum Support Center	18	1,906	18	1,906	18	1,906	0	0	0	0	0	0	0	0	0	0	0	0	0				
176	Museum Conservation Institute	22	3,359	22	3,359	22	3,359	0	0	0	0	0	0	0	0	0	0	0	0	0				
181	Smithsonian Institution Archives	20	2,423	20	2,423	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
181	Smithsonian Libraries	86	11,273	90	11,835	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	<i>FY 2019 adjustment: see page 250 (from NMAAHC:+\$462K)</i>																							
181	Smithsonian Libraries and Archives					110	14,458	0	0	200	0	0	0	0	0	0	0	0	0	0				
	<i>Library Subscription Inflation</i>									200														
	Subtotal, Program Support and Outreach	261	51,086	265	51,648	265	52,848	0	0	200	0	0	200	0	1,000									
186	Office of the Chief Information Officer	95	52,009	95	52,509	97	55,409	0	0	2,500	2	400												
	<i>Communications</i>									2,500														
	<i>IT Security</i>											2	400											
189	Administration	182	36,234	182	36,255	191	37,324	(216)	0	0	9	1,285												
	<i>FY 2019 adjustment: see page 250 (to SAAM: -\$150K)</i>																							
	<i>Workers Compensation</i>																							
	<i>Latino Center</i>																			2	200			
	<i>Internal Controls</i>																			7	1,085			
194	Office of the Inspector General	24	3,538	24	3,538	27	4,077	0	0	0	3	539												
	<i>Internal Controls</i>																			3	539			
		Facilities Services																						
196	Facilities Maintenance	401	77,045	408	79,545	417	84,545	0	0	0	9	5,000												
	<i>Facilities Maintenance</i>																			9	5,000			
200	Facilities Operations, Security, and Support	1,361	226,581	1,361	230,248	1,361	236,673	0	925	0	0	5,500												
	<i>FY 2019 adjustment: see page 250 (to NMAI: -\$406)</i>																							
	<i>FY 2019 adjustment: see page 250 (to Postal: -\$250)</i>																							
	<i>Security</i>																			0	5,500			
	<i>Rent</i>																							
	<i>Utilities</i>																							
	Subtotal, Facilities Services	1,762	303,626	1,769	309,793	1,778	321,218	0	925	0	9	10,500												
	Total for Mission Enabling	2,324	446,493	2,335	453,743	2,358	470,876	(216)	925	2,700	23	13,724												
	GRAND TOTAL, SMITHSONIAN INSTITUTION	4,225	731,444	4,232	739,994	4,261	759,345	0	1,077	3,000	29	15,274												

SALARIES AND EXPENSES

FY 2018 Enacted	\$731,444,000
FY 2019 Enacted	\$739,994,000
FY 2020 Request	\$759,345,000

For fiscal year (FY) 2020, the Institution requests **\$759.3 million** in the Salaries and Expenses (S&E) account. Within the total increase requested, approximately 21 percent is attributable to fixed costs for sustaining base operations (e.g., rent, communications, and other costs), and the remainder is for priority requirements throughout the Institution.

FIXED COSTS

SALARY AND PAY-RELATED COSTS (\$0) — This budget request reflects a decrease in Workers' Compensation costs and supports the higher pay requirements for the Smithsonian Tropical Research Institute's (STRI) locally hired Panama employees in accordance with Panamanian Law. The following is a line-item display of the funds requested.

- **Workers' Compensation (-\$216,000)** — This supports the provisions of Section 8147(b) of Title 5, *United States Code*. The Workers' Compensation bill for FY 2020 is **\$2,975,000**, based on a Department of Labor invoice for costs incurred from July 1, 2017 through June 30, 2018. This represents a decrease of \$216,000 from the FY 2019 Workers' Compensation costs (\$3,191,000).
- **Panamanian Pay (+\$216,000)** — U.S. and Panamanian laws require a payroll system governed by the labor laws of Panama for locally hired employees. The compensation policy for locally hired employees at STRI, which was instituted in 2000, has not kept pace with the remarkable growth of Panama's economy. To provide an equitable compensation system for locally hired Panamanian employees, and enable STRI to compete in the local labor market, the Smithsonian adopted the U.S. Department of State employment standards and practices used by U.S. Embassies around the world. The requested increase (+\$216,000) will partially cover the mandatory costs to support the increased pay for the Panamanian local workforce, and provide equitable salaries and benefits for the locally hired employees, which are comparable to those at the local U.S. Embassy in Panama.

UTILITIES, POSTAGE, RENT, COMMUNICATIONS, AND OTHER FIXED COSTS (+\$4,077,000) — For FY 2020, the Institution requests an increase of \$4,077,000 for utilities, postage, rent, communications, and other fixed-cost accounts, as detailed in the chart below. The requested increase reflects consumption and rate changes in the utilities accounts, inflationary increases, and program needs in rent accounts. In addition, the increases for Communications and Other Support are requested to provide for fixed software licensing and maintenance costs, inflationary increases for library subscriptions, and to meet compliance requirements.

The following table displays the estimates for FYs 2019 and 2020. The details that follow address the specific changes affecting the FY 2020 accounts.

**Federal Utilities, Postage, Rent, Communications, and
Other Fixed Costs
FYs 2019–2020
(Dollars in Thousands)**

	FY 2019 Estimate	FY 2020 Estimate	Change
Utilities:			
Electricity	21,585	20,857	-728
Chilled Water	3,083	3,083	0
Steam	8,607	8,560	-47
Natural Gas	3,132	3,118	-14
DC Gov't Water/Sewer	5,855	5,888	33
Other Water and Fuel Oil	<u>1,255</u>	<u>1,236</u>	<u>-19</u>
Subtotal, Utilities	43,517	42,742	-775
Postage	1,461	1,461	0
Motor Fuel	370	370	0
Rental Space:			
Central	41,530	43,230	1,700
Unit	<u>5,890</u>	<u>6,042</u>	<u>152</u>
Subtotal, Rent	47,420	49,272	1,852
Communications	19,374	21,874	2,500
Other Support	3,420	3,920	500
Total	\$115,562	\$119,639	\$4,077

UTILITIES (-\$775,000) — Justified here, but included in the Facilities Operations, Security, and Support line item, are requested changes to cover the costs of energy and water. The request includes the following:

- **Electricity (-\$728,000)** — Electricity is used to operate the Smithsonian's large infrastructure. The major use of electricity is for air-conditioning that provides essential climate control to protect the priceless national collections as well as ensure the comfort of visitors and staff. The request covers anticipated contract cost increases in FY 2020 for Energy Savings Performance Contracts (ESPCs) (+\$38,000) and a downward adjustment for lower-than-projected rate increases in FY 2018 (-\$678,000). The request also accounts for the delay in opening the new Museum Support Center Pod 6 (-\$50,000). In addition, there are increased reimbursements due to the reopening of the National Museum of Natural History's (NMNH) Atrium and West Court Cafes (-\$38,000).
- **Chilled Water (\$0)** — Chilled water costs represent actual chilled water usage supplied by the General Services Administration's (GSA) central plant to the Smithsonian's south Mall facilities. No increases are anticipated for FY 2020.
- **Steam (-\$47,000)** — The Smithsonian uses steam for heating and humidification, and to produce hot water for facilities on the Mall and in New York City. The increase covers escalation as stipulated in ESPCs (+\$46,000) and a net increase in reimbursements projected (\$-93,000), mainly due to the reopening of the Atrium and West Court Cafes at the NMNH.
- **Natural Gas (-\$14,000)** — The Smithsonian uses natural gas and propane for heating and generating steam. The request covers cost increases for rates and usage in FY 2020 (+\$14,000). The request also funds increased reimbursements, including the reopening of the NMNH's Atrium Cafe and West Court Cafes (-\$28,000).
- **DC Water and Sewer (+\$33,000)** — Funds cover the costs of both water and sewer services provided by the District of Columbia Water and Sewer Authority (DCWSA). The net increase includes rate and billing adjustments transmitted by DCWSA to the Smithsonian in April of 2018 (+\$183,000), as well as anticipated increased reimbursements in FY 2020 due to higher rates and the reopening of the NMNH's Atrium and West Court Cafes (-\$150,000).
- **Other Water and Fuel Oil (-\$19,000)** — Funds provide water service for facilities outside of Washington, DC, and fuel oil used in dual-fuel boilers and generators for emergency power. The request covers anticipated cost increases (of +2.6 percent) in FY 2020 for current services for all accounts (+\$21,000) and a 4.4-percent payment escalation in the Suitland, Maryland ESPC (+\$9,000). The request also includes lower-than-projected usage and price decreases (-\$49,000).

POSTAGE (\$0) — Funds provide for all official domestic and international mail services. No increases are requested for postage in FY 2020.

MOTOR FUEL (\$0) — Funds provide motor fuel that powers the Smithsonian's motor vehicle fleet and scientific research vessels. No increases are requested for motor fuel in FY 2020.

RENTAL SPACE (+\$1,852,000) — Funds provide for the long-term rental of office, collections and warehouse storage, and laboratory space. For FY 2020, the Smithsonian requests an increase of \$1,852,000 for centrally funded lease requirements and for unit-funded, programmatic lease requirements, as follows:

- **Central Rent (+\$1,700,000)** — Justified here, but included in the Facilities Operations, Security, and Support line item, are increases needed to support leased office and storage space, as follows:

Escalation (+\$1,700,000) — This request funds annual rent increases in accordance with the terms of current lease contracts and lease-related services. Among the contracts, the annual escalation rate for base rent averages three percent, and operating and real-estate taxes are each projected to increase at four percent above FY 2019 estimates.

- **Unit Rent (+\$152,000)** — Justified here, but included in the following museums' line items, are unit-funded rent increases needed to support Smithsonian programs. The increases are as follows:

Smithsonian Astrophysical Observatory (+\$152,000) — This request is a must-fund increase for the Atomic and Molecular Physics laboratory space (+\$77,000) and for escalation costs for current federal leased space (+\$75,000).

COMMUNICATIONS (+\$2,500,000) — The communications base supports the operations of the Institution's voice and data telecommunications infrastructure. The requested increase covers the higher cost of software and hardware maintenance fees for existing investments, and the expansion of central storage and backup systems used to house, manage, and protect the rapidly growing number of digitized collections assets. The Institution requests an increase to the base budget for these increases when they come due in FY 2020.

These systems include the Enterprise Resource Planning (ERP) financial management system; RedHat/Linux enterprise platforms; business analytics software; a software distribution system for Macs; SharePoint administration; an employee safety system; the Institution's Facilities Management system; Wi-Fi maintenance; and the personnel records management system. The requested increases will enable systems to stay current and cover rising annual maintenance and operating costs, cover the costs of the upgraded Internet2 connection that allows the exchange of large datasets with external collaborators and sharing of

high-resolution images and 3D models, and covers the annual recurring cost for a network connection to the Smithsonian Tropical Research Institute laboratories in Panama, many of which are difficult to physically access.

OTHER SUPPORT (+\$500,000) — An additional \$500,000 is requested to offset the effects of inflation and to cover other fixed costs. The Smithsonian Libraries requires additional funding to adequately address inflationary increases in library subscriptions (+\$200,000). This increase will enable the Libraries to cover the extraordinary inflation costs of purchasing journals and electronic databases, which are essential to support the Institution's many research programs and scientists.

In addition, the Institution requests an increase (+\$300,000) to support the Smithsonian Folklife Festival's compliance with National Park Service regulations in its management of the turf on the National Mall, which strictly limit how the Festival can use both the turf and tree panels on this federal property.

SUMMARY OF FY 2020 S&E PROGRAM INCREASES

	FY 2019 Base	FY 2020 Program Increase (\$000s)	FY 2020 FTE Increase
Enhanced Interdisciplinary Research	94,435	+300	+0
• Research Equipment Pool	1,200	+300	0
Expand Digital Technologies	15,511	+1,550	+6
• Digitization Support	15,511	+1,550	+6
Understand and Impact 21st Century Audiences	101,782	+400	+2
• Asia Pacific American Initiative Pool	400	+200	0
• Latino Center	592	+200	+2
Preserve Our Natural and Cultural Heritage	390,872	+11,000	+9
• National Zoo — Animal Welfare	27,566	+500	0
• Facilities Maintenance	79,545	+5,000	+9
• Security	80,413	+5,500	0
Enable Cost-Effective and Responsive Administration	137,394	+2,024	+12
• Information Technology Security	44,601	+400	+2
• Management Operations (Internal Controls)	92,793	+1,624	+10
Total S&E Program Increases	739,994	+\$15,274	+29

Note: For a complete list of program categories, see page 29.

ENHANCED INTERDISCIPLINARY RESEARCH

Institution-wide, Research Equipment Pool — Base: (\$1,200,000); FY 2020 Increase: (+\$300,000)

The Institution requests an increase (+\$300,000) to the Research Equipment Pool. The Smithsonian’s ambitious research agenda requires appropriate equipment to achieve its goal of Excellent Interdisciplinary Research. This basic equipment infrastructure requires regular maintenance, upgrades, and routine replacement. With the current allocation, the Institution cannot effectively address the many research needs throughout the Smithsonian community. Research Equipment Pool funds have enabled Smithsonian museums and research centers to undertake groundbreaking research in numerous areas. For example, genomics is offering scientists new opportunities for exploring biodiversity. To be successful, biodiversity genomics requires a set of cutting-edge genetic technologies such as next-generation sequencing (NGS). Similarly, the Institution’s efforts in materials conservation have been greatly enhanced by using highly specialized equipment to enable conservators to better identify the age and provenance of artifacts as well as improve the preservation of fragile materials. Continuing to invest in additional equipment and supporting the maintenance contracts will allow the Smithsonian to leverage its collections and expertise in these important areas of research.

EXPAND DIGITAL TECHNOLOGIES

Digitization Support — Base: (\$15,511,000); FY 2020 Increase: (+\$1,550,000, +6 FTEs)

The Smithsonian has implemented the first-ever Institution-wide digitization strategic plan that includes the framework of digitization policies; made assessments to account for the state and progress of digitization; and clarified digitization priorities to guide resource allocation and planning. The Digital Assessment showed that the Smithsonian has prioritized 14.8 million objects for digitization and completed digitization of 3.4 million objects (or 23.0 percent) of this task to date. In accordance with Smithsonian Directive (SD) 610, Digitization and Digital Asset Management Policy, Smithsonian units have articulated their implementation of Institution-wide priorities in unit digitization plans (UDPs) and created foundational digital asset management plans to ensure that the Smithsonian can effectively manage digital content for scientific studies.

In addition, the Smithsonian has strategically invested in creating a standard mass-digitization process that enables replicable, cost-effective, high-throughput projects, and high-quality digitization for all Smithsonian priority collections. Digitization efforts to implement this process have resulted in digital images for more than 400,000 collection objects, doubling the rate of digitization at the Smithsonian. This budget request will accelerate the Institution's digitization progress by turning more time-limited, mass-digitization prototypes into production projects and finishing the digitization of entire collections.

The Institution has many research projects that generate enormous amount of data, including the eMammal project that will enable conservation decisions on the ground and the Marine Global Earth Observatory (MarineGEO), by collecting data about our coastal ecosystems that can provide policy makers with the sound science to support innovative solutions and help manage and protect our oceans. The proper storage, management, publishing and curation of this valuable data require significant technical infrastructure and full-time staff support to ensure its long-term access and preservation. Funding will support postdoctoral students in the research units, who, along with data managers, will work with researchers to adopt new practices and skills for the proper collection and curation of research data. The positions will provide a distributed team of research technology professionals to provide a base level of IT support for Institution-wide research projects. Massive data storage and access requirements, driven by research mandates, require increased staffing to support first-class research at the Institution.

Units will compete for resources in an *Institution-wide*, digitization pool (\$500,000), with the highest priority projects receiving the necessary funds. In addition, funds are requested (+\$1,050,000 and +6 FTEs) for the following units to support the overall digitization efforts of the Institution. These units include the National Museum of African Art (+3 FTEs); National Museum of American History (+1 FTE); Smithsonian Environmental Research Center (+2 FTEs); and the National Portrait Gallery.

UNDERSTAND AND IMPACT 21st CENTURY AUDIENCES

Institution-wide, Asia Pacific American Initiatives Pool — Base: (\$400,000); FY 2020 Increase (+\$200,000)

The Institution requests an increase (+\$200,000) to the Asia Pacific American Initiatives Pool (APAIP) to \$600,000 annually. Since its inception in 2016, the APAIP has funded 33 projects in 15 units with its original \$400,000 annual federal appropriation. Each year, the pool has received more high-quality proposals than it can afford to fund. In FY 2019, the APAIP received more than \$600,000 in requests and, as a result, many projects received only partial funding and some important requests were not funded at all. By increasing the amount of funds available, the APAIP can continue to expand the Asian Pacific American presence in the Smithsonian's presentation of and research into the American experience. With additional funding, the number of APAIP-supported curatorial positions can be increased, and more projects can be developed.

Latino Center — Base: (\$592,000); FY 2020 Increase (+\$200,000)

The Institution also requests an increase (+\$200,000 and +2 FTEs) to support the Smithsonian Latino Center (SLC), specifically at the National Museum of American History (NMAH). The SLC plans to launch a Smithsonian Latino Gallery (SLG) at NMAH beginning in calendar year 2021, as the first space at the Smithsonian dedicated to the Latino experience. The SLC has completed an interpretive master plan, preliminary schematic design, audience research, exhibition content outlines, and is nearing completion of visual identity and branding consultancy for the Latino Gallery. A private naming gift has been secured and the proposed gallery will operate for a minimum of 10 years at the NMAH. The requested positions will play foundational roles in exhibition development and production, and digital immersion, outreach, and correlative educational programs.

PRESERVE OUR NATURAL AND CULTURAL HERITAGE

Animal Welfare — Base: (\$27,566,000); FY 2020 Increase: (+\$500,000)

The National Zoological Park (NZIP) is requesting a funding increase (+\$500,000) to provide the needed resources for the NZIP's Smithsonian Conservation Biology Institute (SCBI, in Front Royal, Virginia) breeding facility. SCBI is world-renowned for its heroic efforts to research, breed and reintroduce some of the world's most critically endangered species into the wild, including Przewalski's horse, the golden-lion tamarin, black-footed ferret, scimitar-horned oryx, and red-crowned cranes, among others. Federal and state regulations require intensive animal quarantining and screening procedures to prevent disease transmission. Increased disease threats, such as highly pathogenic avian influenza, require additional contract support to respond to new requirements and maintain a viable collection. In addition to the live collection, NZIP/SCBI has a growing biological materials collection, and the requested resources will enable the Institution to continue managing that important collection.

Facilities Maintenance — Base: (\$79,545,000); FY 2020 Increase: (+\$5,000,000, +9 FTEs)

For FY 2020, the Smithsonian requests an increase of \$5.0 million and 9 FTEs to enable its maintenance program to continue the work of stabilizing and standardizing the overall condition of Institution facilities. The long-term, well-documented goal is to maintain Smithsonian facilities at the Leadership in Educational Facilities, or APPA, top rating of Level 1. Progress toward that goal has been made in recent years. With the resources requested in the FY 2020 budget, the Smithsonian will operate at a solid APPA maintenance rating of Level 3 (out of 5), “Managed Care.”

The National Research Council (NRC) recommends an annual maintenance budget in the range of 2 to 4 percent of a physical plant’s aggregate current replacement value (CRV) to avoid adding to a deferred maintenance backlog. The CRV for the Smithsonian is currently at \$8.45 billion, including the National Museum of African American History and Culture. With this requested increase, the Institution’s maintenance budget would be at \$84.5 million, which is still below the NRC’s recommended level.

The Smithsonian’s maintenance requirements have also been validated through the Facility Condition Assessment process and Reliability Centered Maintenance (RCM) analysis. This increase provides some additional preventive maintenance and building system reliability to ensure that proper environmental conditions are maintained for the national collections and that public expectations are met. Additionally, this increase will enable the Institution to begin closing the gap on deferred maintenance and repairs on life-safety systems; elevators and escalators; environmental control and heating, ventilation, and air-conditioning systems; plumbing infrastructure; roofing systems; and miles of fencing. It will enable the Institution to address lead abatement throughout the Smithsonian’s aging facilities.

At present, the Smithsonian is having trouble properly caring for the nation’s treasures. For example, the Smithsonian Institution Building (The Castle), National Museum of Natural History, and National Museum of American History have all suffered numerous water leaks in the past due to the failing plumbing infrastructure and their lack of resources to maintain or replace corroding pipes. With the funds requested, the Institution can prevent these catastrophic pipe failures and resulting water damage to collections and facilities.

Security — Base: (\$80,413,000); FY 2020 Increase: (+\$5,500,000)

As the physical footprint of the Smithsonian has increased and as facilities are revitalized, the Institution’s security and law-enforcement needs have also grown. Additionally, recent increases in violent shooter attacks in the United States have highlighted the need to improve the Smithsonian’s ability to respond quickly to these types of potential incidents. To evaluate the effectiveness of existing security

resources versus the current requirements, the Smithsonian conducted a security staffing analysis for each of its major facilities. The facility analyses confirmed that the Smithsonian needs to fill its currently unfunded security positions and add contract staff to provide a higher level of security around building perimeters, including visitor screening, and in interior public spaces such as galleries.

Consequently, the Institution requests \$5,500,000 for existing unfunded security positions and for additional contract security officers to allow the Smithsonian to continue full-time magnetometer screening and bag searches, and to provide additional security in galleries and other public spaces. These actions will address needs at the Smithsonian's highest risk facilities, which are the National Museum of American History, the National Museum of Natural History, the National Air and Space Museum, the National Museum of African American History and Culture, and the National Museum of the American Indian. Together, these museums accounted for more than 18.7 million visitors in FY 2018 alone.

ENABLE COST-EFFECTIVE AND RESPONSIVE ADMINISTRATION

Information Technology (IT) Security — Base: (\$44,601,000); FY 2020 Increase: (+\$400,000, +2 FTEs)

The Institution's security program is independently assessed on an annual basis by the Smithsonian's Office of the Inspector General (OIG) using the National Institute of Technology and Science cybersecurity framework. Based on our internal assessments and supported by recommendations from the OIG, additional efforts are required to mature our ability to detect, respond, and recover from emerging vulnerabilities and reach a level of maturity required to achieve what the Department of Homeland Security defines as an "effective" security program.

This funding request (\$400,000 and 2 FTEs) supports improvements in our Information Security Continuous Monitoring and Incident Response capabilities of the security program to more rapidly detect and respond to incidents as well as emerging vulnerabilities and threats. The funding will also support addressing audit recommendations to bring the Smithsonian Astrophysical Observatory's network and technology environment into our continuous monitoring program.

Internal Controls — Base: (\$92,793,000); FY 2020 Increase (+\$1,624,000, +10 FTEs)

- **Contracting Support (+\$292,000, +2 FTEs)** — This funding request supports an Inspector General recommendation to increase strategic assistance to the Office of Contracting's customers and to provide the Office's customers with technical advisory assistance, especially on complex acquisitions. The request will also fund a contract to analyze the Smithsonian's procurement spending patterns to help make determinations for strategic sourcing of goods/commodities. The Institution will rely on this thorough analysis of procurement spending data to leverage purchasing and negotiate better supplier

agreements, which will result in the best value for goods and services required by units.

- **Office of the General Counsel Support (+\$200,000, +1 FTE)** — The Office of the General Counsel requests an additional FTE to address the Smithsonian's current need for advice, representation, and education to support internal controls, and to manage the increasing requirements in the areas of cybersecurity, privacy, risk management, ethics, international activities, complex business transactions, and litigation.
- **Diversity Support (+\$140,000, +1 FTE)** — Diversity is one of the expressed values in the Smithsonian Strategic Plan. The Office of Equal Employment and Minority Affairs' (OEEMA) Supplier Diversity Program (SDP) advocates for the use of small disadvantaged businesses in the Smithsonian's procurement and contracting operations. The Institution is requesting permanent funding for an SDP specialist. This position will assist with administrative duties and in advocating for unit managers to achieve their SDP goals.
- **Inspector General Support (+\$539,000, +3 FTEs)** — During the past 20 years, the OIG share of funding has decreased in proportion to the growth of the overall Smithsonian Institution budget. The result of this funding erosion is a long-standing backlog in both audit and investigative work. The increased resources will address the additional risks the Smithsonian faces as it undergoes significant expansion with additional museums, fundraising activities, greater reliance on contractors, and an increasing dependence on information technology. The requested resources will support the Smithsonian goal of providing a nimble, cost-effective, and responsive administrative infrastructure. The OIG will be able to investigate allegations of wrongdoing in a timely manner, review and make recommendations for improvements to the Smithsonian's programs and operations, and identify funds that could be put to better use.
- **Human Resources Support (+\$453,000, +3 FTEs)** — This request supports Human Resources (HR) staff required to facilitate internal and external strategic change; adequately address hiring timeliness goals; provide quality, timely advice and service to Smithsonian units; minimize risks; and improve the response time for answering requests for guidance or information. This request supports an IT specialist to prepare analytical data and reports for senior management and serve as a liaison to the Office of the Chief Information Officer to support the management of HR systems. The request also provides a lead HR recruitment specialist to provide strategic planning to senior leadership and minimize hiring delays. In addition, this request provides an HR specialist to implement and administer the Workplace Violence Prevention Program and facilitate various Smithsonian-wide initiatives aimed at preventing violence through training.

NO-YEAR FUNDING — The following table provides the FY 2019 and FY 2020 Salaries and Expenses requests for No-Year Funding.

No-Year Funding Request
(Dollars in Thousands)

Salaries and Expenses	FY 2019 Estimate	FY 2020 Request	Change from FY 2019
No-Year Funds			
National Museum of Natural History			
Exhibition Reinstallation	954	954	0
Repatriation Program	1,401	1,401	0
Major Scientific Instrumentation	4,118	4,118	0
Collections Acquisition	435	435	0
Total, No-Year Funds	\$6,908	\$6,908	0

OBJECT-CLASS FUNDING — The following table provides an object-class breakout of resources for the Salaries and Expenses account.

Object-Class Request
(Dollars in Millions)

Salaries and Expenses	FY 2019 Estimate	FY 2020 Request	Change from FY 2019
Salaries and Benefits	448	452	+4
Travel and Transportation	7	7	0
Rent, Utilities, Communications, and Other	104	105	+1
Other Services	137	150	+13
Supplies and Materials	22	23	+1
Equipment	19	19	0
Land and Structures	3	3	0
Total, Object-Class Funds	\$740	\$759	+\$19

FEDERAL RESOURCE SUMMARY BY PERFORMANCE OBJECTIVE AND PROGRAM CATEGORY

The Smithsonian has developed its FY 2020 budget request by reviewing all resources and identified increases or decreases, in relation to the Institution's performance plan and overall Strategic Plan.

The Institution's program performance goals and objectives are aligned with the program categories used in the federal budget and the Institution's financial accounting system. This enables the Institution to more clearly demonstrate the relationship between dollars budgeted and results achieved.

The table below summarizes the request by program category and details the pay increases and program changes. The table on the following page summarizes the Institution's FY 2019 and FY 2020 estimates and the proposed changes by strategic goal, performance objective, and program category.

FY 2020 Congressional Budget Federal Resources by Program Category (\$s in 000s)

Federal Resources by Performance Objective and Program Category												
Salaries and Expenses (\$s in thousands)												
Performance Objective/ Program Category	FY 2019		FY 2020		Change		Pay	Rent/ Utilities	Other Fixed	Program Increase	Program Realign	Total Change
	FTEs	\$000	FTEs	\$000	FTEs	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Enhanced Research	569	94,205	569	94,788	0	593	152	0	200	300	-59	593
Expand Digital Technologies	84	15,515	91	17,375	7	1,860	3	0	100	1,750	7	1,860
Impact 21st Century Audiences	710	101,909	712	102,493	2	584	11	0	300	200	73	584
Preserve Our Cultural Heritage	2,285	390,494	2,294	402,568	9	12,064	2	1,077	0	11,000	-15	12,064
<i>Collections</i>	446	69,675	446	70,157	0	482				500	-18	482
<i>Facilities and Safety</i>	690	160,861	690	161,943	0	1,082	2	1,077			3	1,082
<i>Professional maintenance program</i>	408	79,545	417	84,545	9	5,000				5,000	0	5,000
<i>Security</i>	741	80,413	741	85,923	0	5,500	0			5,500	0	5,500
Enable Responsive Administration	584	137,871	595	142,121	11	4,250	-168	0	2,400	2,024	-6	4,250
<i>Management Operations</i>	483	93,094	494	94,819	11	1,725	-175			1,924	-24	1,725
<i>Information Technology</i>	101	44,777	101	47,302	0	2,525	7		2,400	100	18	2,525
Total	4,232	739,994	4,261	759,345	29	19,351	0	1,077	3,000	15,274	0	19,351

Federal Resources by Performance Objective and Program Category						
Salaries and Expenses (\$s in thousands)						
Performance Objective and Program Category	FY 2019		FY 2020		Change	
	FTEs	\$000	FTEs	\$000	FTEs	\$000
Enhanced Interdisciplinary Research	569	94,205	569	94,798	0	593
Research						
Engage in impactful scientific research and discovery	430	70,558	430	71,059	0	501
Engage in vital arts and humanities research	139	23,647	139	23,739	0	92
Expand Digital Technologies	84	15,515	91	17,375	7	1,860
Digitization and Web Support						
Provide improved digitization and Web support	84	15,515	91	17,375	7	1,860
Understand and Impact 21st Century Audiences	710	101,909	712	102,493	2	584
Public Programs						
Provide relevant reference services and disseminate information to the public	128	20,869	129	21,136	1	267
Exhibitions						
Offer compelling, first-class exhibitions	424	60,454	426	60,798	2	344
Education						
Engage and inspire diverse audiences	158	20,586	157	20,559	-1	-27
Preserve Our Natural and Cultural Heritage	2,285	390,494	2,294	402,558	9	12,064
Collections						
Improve the stewardship of the national collections	446	69,675	446	70,157	0	482
Facilities and Safety						
Improve Smithsonian facilities operations and provide a safe and healthy environment	690	160,861	690	161,943	0	1,082
Deliver an aggressive and professional maintenance program	408	79,545	417	84,545	9	5,000
Security						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	741	80,413	741	85,913	0	5,500
Enable Cost-Effective and Responsive Administration	584	137,871	595	142,121	11	4,250
Management Operations						
Enable efficient and responsive administrative infrastructure	483	93,094	494	94,819	11	1,725
Information Technology						
Improve the Institution's information technology systems and infrastructure	101	44,777	101	47,302	0	2,525
Total	4,232	739,994	4,261	759,345	29	19,351

GRAND CHALLENGES AND INTERDISCIPLINARY RESEARCH

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	10	3,102	0	0	0	0	0	0
FY 2019 ESTIMATE	10	3,119	0	0	0	0	0	0
FY 2020 REQUEST	10	3,119	0	0	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in impactful scientific research and discovery	4	1,727	4	1,727	0	0
Engage in vital arts and humanities research	2	792	2	792	0	0
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	4	600	4	600	0	0
Total	10	3,119	10	3,119	0	0

BACKGROUND AND CONTEXT

The Smithsonian's five Grand Challenges provide an overarching framework for Smithsonian programs and operations. Meeting these challenges will enable the Institution to integrate the work of many disciplines within the Smithsonian museums and cultural and research centers, as well as broaden our external collaborations. The challenges are grounded in research and emphasize complementary education and outreach programs; together, they influence how the Smithsonian directs its resources and focuses its energies. The Smithsonian has developed and implemented a Grand Challenges Awards initiative to advance cross-disciplinary, integrated scholarly efforts across the Institution that relate to one or more of the Grand Challenges. Using a competitive internal process, the Smithsonian is distributing externally raised funds designated for the purpose of advancing research, broadening access, revitalizing education, and encouraging new ways of thinking that involve emerging technology. The funding may also help to leverage additional resources, both internal and external, thereby amplifying the scope and breadth of cross-cutting research initiatives. Funds are distributed through existing

Smithsonian units with subject-matter expertise to make the most of the actual expenditures in the areas being supported.

The Grand Challenges are:

- *Unlocking the Mysteries of the Universe*
- *Understanding and Sustaining a Biodiverse Planet*
- *Valuing World Cultures*
- *Understanding the American Experience*
- *Magnifying the Transformative Power of Arts and Design*

Although there are no specific units primarily associated with these Grand Challenges, all Smithsonian museums, research centers, and offices will look for opportunities to integrate the goals and objectives of these challenges into their activities and programs, as appropriate, by:

- serving as a laboratory of ideas, research, and artistic practice;
- advancing the power, breadth, and vitality of artistic creativity for the inspiration and benefit of all;
- protecting and preserving cultural memory embodied in works of art; and
- promoting the importance of the arts and design in the public sphere.

The FY 2020 budget request includes no increase. Below is a summary of the FY 2020 Grand Challenges budget.

Grand Challenges	FY 2019 Estimate \$000s	FY 2020 Request \$000s
Universe	184	184
Biodiversity	1,543	1,543
World Cultures	792	792
American Experience	600	600
Total	\$3,119	\$3,119

NATIONAL AIR AND SPACE MUSEUM

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	151	20,110	62	8,957	37	9,098	5	797
FY 2019 ESTIMATE	151	20,110	81	44,813	27	30,038	4	455
FY 2020 REQUEST	151	20,110	81	76,060	27	9,798	4	455

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	9	1,505	9	1,505	0	0
Engage in vital arts and humanities research	24	3,786	24	3,786	0	0
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	2	367	2	367	0	0
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	15	1,714	15	1,714	0	0
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	28	3,177	28	3,177	0	0
<i>Education</i>						
Engage and inspire diverse audiences	6	857	6	857	0	0
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	45	4,537	45	4,537	0	0
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	2	318	2	318	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	14	3,179	14	3,179	0	0
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	6	670	6	670	0	0
Total	151	20,110	151	20,110	0	0

BACKGROUND AND CONTEXT

The Smithsonian's National Air and Space Museum (NASM) collects, preserves, studies, and exhibits artifacts and works of art related to the history, culture, and science of aviation and spaceflight and the study of the universe. Its cutting-edge research and outreach activities serve multiple audiences within and beyond its walls. The Museum commemorates the past and is committed to educating and inspiring the next generation of innovators and explorers to study and apply science, technology, engineering, art and math to create the future.

NASM is administered as one Museum with multiple locations: the National Mall Building (NMB); the Steven F. Udvar-Hazy Center (UHC) in Chantilly, Virginia; and the Paul E. Garber Facility in Suitland, Maryland. The first module of the Dulles Collections Center, adjacent to the Udvar-Hazy Center, is currently finishing construction and, when completed, will provide state-of-the-art storage for NASM collections. NASM provides access to the nation's and the world's aviation and spaceflight history to an average of 8.5 million on-site guests from all parts of the globe each year, making it among the most visited museums in the world. In addition, NASM draws more than 10 million virtual guests to its website, broadcast/webcast educational programming, and social media.

In FY 2019, NASM is continuing to collect and preserve the nation's aviation and space artifacts and archival material, and to perform original research and reference support in aviation and space history and planetary science to support its broad array of exhibitions, programs, publications, and education and outreach activities. To accomplish its public service mandate and reach diverse audiences, the Museum draws upon a mixture of in-house and contracted resources, and a large corps of volunteers and docents. At the same time, NASM has embarked on an exciting era of change. As we renovate the NMB and reimagine the exhibits, NASM personnel are also rethinking the identity of America's favorite Museum. The new NASM will be more than a destination to visit. It will be an experience available to visitors anywhere, at any time. The heart of their new identity will be a seamless visitor experience that takes the on-site experience and extends its reach beyond the walls of the Museum.

The primary focus for the Museum in FY 2020 and the coming years is on the revitalization of the NMB and the transformation of all of the NMB exhibits. Planning for artifact movement as part of the revitalization and transformation has resulted in a detailed plan to relocate and conserve/preserve more than 4,000 artifacts. This has involved steadily moving artifacts to the Restoration Hangar and Conservation Lab at the Udvar-Hazy Center for treatment, and more than 300 have already been relocated. To support the revitalization schedule, NASM closed three galleries in the Museum in December 2018 and is now on track to have 11 galleries closed and under renovation. As the exhibits/artifacts are deinstalled, they are turned over to the contractor. In addition, the flight simulators will be relocated. The Museum shop will be relocated to the east end of the Museum to support ongoing operations.

MEANS AND STRATEGY

Public Engagement — NASM continues to reach diverse audiences through exhibitions, educational programming, research reference support, publications, and electronic outreach. In FY 2019, we are using our transformation as an opportunity to refine and strengthen NASM’s educational role throughout the Museum and the world. Senior leadership is designing and executing a national Museum education strategy that is poised, over the next 20 years, to “Help build a nation of innovators and explorers.” Our goals are to transport our nation’s aeronautical and space treasures and stories beyond the walls of the Museum through digital technology, and cultivate the next generation of science, technology, engineering, art, and mathematics (STEAM) and history learners by sharing high-quality education content aligned with national education priorities.

In FY 2020, NASM will continue to target middle-school students and STEAM teachers nationally. We are working with educators to improve capabilities in teaching STEAM topics by providing high-quality teacher professional development opportunities, including a two-week residential program. We provide camps and reserved programs for students to inspire the next generation to pursue STEAM careers. We are also targeting local and tourist families, as well as young adults, to build excitement and lifelong relationships, and bring relevance to the generations who did not experience many key aviation and space milestones in their lifetimes.

In FY 2019, NASM staff and volunteers are continuing to provide a variety of Museum programs. NASM Education provides daily activities — such as audio tours, lectures, hands-on science activities, and science demonstrations that reach hundreds of thousands of guests. The Museum also facilitates large, multi-faceted day-long events that reach 5,000 to 40,000 diverse visitors in one day. In addition, NASM will host its second Teacher Innovator Institute — a residential teacher professional development opportunity that is completely free to teachers, bringing back 30 educators from last year’s cohort to engage this year’s 30 educators. The Aviation STEM Camp will also run for a second year, providing opportunities for 60 participants from Title I schools to attend a two-week camp that explores careers in aviation, engineering design challenges, and the principles of flight, and includes a 30-minute discovery flight with a certified flight instructor in a Cessna 160.

NASM attracted an additional 40,000 visitors to events that span evening lectures to innovative programs targeted at young adult audiences. These include events we co-sponsored with Bright Young Things and the *Barmecide Feast* temporary exhibit in honor of the 50th anniversary of *2001: A Space Odyssey*. The Museum’s Innovation Team has supported the Museum’s transformation efforts by promoting new strategies for audience engagement and building connections with influential companies and thought-leaders. Leadership is committed to instilling a culture of innovation throughout the staff. In FY 2020, goals for the Museum’s future include building a network of strategic external partnerships, creating a culture of data-collection and insight-driven decision making, and cultivating a brand identity that engages new and diverse audiences to become brand advocates. Priority

projects in FY 2019 include directing the Museum's Apollo 50 celebrations, culminating with the 50th anniversary of the Apollo 11 moon landing in July of 2019, and producing the second season of the Museum's first podcast, AirSpace. The team was also involved with the Museum's exhibition transformation, including the new *Innovation Gallery* and exhibition interactive components.

The Museum continues to advance the two strategic goals of Preserving Our Natural and Cultural Heritage and Understanding and Impacting 21st Century Audiences by making collections, archival documents, and images available via publicly accessible websites. The NASM collections and archives databases contain extensive information on the history and provenance of each artifact and are an effective way to offer in-depth information to the public through electronic or digitized means. NASM's electronic resources may also encourage more researchers to request access to the Museum's archives and collections, and to make in-person visits to followup on initial online research efforts. The NASM Archives set up workflows for attaching digital assets to the Smithsonian Online Virtual Archives (SOVA). More than 66,500 digital assets have been attached to SOVA and made available to the public. We also completed the prototype project for making audio recordings available through SOVA, launching the Peenemunde Interviews Project.

In FY 2020, NASM will continue to build on the success of its digitization program by making high-resolution images and information about our collection available to the public online. We will share behind-the-scenes views of our transformation process, panoramas inside famous aircraft and spacecraft, and new 3D models of Apollo 11 artifacts in honor of the mission's 50th anniversary.

Exhibitions — In FY 2020, the Museum will continue to ensure stewardship of and access to its peerless collection of aerospace artifacts and archival materials, and to produce expert scholarship and research, while developing content and scripts for the new galleries. In support of exhibit transformation, NASM started design for 12 exhibits in the east end of the National Mall Building. These new exhibits will include designs for the *Milestones of Flight* hall, a new design for the *How Things Fly* exhibit area, and new galleries for World War I and World War II aviation. Work will also continue on the design of a new gallery for the east-end, reflecting the new approaches to access to and use of outer space, *The Future of Spaceflight Gallery*. Additionally, the Museum started the fabrication work of the nine west-end exhibits with a projected installation start in FY 2020. These new exhibits include: *Early Flight; A Nation of Speed; Exploring the Planets; America by Air; We All Fly; Destination Moon; and Wright Brothers and One World Connected*. In addition, NASM will enhance its vision of the Museum's transformation by planning on a rotational gallery focused on technological advances in aerospace, *The Innovation Gallery*.

With the Museum under renovation and the Apollo exhibit closed during the 50th anniversary of the moon landing, the Museum, in partnership with the Smithsonian Institution Traveling Exhibition Service (SITES), launched *Destination Moon: The Apollo 11 Mission* traveling exhibit to bring the iconic

Apollo 11 command module *Columbia* and dozens of other one-of-a-kind artifacts to four major cities. In FY 2019, *Destination Moon* headed to the Museum of Flight in Seattle, where it is displayed for the 50th anniversary of the moon landing before returning to NASM for its permanent display.

Collections — NASM plans to enhance collaboration with private collectors and other Smithsonian museums by requesting loans of key artifacts to share with the public in new exhibits on the inspiring stories of America’s role in pioneering aeronautics and space exploration. While NASM has a substantial number of artifacts currently on loan to other museums, as well as the *Destination Moon* traveling show, it is expected that new or additional outgoing loans will need to be limited during the revitalization of the National Mall Building, due to the sheer volume of work that this effort represents. NASM has refined tools and processes to coordinate loan transactions in support of transformation, which will also make the Museum’s loan program more effective in the future.

Artifact logistics will be the biggest challenge throughout revitalization of the NMB and transformation of NASM exhibits. The Museum has more than 4,000 artifacts affected during these moves. The reimagined NMB exhibits will require artifact relocation to and from multiple NASM locations (that is, Garber, UHC, and the NMB), and will also include returning loaned objects, new loans from other institutions, and objects of all sizes. Approximately 3,300 objects will be re-installed into the Museum as part of the transformation, including many artifacts not currently on display at the NMB. Of the artifacts presently in the NMB, approximately 1,300 are not coming back into the building. Some will go into long-term storage in the new Dulles Collections Center Storage Module or will be exhibited at UHC. Most of the artifacts will require some type of preservation or conservation efforts, and the collections staff has estimated how long the treatment times will be for each artifact. Total treatment of all the artifacts is estimated to take approximately 15,000 workdays, including conservation and preservation. This work is progressing with hundreds of artifacts already moved, treated, or in treatment.

NASM will continue the relocation of artifacts from the outdated, inadequate storage facilities at the Garber Facility to UHC, including documentation, digital imaging, re-housing for each artifact, and selected conservation as identified through triage. NASM will likely reach the capacity of available storage for medium-size artifacts at UHC in FY 2019.

Facilities — The Smithsonian Institution is nearing completion of the first state-of-the-art storage module at the Dulles Collections Center adjacent to UHC. This building will serve as swing space for storing artifacts from the NMB as the Museum undertakes construction. In FY 2024, after completion of the NMB revitalization, this storage module will support the continued move of artifacts from the Garber Facility, but is only the first of five such buildings required to provide enough space to store all of the artifacts remaining at the Garber facility.

FY 2020 will see the first steps of the NMB Revitalization effort well under way. All staff moves in support of these first steps of revitalization were completed in FY 2018, including moving the advancement, curatorial and business operations staffs to rented office space near the Museum, and permanently relocating the Archives and Smithsonian Library to the Udvar-Hazy Center. Staff who will remain in the NMB during the construction have been consolidated in the east half of the building to facilitate the renovation of staff spaces, as well.

Scientific Research — To achieve the strategic goal of Enhanced Interdisciplinary Research, NASM's Center for Earth and Planetary Studies (CEPS) conducts basic research related to planetary exploration, with an emphasis on the moon, Mars, Venus, and icy satellites, and curates galleries and public offerings in the planetary sciences. NASM scientists continue to work as members of the science teams for the Mars Exploration Rover, Mars Reconnaissance Orbiter, Lunar Reconnaissance Orbiter, JUPITER ICy moons Explorer (JUICE), and Europa Clipper missions. NASM scientists work with the data from these and other missions to solar system bodies, and convey this exciting information to the public. Basic research continues to concentrate on the National Research Council and NASA priorities to determine the origin of solar system bodies and habitable planets, with an emphasis on understanding the past climate of Mars and publishing the results of this research in scientific literature.

Historical Research — NASM continues to lead in the field of aerospace history by producing books, scholarly articles, and other publications, and by making presentations at professional conferences on the history of aerospace technology, aviation, aerodynamics, spaceflight, and space sciences. Based on their research and expertise, the archives and curatorial staff will continue to evaluate potential acquisitions for the national collections and respond to numerous public inquiries. NASM will also continue to upgrade exhibits dealing with aviation and spaceflight, thereby ensuring that current materials are available to the public.

Across NASM, our scientists and researchers continue to lead the way in impactful and significant engagement and discussion, producing an average of more than 50 publications each year, many award-winning. For example, in FY 2018, the book, *Reinventing the Propeller: Aeronautical Specialty and the Triumph of the Modern Airplane* by NASM curator Dr. Jeremy Kinney won a Smithsonian Secretary's Research prize. Carolyn Russo's book, *The Art of the Airport Tower* continues to win prizes worldwide. Dr. Valerie Neal's book, *Spaceflight in the Shuttle Era and Beyond*, won the American Institute of Aeronautics and Astronautics Gardner-Lasser Aerospace History Literature Award. And finally, Dr. Tom Watters was a key member of the mission team that won a NASA Group Achievement Award.

Management — NASM will continue to pursue the strategic goal of Enabling Cost-Effective and Responsive Administration. In FY 2018, leadership reviewed workload and staffing requirements and human capital capabilities to ensure appropriate staffing in the highest priority areas. In FY 2019, transformation of the

Museum includes periodic review of organizational alignment and continued refinement of business processes, as well as development of analytical tools to assess progress in achieving the NASM's strategic plan goals and objectives.

NONAPPROPRIATED RESOURCES — General trust funds support research, education, exhibitions, and fund raising, including salaries and benefits. Donor/sponsor-designated funds support costs related to specific programs and projects. Fund raising is under way for future exhibitions, education initiatives, and public programs. Government grants and contracts support research and other scientific activities. However, the Museum expects to see some negative impact to revenue generated by Smithsonian Enterprises over the course of the revitalization of the NMB, due to closures of the revenue-generating activities and a reduced number of guests during the revitalization project.

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

	APPLICATION OF OPERATING RESOURCES									
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS		INTERAGENCY	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	99	24,593	102	21,769	10	6,526	222	79,729	0	29
FY 2019 ESTIMATE	99	24,593	104	26,173	12	12,005	216	73,715	1	310
FY 2020 REQUEST	99	24,745	104	26,173	12	12,005	216	73,715	1	319

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in impactful scientific research and discovery	90	19,580	90	19,580	0	0
Engage in vital arts and humanities research						
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	1	191	1	191	0	0
Facilities and Safety						
Improve Smithsonian facilities operations and provide a safe and healthy environment	0	160	0	312	0	152
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	8	4,462	8	4,462	0	0
Information Technology						
Improve the Institution's information technology systems and infrastructure	0	200	0	200	0	0
TOTAL	99	24,593	99	24,745	0	152

BACKGROUND AND CONTEXT

The mission of the Smithsonian Astrophysical Observatory (SAO) is to advance the public's knowledge and understanding of the universe through research and education in astronomy and astrophysics. The secondary mission is to be of service to the national and international astronomical communities, and to society in general, in areas associated with our primary mission.

The Observatory has an extraordinary record of achievement in developing and successfully implementing large, complex, and innovative observational and theoretical

research projects. Additionally, SAO carries out investigative research performed by individual researchers and small groups. This broad range of activities creates the distinctive, fertile research environment that drives SAO's success and makes the Observatory a recognized leader in the global astrophysical field of science.

SAO's work directly supports the new Smithsonian Strategic Plan goal Five: to "Drive large, visionary, interdisciplinary research and scholarly projects." Within this goal, SAO drives the Grand Challenge of "Unlocking the Mysteries of the Universe," by calling for the Smithsonian to "advance knowledge at the forefront of understanding the universe and solid Earth."

Founded in 1890, SAO is the largest and most diverse astrophysical research institution in the world. SAO has helped develop some of the world's most sophisticated astronomical instruments, with high resolution at wavelengths across the electromagnetic spectrum, to probe the mysteries of the universe. Alone, and in powerful partnerships with the National Science Foundation (NSF), the National Aeronautics and Space Administration (NASA), and the Department of Energy, it has pioneered the development of orbiting observatories and large, ground-based telescopes; the application of computers to study astrophysical problems; and the integration of laboratory measurements and theoretical astrophysics. Observational data are gathered at SAO's premier facilities: the Submillimeter Array (SMA) in Hawaii; and in Arizona the 6.5-meter diameter Multiple Mirror Telescope (MMT), the Very Energetic Radiation Imaging Telescope Array System (VERITAS); and the specialized telescopes at the Fred Lawrence Whipple Observatory. In addition, SAO conducts research with a broad range of powerful instruments aboard rockets, balloons, and spacecraft (most notably the Chandra X-ray Observatory, the Spitzer Space Telescope, the Hinode Telescope, the Solar Dynamics Observatory, and the recently launched Parker Solar Probe); and at locations as diverse as the high plateaus of northern Chile and the Amundsen South Pole Station. Headquartered in Cambridge, Massachusetts, SAO collaborates with the Harvard College Observatory to form the Center for Astrophysics | Harvard and Smithsonian.

For more than 61 years, SAO astronomers and their colleagues have made revolutionary discoveries which have changed our fundamental understanding of the universe and our place in it. We have discovered and examined planets in orbits around other stars, watched as new stars are born, and discovered bizarre remnants of dead stars that emit vast quantities of x-rays. We have determined that the universe is 13.7 billion years old, and that it is populated with billions of galaxies, many of which have supermassive black holes at their centers. In addition, we have found convincing evidence that most of the matter in the universe is an unexpected mixture of some kind of unseen "dark matter," with normal matter making up less than four percent of the total; and that the expansion of the universe is apparently accelerating, driven by a mysterious and invisible "dark energy." At the same time, SAO astronomers work systematically on the vital basic research that seeks to explain the sun and its x-ray-emitting corona, the nature of the solar system, the abundant elements in our Milky Way Galaxy, the gas and dust between the stars, the formation and evolution of galaxies, and other important questions about the nature of the universe.

Today, SAO continues to use advanced technologies to make new discoveries, leading to a coherent story of the cosmos from the Big Bang to intelligent life here on Earth.

SAO's research is unique and world renowned because of the strength and diversity of its observers, theorists, instrument developers, engineers, and laboratory experimentalists, and because SAO emphasizes multiple strategies which draw from the strengths of both small projects and large research centers. Indeed, SAO's extraordinary research success is partly the result of the rich cross-fertilization that its outstanding scholars bring to each other in a climate that nurtures collaborative excellence and sharing of ideas.

SAO's pre-eminence is underscored by the prominent role its scientists take in the consideration and establishment of national policy for astrophysics. For instance, Alexey Vikhlinin is Co-Chair of NASA's Science and Technology Definition Team for the Lynx Mission Concept, one of four contenders for the highest-level recommendation in the upcoming National Academies of Science Decadal Survey of Astronomy and Astrophysics. SAO scientists and engineers are engaged in key roles for two other mission concepts: the Origins Space Telescope, and the Large Ultraviolet, Optical and Infrared telescope. In addition, SAO offers key advice and reviews to NASA for the James Webb Space Telescope.

Together with its partner, the Harvard College Observatory, SAO is the top choice of graduate- and postdoctoral-level young scientists for astrophysics. Continued federal support makes this leadership possible.

The budget request includes an increase of \$152,000 for laboratory space and escalation costs for current federal leased space that are further justified in the Fixed costs section of this budget.

MEANS AND STRATEGY

To achieve the goal of Enhanced Interdisciplinary Research, SAO scientists will make optimal use of various astronomical facilities to support their research, including the ground-based optical and radio telescopes owned and operated by SAO in Arizona and Hawaii, and space-based telescopes, most notably the Chandra X-ray Observatory, which is operated by SAO on behalf of NASA, NASA's Solar Dynamics Observatory, and the recently launched Parker Solar Probe. SAO scientists also have research privileges at the two 6.5-meter Magellan telescopes in northern Chile (because of SAO's partnership with the Harvard College Observatory). In addition, SAO scientists and engineers are leading the science operations team and carrying out a vital scientific research program in very high-energy astrophysics, with the VERITAS telescope in southern Arizona. SAO also collaborated with University of California at Los Angeles (UCLA) scientists to design and build a prototype for the Cerenkov Telescope Array, an international collaboration that will build upon VERITAS' successes. These facilities enable SAO scientists to make substantial

progress in answering fundamental questions about the origin and nature of the universe, including efforts to understand more about dark energy and dark matter, as well as questions about the formation and evolution of the Earth and similar planets. In addition, SAO scientists will continue their work on future space missions, collaborating with NASA and its research center on missions to study the sun, the x-ray universe, and the outer solar system.

SAO scientists are taking the lead in developing the international Event Horizon Telescope, which draws radio telescopes around the globe into one network, including SAO's SMA, to operate as one gigantic radio observatory to study the physics of the supermassive black holes at the centers of two galaxies: our own Milky Way and the giant galaxy M87. SAO is also collaborating with Taiwan's Academia Sinica, Institute of Astronomy and Astrophysics, to establish a radio observatory in Greenland. The telescope was delivered to Thule in 2016 and came online in 2018. This radio observatory plays a crucial role in enabling the Event Horizon Telescope's observations of M87.

SAO scientists and engineers also play leading roles in the development of new techniques and instrumentation for astronomy. Much of this effort is now directed toward enabling technologies for the next generation of major telescopes. SAO scientists and engineers took the lead in designing critical elements of the Giant Magellan Telescope's wavefront control system that allows the seven huge mirrors to work as a single optical element. SAO also continues to lead in the design and development of the first instrument that will be installed on the GMT: the GMT-Consortium Large Earth Finder (G-CLEF), which will enable astronomers to detect signs of life on planets orbiting nearby stars. SAO scientists, working with a brilliant Harvard graduate student, are developing an extension for G-CLEF that will make it even more sensitive to evidence of life on planets orbiting nearby stars.

In addition, the SAO team delivered a major instrument to NASA for launch on the Parker Solar Probe mission. The Solar Wind Electrons, Alphas and Protons (SWEAP) instrument is the only observatory on this mission that will look directly at the sun as the spacecraft approaches closer to the sun than any previous scientific instrument. The Parker Solar Probe was launched from Cape Canaveral on August 12, 2018, and has since had its first, very successful close encounter with the sun.

SAO scientists take a leadership role in astrophysics by participating in or hosting national and international conferences (e.g., the American Astronomical Society, the International Astronomical Union, and the Astronomical Data Analysis Software and Systems conference series), by participating as keynote and/or invited speakers at such meetings, and by serving on a diverse range of astronomical and astrophysical review panels. SAO scientists will also continue to publish in leading peer-reviewed journals, such as the *Astrophysical Journal*, the *Astronomical Journal*, and *Astronomy & Astrophysics*. In addition, SAO developed and operates the

Astrophysics Data System, which is recognized as a world leader in the dissemination of scientific literature about the cosmos.

SAO will achieve the strategic goal to Understand and Impact 21st Century Audiences by producing and delivering educational services and products rooted in SAO research to meet the educational needs of the Observatory's learners. This sustained outreach effort gives SAO increased publicity and recognition.

The strategic goal of Enabling Cost-Effective and Responsive Administration will be achieved by making SAO's information technology (IT) infrastructure robust, reliable, and secure; maintaining a cooperative environment through communication and activities that underscore SAO's special mission and each staff member's contribution to its success; evaluating managers and supervisors on their compliance with applicable equal opportunity laws, rules, and regulations, and on the effectiveness of their efforts to achieve a diverse workforce; and facilitating the use of small, minority, women-owned, and other underused businesses in SAO's procurement operations and business relationships. These management tools will continue to support and enhance SAO's scientific and educational missions.

NONAPPROPRIATED RESOURCES — General trust funds come primarily from overhead charged on grants and contracts. SAO uses these funds to support administrative functions approved in the Indirect Cost Budget submitted to the Office of Naval Research, as required by 2 *Code of Federal Regulations* 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards. Donor/sponsor-designated funds come primarily from restricted gifts from individuals, foundations, and corporations, which are earmarked for particular purposes; restricted endowment funds; and non-Governmental grants and contracts. Government grants and contracts come from Government agencies for research in areas of SAO's expertise. SAO often conducts this research in cooperation with governmental, academic, and research institutions in the United States and abroad.

MAJOR SCIENTIFIC INSTRUMENTATION

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	0	4,118	0	0	0	0	0	0
FY 2019 ESTIMATE	0	4,118	0	0	0	0	0	0
FY 2020 REQUEST	0	4,118	0	0	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in impactful scientific research and discovery	0	4,118	0	4,118	0	0
Total	0	4,118	0	4,118	0	0

BACKGROUND AND CONTEXT

Smithsonian science is engaged in research and discovery focused on the origin and evolution of the universe, the formation and evolution of Earth and similar planets, the origins and prevalence of life in the universe, the discovery and understanding of biological diversity, and the study of human diversity and cultural change.

The Smithsonian Astrophysical Observatory's (SAO) work directly supports the new Smithsonian Strategic Plan's goal: to "Drive large, visionary, interdisciplinary research and scholarly projects." Within this goal, SAO drives the Grand Challenge of "Unlocking the Mysteries of the Universe," by calling for the Smithsonian to "advance knowledge at the forefront of understanding the universe and solid Earth."

The Smithsonian uses its no-year funding from the Major Scientific Instrumentation (MSI) line item to develop large-scale instrumentation projects with advanced technologies that enable scientists at SAO to remain at the forefront of astronomy and astrophysics research. The Smithsonian's criteria for proposing and selecting MSI projects are: 1) the instrumentation will enable compelling scientific advances that would not otherwise occur (either at SAO or anywhere else in the world) for some time to come; 2) the instrumentation is novel and technically advanced, and would not be developed without SAO's significant contribution; and 3) the science enabled by the innovative instruments significantly advances the Smithsonian Institution's Strategic Plan. The fundamental role for federal appropriations is to support the basic scientific infrastructure that enables SAO to conduct research, compete for external grants and funding, publish in peer-reviewed journals, and inform the public about the latest scientific

discoveries in an exciting and compelling manner. Because of the magnitude of the costs involved and the time required to fabricate major new instruments and reconfigure existing ones, the Institution requests that MSI funds for these projects be kept available until they are spent.

Innovative instrumentation has enabled astronomers to make fundamental discoveries about the universe, such as the existence of more than 4,000 planets around nearby stars and the bizarre remnants of dead stars that emit large quantities of x-rays in the Milky Way Galaxy. Scientists have determined that the universe is 13.7 billion years old and that it is populated with billions of galaxies, many of which have supermassive black holes at their centers. Research has produced strong evidence that the expansion of the universe is accelerating due to a mysterious and invisible “dark energy.” Today, SAO scientists use advanced technologies to produce a coherent story of the cosmos from the Big Bang to the origins of life on Earth. MSI funds are used to meet this objective.

Three SAO projects are included in the FY 2020 MSI line item: the Greenland Telescope; the Submillimeter Telescope Array (SMA) on Mauna Kea, Hawaii; and the Advanced Telescope Instrumentation for the converted Multiple Mirror Telescope (MMT) at SAO’s Fred L. Whipple Observatory at Mt. Hopkins, Arizona and the Giant Magellan Telescope in Northern Chile.

MEANS AND STRATEGY

SAO’s mission is to engage in astrophysical research and discovery. Observational astrophysics is the basic science responsible for the understanding of the universe and its components beyond Earth. SAO has made leading contributions to many key discoveries in astrophysics, including: 1) the remarkable discovery that the expansion of the universe is accelerating; 2) the discovery of enormous patterns traced by galaxies in the universe; 3) the most compelling demonstration of the existence of supermassive black holes at the centers of most galaxies; 4) the discovery of very high-energy gamma rays; 5) the most convincing observational evidence for the existence of dark matter; and 6) the discovery of planets orbiting other stars. SAO scientists contributed to these discoveries by using key facilities that enable observations in several different bands of the electromagnetic spectrum (i.e., the broad range of light that is emitted by objects in the universe). These contributions have put SAO in the forefront of this generation of astronomers and astrophysicists.

SAO’s pre-eminence is underscored by the prominent role its scientists take in the consideration and establishment of national policy for astrophysics. For instance, Alexey Vikhlinin is Co-Chair of NASA’s Science and Technology Definition Team for the Lynx Mission Concept, one of four contenders for the highest-level recommendation in the upcoming National Academies of Science Decadal Survey of Astronomy and Astrophysics. In addition, SAO scientists and engineers are engaged in key roles for two other mission concepts, the Origins Space Telescope and the Large Ultraviolet, Optical and Infrared telescope. SAO also offers key advice and reviews to the National Aeronautics and Space Administration (NASA) for the James Webb Space Telescope.

Together with its partner, the Harvard College Observatory, SAO is the top choice of graduate- and postdoctoral-level young scientists for astrophysics. Continued federal support makes this leadership possible.

SAO's strength in observational astrophysics depends on its major ground-based facilities, the Submillimeter Array, the MMT, the Giant Magellan Telescope (under development), and the NASA space-based facilities, including the Chandra X-ray Observatory, the Spitzer Space Telescope, the Solar Dynamics Observatory, and the recently launched Parker Solar Probe. Access to both ground- and space-based observatories enables SAO scientists to conduct research that would be impossible with either type of observatory alone. SAO's future strength in ground-based observational astrophysics depends entirely on equipping the Submillimeter Array and its optical telescopes with powerful new instruments, and establishing the new Greenland Telescope. This leadership, in turn, depends on developing specialized instruments and facilities that do not now exist. A team of talented scientists and engineers must work together, over several years, to develop these tools with support from multi-year MSI funding.

Greenland Telescope (\$500,000)

The Greenland Telescope was originally a National Science Foundation (NSF) prototype for the Atacama Large Millimeter Array (ALMA). It was transferred to SAO from NSF Astronomy, and has been retrofitted for cold-weather operation by SAO's partner institution, the Academia Sinica Institute for Astronomy and Astrophysics (ASIAA) in Taiwan. These investments by NSF and by our Taiwanese collaborators will be greatly leveraged by the SAO contribution.

The Smithsonian considers this an excellent opportunity to capitalize on a highly leveraged use of federal funds with high-value science returns on the investment.

The Greenland Telescope forms the northernmost node of a Very Long Baseline Interferometer (VLBI), operated jointly with the SMA (Hawaii) and the ALMA telescope array (Chile), to make unprecedented observations of the event horizon of the supermassive black hole (six billion times the mass of our sun) at the heart of the giant galaxy M87. This will complement the observations to be made in the southern hemisphere of the less massive black hole (only four million solar masses) at the center of our own Milky Way Galaxy. The combination of these observations will revolutionize our understanding of gravity where it is at its strongest, the very edges of black holes, and provide pioneering data for astronomers and physicists to analyze as they pursue the Smithsonian's Grand Challenge of Unlocking the Mysteries of the Universe. When the Greenland Telescope is not connected to the VLBI network, it will exploit its high, dry location and stable atmosphere to make sensitive measurements of molecules in space at the highest frequencies accessible from the ground.

In FY 2018, SAO, with its partner ASIAA, achieved first light with the telescope in Thule, at the United States Air Force base in Greenland, and in FY 2019 is connecting the antenna with the SMA to make unprecedented observations of the event horizon of the black hole at the heart of galaxy M87.

Finally, the SAO has worked with the NSF Division of Polar Programs to identify a high, dry, northern site on the Greenland ice sheet as the ideal place for high-frequency radio astronomical observations that require excellent atmospheric transmission and exceptional atmospheric stability. The NSF is redeveloping the Greenland Summit Station to better conduct this research. The development of astronomical activities at the site is a key element of the redevelopment plans.

Submillimeter Telescope Array (\$1,718,000)

The SMA is a pathfinder instrument operating between radio and infrared wavelengths, and has a major impact in exploring the cool universe. In recent years, scientific studies have continued to focus on the study of the distant universe, planet-forming disks, and star formation, including the important role that magnetic fields play in star formation and the dynamics of molecular clouds. In this last area, the SMA leads the field due to polarimetry instrumentation developed at SAO, which the Observatory plans to further enhance in coming years.

For the record, the SMA is the only submillimeter instrument in the world that can respond rapidly to alerts of rare or unique events detected by other observatories. When NASA's Fermi and Swift satellites detected unusual activity in the transient black hole binary in V404 Cygni, the SMA formed part of a worldwide observing campaign to monitor the outburst. V404 Cygni was briefly the brightest object in the x-ray sky, and the SMA captured a corresponding increase in the submillimeter brightness by more than a factor of 50 in less than an hour.

The SMA is a key element of the Event Horizon Telescope, linking several submillimeter observatories, on continental scales, to examine the black hole at the center of the Milky Way at high angular resolution. The Greenland Telescope joined the Event Horizon Telescope in FY 2018, enabling key observations of the black hole at the center of galaxy M87.

The capacity to conduct a particular scientific observation with the SMA depends on three factors: the collecting area or size of the telescope array, the weather, and the sensitivity and number of receivers in operation during an observation. The collecting area of the telescope array is fixed at 8 x 6-meter-antennas and cannot be augmented without significant additional funding.

The sensitivity of the SMA depends on the instrumentation that processes the incoming signals. SAO is developing new capabilities that will ultimately make the entire SMA 12 to 24 times more sensitive than it was when commissioned. (This is as though each of the telescopes became 12–24 times larger. Note that the range of enhancement depends on the operational model of the array.) Funds are requested in FY 2019 and 2020 to enable the array to become 6–12 times more sensitive, a significant step toward the full enhancement.

Advanced Telescope Instrumentation for the Optical Telescopes (\$1,900,000)

SAO's expertise in building large and powerful instruments is a crucial capability in the era of extremely large telescopes that is now upon us. Continued MSI funding will enable SAO to conduct this research and maintain the United States' lead in this important scientific field.

The MMT, a joint project of SAO and the University of Arizona, dedicated in 1979, was originally made up of six identical 1.8-meter telescopes in a single altitude-azimuth (naval-gun-type) mount. In the 1990s, SAO replaced the six smaller mirrors of the original MMT with a single mirror 6.5 meters in diameter. This large mirror more than doubled the light-gathering capability of the telescope, and a set of large corrector lenses, built with MSI funding, increased its field of view 400 times.

The converted MMT is an extremely powerful telescope, but requires sophisticated instruments to analyze the light it collects. To this end, SAO has built increasingly sophisticated instruments to exploit the MMT's potential, starting with Megacam in 2003 and most recently with the Binospec instrument commissioned last year.

Binospec is a “game-changer,” enabling the MMT to compete on an equal footing with the largest telescopes in the world. Binospec's huge light grasp will enable SAO scientists to carry out pioneering explorations of the structure and evolution of galaxies, the structure of the Milky Way, and the nature of dark matter and dark energy. Binospec's nimbleness in moving between spectroscopy and imaging allows Smithsonian scientists to lead in observing transient events, such as supernova explosions and gamma-ray bursts, to map the geometry of the universe and accurately detect objects at the farthest reaches of the universe. The scientific opportunities opened by Binospec are attracting the next generation of astrophysicists who will exploit the power of the Giant Magellan Telescope for the next 20 to 30 years.

SAO scientists are advising their counterparts at the National Autonomous University of Mexico (UNAM) on the development of a new telescope that will be very similar to the MMT. This telescope will be located at the superb San Pedro Martir site in Baja California, Mexico, with an estimated construction time of five to seven years. SAO plans to relocate Binospec at minimal cost to this new facility. Access to an additional telescope will expand the capacity of Binospec to conduct novel observations of the universe and continue to make new discoveries.

The Giant Magellan Telescope (GMT) is being developed by SAO in partnership with 10 other research institutions in the United States, Australia, Brazil and South Korea. When the GMT starts scientific operations in 2024, it will be the largest optical telescope in the world, with a 24.5-meter (83-foot)-diameter primary mirror. This larger aperture will allow SAO to peer back in time and explore the earliest phases of the universe itself, and to take much sharper images than those obtainable with either the Hubble Space Telescope or the James Webb Space Telescope.

SAO leads the design, development, and manufacture of the first scientific instrument that will be used with the GMT—the GMT- Consortium Large Earth Finder (G-CLEF). G-CLEF will be used to search for planets that are “Earth Twins” orbiting other stars and to hunt for evidence of life on those planets. G-CLEF is the only instrument in development for the coming generation of Extremely Large Telescopes (ELTs) that will be capable of detecting signs of biological activity in exoplanet atmospheres.

The MMT is a superb platform on which to develop innovative technologies for the new generation of extremely large telescopes such as the GMT. In addition to the work on G-CLEF, SAO scientists are developing a novel instrument that is designed specifically to enhance G-CLEF's ability to detect breathable diatomic oxygen in exoplanet atmospheres. Breathable oxygen, is the strongest indicator of life on an exoplanet. A small, prototype instrument is being built for operation on the MMT to validate and optimize the underlying concept before a GMT-scale instrument is built.

In FY 2020, MSI funds will be used to complete a key enhancement to Binospec and enable its transition to full scientific operations. Additionally, MSI funds will continue to advance the design of G-CLEF and develop prototypes of high-risk subsystems needed to use the instrument to its full potential.

NATIONAL MUSEUM OF NATURAL HISTORY

	APPLICATION OF OPERATING RESOURCES									
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS		INTERAGENCY	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	335	49,789	21	4,703	57	24,599	14	3,138	5	696
FY 2019 ESTIMATE	335	49,789	22	4,750	58	24,800	14	3,150	5	700
FY 2020 REQUEST	335	49,789	23	4,785	59	25,000	14	3,170	5	702

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	111	17,305	111	17,305	0	0
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	4	495	4	495	0	0
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	14	1,743	14	1,743	0	0
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	50	7,048	50	7,048	0	0
<i>Education</i>						
Engage and inspire diverse audiences	30	3,553	30	3,553	0	0
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	91	14,622	91	14,622	0	0
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	4	842	4	842	0	0
<i>Security</i>						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	1	181	1	181	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	15	1,764	15	1,764	0	0
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	15	2,236	15	2,236	0	0
Total	335	49,789	335	49,789	0	0

BACKGROUND AND CONTEXT

The mission of the National Museum of Natural History (NMNH) is to understand the natural world and our place in it. We seek to inspire curiosity, discovery, and learning about nature and culture through outstanding research, collections, exhibitions, and education. Building upon its unique and vast collections and associated data, field research stations, specialized laboratories, and an internationally recognized team of staff scientists, research associates, federal agency partners, and Fellows, the Museum provides fundamental knowledge to a wide array of constituencies ranging from federal agencies to the public. The Museum's scientific research focuses broadly on discovering, documenting, and understanding biodiversity; studying the formation and evolution of the Earth and other planets; exploring human diversity and cultural change; and evolutionary patterns and processes throughout the history of life on Earth. This research provides new understanding and relevance to broader national and international scientific agendas, looking at such important societal issues as global change, biodiversity, cultural conflict, and natural hazards.

Natural history science (that is, the observation, description, documentation, and analysis of the natural world) is foundational to many science domains and is essential to understanding our ever-changing world. NMNH science spans an enormous breadth of natural history and our expert staff contributes a depth of knowledge that is among the finest in the world. Our authoritative expertise in diverse research areas also helps NMNH demonstrate the relevance and importance of natural history science in general. Our massive and varied scientific collections provide a powerful research resource for increasing our understanding of life on Earth.

NMNH science has global impact and is widely cited by the greater scientific community. Our scientists document and analyze how species arise, evolve, persist, diversify, and interact with each other and with the environment, as well as how they migrate and go extinct. Our earth and planetary scientists contribute to our understanding of Earth's history as well as the effects of geologic and meteoritic phenomena on Earth's atmosphere and biosphere. They study the dynamic planet we inhabit in all its aspects, from its surface to its core. NMNH anthropologists use collections and field-based studies to help understand the continually evolving story of our species and its interactions with other life and the planet. Our Museum's science staff also translates science to society through their diverse and dedicated outreach efforts, and invests heavily in training and mentoring the next generation of new scientists.

Our collections and collections expertise are fundamental to our science. The scope and breadth of NMNH collections provide a vast research infrastructure that supports our scientific mission. NMNH scientists work with their professional colleagues around the world to draw on these collections, make new discoveries, and test new theories. NMNH collections also represent an invaluable historical archive, documenting billions of years of planetary, geological, organismal, and cultural changes.

The Museum's stewardship of its collections, making up more than 146 million natural history specimens and human artifacts, is at the core of its mission. This set of collections, the largest of its kind in the world, is an unparalleled resource for collections-based research on the diversity of life on Earth, including plants, animals, fossils, minerals, and human activity. These anthropological, biological, and geological specimens and objects are the foundation for all of the Museum's scientific work. With their unparalleled spatial breadth and temporal depth, the collections promote analyses and interpretations that enable scientists to connect observations of contemporary phenomena with the past and events around the world, so that we can better understand our planet and the effect of human activities on it. The Museum's collections capture the imagination and stimulate the next generation of scientists, and are important for maintaining the Institution's intellectual infrastructure and keeping our nation competitive in international science and the application of scientific knowledge. NMNH collections and their attendant information are a dynamic resource used by researchers, educators, and policy makers worldwide.

In addition, NMNH's collections serve as valuable reference materials for U.S. Government agencies. These resources are actively and collaboratively used by staff members of the Departments of Defense, Commerce, Agriculture, and Interior, who are housed in NMNH facilities. For example, tens of thousands of insects urgently requiring identification are sent to the NMNH from ports of entry each year. Scientists at the U.S. Department of Agriculture and NMNH consult the collections and rapidly provide identifications to border control agencies so that U.S. agricultural and economic interests are kept secure from damage by potentially invasive species. The NMNH bird collections provide answers to the Federal Aviation Administration (FAA) and the U.S. Department of Defense, revealing the species of birds that damage aircraft, and leading to improved habitat control around airports and better aircraft and engine design to prevent accidents in aviation. NMNH collections also serve repository functions for several agencies, including the National Cancer Institute, Department of the Interior, and NASA, and the Museum's human skeletal collections assist in FBI investigations.

The NMNH's first-class research and collections support its exhibitions and educational outreach. As one of the most visited museums in the world, NMNH provides diverse public audiences with presentations on every aspect of life on Earth. In FY 2018, the Museum hosted more than five million on-site visitors. Through many affiliations and partnerships, the NMNH takes its science, exhibitions, and public programs to other museums and non-traditional exhibition venues, such as libraries, schools, and universities across the country. With a growing network of interactive websites (which hosted more than 16 million unique visitors), distance-learning experiences, social media and software applications (apps), the Museum is transforming itself into a true electronic classroom that is potentially accessible to everyone — free of charge.

MEANS AND STRATEGY

The NMNH has a long history of training future scientists, including those abroad, which strengthens the Museum's collections and connections with these countries. The NMNH is committed to training future generations of scientists by increasing the number of postdoctoral Fellowship awards and providing an entry-level research experience for the most talented undergraduates in the Earth and life sciences, as well as anthropology. The NMNH will also continue to emphasize collaboration with foreign students and colleagues to broaden the Museum's international science network.

In FY 2020, the Museum will continue to use a combination of federal and private funding to advance the NMNH's goals of investing in the next generation of scientists and researchers. Through the Museum's academic programs, it will continue to create a staircase of academic opportunity to mentor the next generation of museum scientists and professionals. These programs take students and young professionals from the early stages of exploration in high school to the postdoctoral peak of stepping into the role of being professional scientists, by offering various Fellowship and internship programs for undergraduates, graduates, and postgraduates.

Also, in FY 2020, the NMNH will achieve the Smithsonian's strategic goal of Preserving Our Natural and Cultural Heritage by continuing to emphasize: collections preservation and access projects related to initiatives in preserving indigenous languages through preservation of manuscripts, recordings and moving images, and photographs; preserving and digitizing plant and fossil collections and their associated paper records; assessing and improving the management of archival materials; and preserving biological specimens at ultra-cold temperatures to document biodiversity as part of the Global Genome Initiative.

Collections Care Initiative funding will support replacing cabinetry, applying updated preservation techniques to fluid-preserved collections such as invertebrates stored in alcohol, linking ownership of previously digitized records with their associated specimen records, surveying archival collections, and providing technical assistance for a digitization strategy that will make hundreds of thousands of glass slide-mounted specimens accessible for broader use by scientists.

In addition, an essential element of the NMNH's plans to achieve the strategic goal of Preserving Our Natural and Cultural Heritage in FY 2020 is the Museum's commitment to the stewardship of its federal scientific collections. As demonstrated by federal agencies' uses of the collections, and underscored by a survey of federal collections, these resources play an important role in public health and safety, homeland security, trade and economic development, medical research, and environmental monitoring. They also provide the foundation for the Museum's diverse research, exhibits, and public outreach programs. The NMNH will continue to strengthen its commitment to cutting-edge research and state-of-

the-art stewardship of the collections, in partnership with affiliated federal agencies such as the Departments of Defense, Commerce, Agriculture, and the Interior. Federal funding is the linchpin for maintaining and preserving these priceless collections and their valuable information for future generations, while also supporting their use for important ongoing research that, for example, facilitates recovery efforts after natural disasters such as volcanic eruptions and the associated loss of biodiversity. The breadth of NMNH research and its collections of biological, geological, and anthropological objects foster an interdisciplinary environment that attracts other academic institutions, foreign researchers, and national and international policy makers.

To achieve the strategic goal of Understanding and Impacting 21st Century Audiences, in FY 2020 the NMNH will use funding to maintain and upgrade permanent exhibitions, replace outdated exhibits with multi-disciplinary, interactive exhibitions on the Mall and in other venues through traveling exhibits, and to conduct more digital outreach across the country. Both the permanent and temporary exhibitions reflect best practices in visitor experience planning and informal science education, and the Museum will continue to develop these exhibits as part of an array of public outreach activities.

The multi-year Deep Time Initiative will reach its culmination on June 8, 2019 when the largest exhibition project in the Museum's history, the *David H. Koch Hall of Fossils — Deep Time* exhibit, opens. The exhibition is the centerpiece of a wide range of related Initiative projects, including a rich array of educational programming, two major scientific symposia, extensive field research, and public outreach through traditional and social media. Renovations of the historic 30,000-square-foot fossil halls are complete and exhibit installation is well under way, with installation of major fossils, display cases, murals, and the related exhibitry surrounding them. The Museum is using approximately \$50 million in private funds for the exhibit fabrication, remounting of the fossils in the hall, and educational programming. This exhibit demonstrates how the Museum is successfully combining federal funding with its own philanthropic fund raising from private sources.

In November 2018, the Museum unveiled the exhibition *Sea Monsters Unearthed: Life in Angola's Ancient Seas*. Developed in conjunction with Southern Methodist University and Projecto PaleoAngola, the exhibition focuses on the marine reptile-dominated ecosystem that thrived after the opening of the South Atlantic Ocean basin during the Cretaceous period, as seen through the fossils of coastal Angola in southwestern Africa. Angola is one of the few places in the world where fossils are preserved from this time in Earth's history. This exhibition is a wonderful opportunity to introduce our visitors to southwestern Africa and its important fossil history, which reveals the larger story of the ways geology affects biology — how forces deep in the earth shape the planet, and the plants and animals that live in this region. The exhibit, which continues through FY 2020, displays for the first time anywhere a number of Angolan fossil specimens, reconstructions, and 3D models of the material collected by Projecto PaleoAngola.

In addition, *Anthropocene Art* opens in the summer of 2020. With curatorial supervision from the Smithsonian American Art Museum, the NMNH is planning an exhibition of works by contemporary artists to raise awareness and encourage reflection on the role of humans in shaping Earth's recent past, present, and future. The NMNH is planning to use this exhibit to mark the first anniversary of the opening of the *David H. Koch Hall of Fossils — Deep Time*. The exhibit will display innovative and thought-provoking art in a variety of media, engaging the visual arts to spark conversations about our current geological era, the Anthropocene age. We hope to include at least one artist whose work is participatory, and will complement the exhibition with programs such as a panel discussions, film series, and/or hands-on workshops.

In FY 2020, the NMNH will continue to inspire public appreciation of, and engagement with, science and the natural world through efforts in our education, outreach and visitor experience programs. The NMNH will also continue to professionalize the visitor experience program, increasing volunteer and paid staffing to ensure that all public interactions result in consistent, engaging and inclusive experiences to meet the needs of all visitors. NMNH is continually improving the accessibility of exhibits and programs, and successfully reaching underserved audiences and people from under-represented communities.

Q?rius, The Coralyn W. Whitney Science Education Center — the Museum's science, technology, engineering, and mathematics (STEM) learning facility — brings NMNH research and collections to the forefront, allowing for public participation on site, online, and through classrooms. In FY 2020, the Museum will continue to design Q?rius programs to inspire, nurture, grow, and diversify the next generation of STEM professionals by helping citizens become aware of their connection to current issues affecting the natural and cultural world. To achieve this, the Museum will create more opportunities for visitors to participate in learning experiences based on current research and authentic collections in the Q?rius center and throughout the Museum.

Also, in FY 2020, the NMNH will continue implementing its public engagement plan to coordinate its many outreach efforts. This plan focuses the Museum's permanent and temporary exhibitions, educational and outreach programs, and Web outreach on the major research themes identified in the Science Strategic Plan: Understanding the formation of the Earth and similar planets, discovering and understanding life's diversity, and exploring human diversity and cultural change.

In FY 2020, the NMNH will make available the Museum's science experts and collections from behind the scenes, and provide the public with opportunities to engage with scientists, their research, collections, and research-grade scientific equipment, with programs such as "The Expert Is In" series. In addition, the Museum will continue to host special themed days and festivals that bring the public and NMNH science experts together to focus on a specific area of natural history and science, such as National Fossil Day, World Ocean Day, International Polychaete Day, Invasive Species Awareness Day, Pollinator Week, the

Environmental Film Festival, the Innovation Festival, the Smithsonian-wide Solstice Day, the Smithsonian Year of Music, and the Smithsonian Women's History Initiative.

The Museum will also keep reaching out to a growing local, national, and international audience, including children and families, students and teachers, adults, and especially teenagers who visit the Museum on the Mall or its extensive presence online. Outreach activities will include traveling exhibitions, distance learning, and in-depth, online resources, including the award-winning Smithsonian Science How webcasts, the Ocean Portal, Human Origins, *Encyclopedia of Life* and Q?rius websites, as well as digitized collections and long-standing programs of lectures, films, and teacher education.

These NMNH programs and resources will continue to inspire citizens by making them aware of current issues related to the natural and cultural world, helping them understand their role in addressing those issues, and enabling them to participate in experiences that inspire stewardship, conservation, and protection of natural and cultural diversity. In addition, Museum staff are focusing their efforts to build new youth audiences and increase youth participation in a continuum of opportunities that inspire, nurture, grow, and diversify the next generation of STEM professionals. Through innovations in educational technology, these efforts will serve visitors to the nation's capital as well as millions of people around the world who cannot visit the Museum in person. The NMNH will continue to use focused audience research and evaluation tools to study the effectiveness of its public education and outreach efforts.

NONAPPROPRIATED RESOURCES — General trust funds support salaries and benefits of administrative personnel, advancement and business activities, and other program-related costs. The Museum raises funds from private sources to support research, exhibitions, public programs, and administrative functions. This fund raising includes securing donations from special events to promote new exhibitions and educational initiatives, as well as public outreach. Donor/sponsor-designated funds are vital to support exhibition hall renovations, such as the major gifts that have helped to fund extensive renovations of the *Fossil Hall* and *Human Origins Hall*, establish Fellowship programs at the Museum, and offer educational activities and programs such as Q?rius, the STEM education and experience center. In addition, significant endowment gifts support internships and Fellowships which introduce more students to the natural sciences, as well as help the Museum maintain and update its educational programs for the *Ocean Hall* and study of human origins.

In FY 2020, gift funding will support the Global Genome Initiative (GGI) to use emerging genomic research technologies to drive understanding of Earth's biodiversity to new levels by systematically studying, collecting, organizing, and sharing genomic samples of non-human species to preserve and understand the genomic diversity of life on Earth.

In FY 2020, endowment funds will support research, exhibit, and education programs, including the Betty and Whitney MacMillan Fund endowment to study and document the world's endangered languages and knowledge systems. Additionally, the Sara E. and Bruce B. Collette Postdoctoral Fellowship supports an award to fund the work of Fellows conducting research in systematic ichthyology (the study of fish). These endowments provide vital operational and research support to scientists as they conduct their important work. In addition, the Museum continues to receive grants and contracts from both non-Government and Government institutions. Endowments and gifts support the Deep Time Initiative, the Global Genome Initiative, the *Outbreak* exhibit, postdoctoral Fellowship programs, youth engagement programs, and other educational programming.

Finally, in FY 2020, grant funding will support research to determine the ecology of coral disease outbreaks on Florida reefs; glacial retreat and the cultural landscape of ice floe sealing at Yakutat Bay, Alaska; spring salamander research in West Virginia; and developing a practical online resource for species identification of skeletal remains.

NATIONAL ZOOLOGICAL PARK

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	208	27,566	55	8,985	21	10,996	8	2,513
FY 2019 ESTIMATE	208	27,566	33	10,890	40	7,276	8	1,978
FY 2020 REQUEST	208	28,066	35	11,798	41	4,094	12	1,245

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in impactful scientific research and discovery	44	4,515	44	4,515	0	0
Understand and Impact 21st Century Audiences						
Exhibitions						
Offer compelling, first-class exhibitions	102	14,847	102	14,847	0	0
Education						
Engage and inspire diverse audiences	1	131	1	131	0	0
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	52	6,396	52	6,896	0	500
Facilities and Safety						
Improve Smithsonian facilities operations and provide a safe and healthy environment	2	320	2	320	0	0
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	5	946	5	946	0	0
Information Technology						
Improve the Institution's information technology systems and infrastructure	2	411	2	411	0	0
Total	208	27,566	208	28,066	0	500

BACKGROUND AND CONTEXT

In FY 2020, the Smithsonian's National Zoological Park and Conservation Biology Institute (NZP/SCBI) will continue to implement its strategic plan, *Our Plan to Save Species*. With the strategic plan as the roadmap, the focus in FY 2020 will continue to:

- **Fortify and Focus Science, Animal Care, and Collections Management to Advance Global Conservation and Sustainability**

NZP/SCBI is a leader within the Association of Zoos and Aquariums (AZA) community and for all accredited zoos in North America. NZP/SCBI's work to sustain genetically viable live collections and ensure the diversity of species' populations held in zoos is a challenge that no one zoo can accomplish on its own. It is only through the coordination and collaboration of all zoos — facilitated by AZA — that North American zoos can continue to thrive. One of NZP/SCBI's key contributions to ensuring the survival of endangered species is the work that occurs at NZP/SCBI's 3,200-acre site in Front Royal, Virginia.

NZP/SCBI is world-renowned for its efforts to research, care for, breed, and reintroduce some of the world's most critically endangered species. More than 300 species are exhibited at the Zoo's Rock Creek Park campus, including giant pandas, Panamanian golden frogs, Sumatran tigers and Asian elephants. SCBI scientists study and breed more than 26 species at their headquarters in Front Royal, Virginia, including some that were once extinct in the wild, like black-footed ferrets and scimitar-horned oryx. Both locations house and care for some of the world's most endangered animals, such as kiwis, clouded leopards, red pandas, and cheetahs, among others. Approximately 250 SCBI scientists and students collaborate with colleagues in more than 25 countries.

NZP/SCBI researchers work to identify solutions to threats facing endangered animal populations and develop standards or best practices for medical care, nutrition, husbandry, reproduction, and safety for zoo animals. These efforts have been a key contributing factor in raising the husbandry standards for all animals throughout the AZA community and worldwide. NZP/SCBI's accomplishments range from protecting elephants and their caretakers, and understanding the specifics of cheetah reproduction, to the reintroduction of scimitar-horned oryx to the wild in Chad.

One important consideration in ensuring the living collection's safety is introducing more intensive animal quarantine and screening procedures to prevent disease transmission from wildlife to livestock, people, and other animals in the Zoo's collections. These practices are now part of the standard of care. New veterinary medical procedures, diagnostics and testing keep animals healthy and able to breed. More sophisticated medical equipment is being used and new and labor-intensive approaches are increasingly deployed to provide life-saving

veterinary care that means the difference between life and death for these very rare animals. NZP/SCBI develops and shares this expertise, as well as breeding and research protocols, throughout AZA and the worldwide zoo and conservation community.

However, all of these new protocols, tests, and management practices are resource intensive. When almost every birth at SCBI's Front Royal headquarters is of an endangered animal whose individual survival contributes to the overall survival of that species, these resources are well-spent. For these reasons, NZP/SCBI must strategically augment staffing with a select number of well-trained animal care professionals and veterinarians — staff who are essential for ensuring that NZP/SCBI succeeds in its vital mission of saving species.

The extensive space available at the Front Royal facility and the capability it allows to appropriately house and raise endangered species according to their particular needs has been instrumental to NZP/SCBI's exceptional success in species preservation. Yet, with 3,200 acres, there is a cost associated with this species preservation on such a large campus. Activities such as fence maintenance (18 miles of perimeter, 36 miles of cross, eight miles of electric), gate maintenance (207 manual, nine electric), snow removal, mowing 519 acres of pastures and holding yards, and maintaining 10 miles of overhead and underground power lines are vital to ensure the health, safety, and welfare of the research and breeding collection.

Highlights from past years include an SCBI scientist being named species survival plan or (SSP) coordinator for cheetahs in all accredited zoos in North America. AZA's SSP is led by expert advisors who work together to maximize genetic diversity and manage the demographic distribution and long-term sustainability of select species. In this role, SCBI now coordinates a nationwide "breeding centers coalition," a nine-facility consortium that manages the most genetically valuable cheetahs in spacious, naturalistic enclosures. This result increased cheetah reproduction. Scientific studies led by SCBI have further contributed to improvements in animal management techniques; one study demonstrated that allowing multiple males to live together as they would in the wild improves reproductive qualities, including sperm production.

This dual emphasis on animal management and research is applied every day to other rare species. For example, SCBI scientists are using their expertise, in collaboration with the Patuxent Wildlife Breeding Center, to improve recovery of the endangered whooping crane. Despite this species experiencing a reduction to fewer than 20 individuals in the 1960s, SCBI studies have revealed no adverse effect on male fertility. Meanwhile, SCBI scientists are developing new sperm freezing and hormonal monitoring methods so that artificial insemination programs can be more effective in reproducing under-represented species of birds. These innovative tools are being applied to conservation programs for rare Asian crane species maintained in SCBI's animal collection at Front Royal, including white-

naped and hooded cranes. SCBI scientists are using this hard-won expertise to increase total animal numbers and put these populations of rare species on a trajectory to genetic sustainability.

NZP/SCBI science does not stop at the borders of the Front Royal campus or Rock Creek Park facility. For example, NZP/SCBI and its partners are working hard to develop techniques to restore and preserve more than 11 species of corals. Their techniques have enabled corals to be frozen and subsequently thawed to enable out-planting of new corals. Thousands of juvenile corals produced from cryopreserved material are currently being raised at the National Sea Simulator in Australia.

In addition to groundbreaking science to save wildlife, SCBI scientists are developing new and advanced analytical tools to study and model how ecosystems and species interact with their environment and how these systems respond to global changes. Using these new tools and models, SCBI scientists create conservation scenarios so that researchers and policy decision makers can identify the best possible strategies for preserving ecosystem health and biodiversity.

- **Expand Our Reach and Impact**

Science alone cannot solve the planet's extinction crisis. NZP/SCBI has an important role in teaching both the public about its role in saving species and the next generation of researchers and scientists who are trained at the Smithsonian-George Mason University School of Conservation (SMSC) and serve as interns, Fellows, residents, and postdoctoral students throughout NZP/SCBI. Through SMSC, the Department of Nutrition Science has developed and delivered a week-long course on Practical Zoo Nutrition Management for animal nutrition professionals around the world. This course, like many others offered through SMSC, leverages the unique resources available through NZP/SCBI, as well as the Smithsonian as a whole.

Teaching and mentoring programs impact a growing number of students. NZP/SCBI restructured its internship program to ensure that these important learning opportunities are as effective as possible. NZP/SCBI offers unique internships that help participants reach a range of academic and professional goals. Internships positions are available from a variety of groups at NZP/SCBI, including in the areas of veterinary medicine, research, communications, exhibits, and animal programs. Also, a specialized summer program for high-school juniors and seniors takes place on the Front Royal campus and complements the Friends of the National Zoo (FONZ) camp, providing an introduction to conservation field studies and careers.

In FY 2018, with continued efforts in 2019 to address guest services and the visitor's experience, NZP will leverage visitation to raise public awareness of

species under threat. During visits, guests are introduced to flagship species. Flagship species such as pandas and Asian elephants act as goodwill ambassadors to help the public support conservation of that species and their habitat, and by doing so protect other species sharing the same habitat or vulnerable to the same threats.

Significant mammal additions in FY 2018 and expectations for FY 2019 include a male Asian elephant, a baby gorilla, clouded leopards, a female amir tiger and a male arbor seal. Zoo staff expects successful breeding for the carnivores (lions/tigers and cheetahs), giant pandas, and pinnipeds (sea lions and seals). The addition of large animals increases feeding costs for meat, fish and other food items. An aging herd of female elephants requires increased medical care as well. The Zoo is home to the oldest elephant in country, at the age of 72 years old, which is impressive because the median life expectancy of elephants being 40 years.

The Zoo welcomes more than two million visitors every year. The Zoo continues to expanded its on-site efforts to engage visitors in unexpected ways, using temporary exhibits and art installations. For example, NZP acquired the talents of Mathew Willey to create a giant mural called “Good of the Hive.” Mathew is building awareness of the importance of bees by committing to painting 50,000 honeybees, the number of bees necessary to form a thriving hive, in murals around the world. Also new at the Zoo are Matthew’s Bending Hive sculptures near the lower Zoo entrance which were installed for the opening of the Conservation Pavilion and the Me and the Bee playground.

Panda House — More than a simple refresh, the NZP re-energized and revitalized the Panda House exhibit. Highlights include a bamboo bench for visitors to rest, brighter lighting, new photos, a stunning mountainside mural, a beautiful new color scheme, new videos, enhanced content, and more. In addition, new interactive features teach guests about the other animals that share the giant panda’s habitat, while testing the visitor’s knowledge. Visitors will be urged to help pandas find healthy bamboo and avoid construction and roads, watch the intensity of a panda’s jaws when it eats bamboo, and increase their understanding of the animal care team, why research is so important, and why pandas matter.

Smokey Bear — Timed to coincide with the 75th anniversary of the Smokey Bear fire prevention campaign, this bilingual English/Spanish exhibit will celebrate the real Smokey who lived at the National Zoo, SCBI fire ecology and ForestGEO projects, and Smokey Bear as one of the world’s most recognized symbols. Plans include installation of a six-foot sculpture of Smokey and many of the “Only You Can Prevent” campaign posters. With funding from the U.S. Forest Service (\$21,000), the exhibit will be installed, where Smokey lived at the Zoo. Opening is planned for Memorial Day weekend.

This summer the Zoo will present *Dinosaur Zoo Live*, an experiential theatre production featuring a large-scale cast of life-sized dinosaur puppets, and a massive outdoor exhibit featuring six giant animatronic dinosaurs that move and roar.

NZP/SCBI deploys multiple outreach channels to further engage the public upon arrival at the Zoo. Visitor surveys reveal that interaction with a keeper or volunteer interpreter has the most impact in educating the public. Keeper demonstrations are the most impactful of all interactions, so each day the keepers host a variety of experiences, from fish feeding in Amazonia to elephant training and sea lion demonstrations. Since keepers have many other responsibilities and their availability is limited, NZP/SCBI organizes and focuses the energy of an extensive volunteer community, using resources from concessions income. Volunteer interpreters are on the front lines of engaging the public in connecting to the animals that they see. Paid staff train the interpreters to focus on messages most relevant to the animals visitors see, and assure that interpreters are well-versed on the challenges facing these species in their native environments.

In FY 2020, the Zoo will continue its internal customer service initiative to provide staff with meaningful ways they can improve the guest experience. This internal training program is essential to help staff use customer service best practices to guide interactions and underscore conservation messaging.

However, neither keepers nor interpreters can be available for each and every visitor. Therefore, on a daily basis, digital signs help provide visitors with maps of exhibits and facilities, schedules of activities such as keeper demonstrations, and more in-depth information about the animal collection. NZP/SCBI will continue to develop its digital program and will install new signs as funds become available.

In FY 2018, the Zoo upgraded one of its most popular exhibits and brought back the Zoo's first webcam, which, when it launched in 2001, was the first use of webcams as an online engagement tool at zoos across the country. Since then, the NZP has upgraded its naked mole rat exhibit and installed a webcam to allow online visitors to enter the fascinating world of this amazing species that may even yield clues to curing cancer. Since September of 2018, the webcam has had more than 70,000 views.

Even more visitors come through NZP/SCBI's, active website. Since the beginning of FY 2018, the NZP/SCBI website experienced 19 million page views during nine million sessions — five times the number of in-person visitors in the Park. In FY 2018, NZP webcams were viewed nearly five million times by more than one million people. Two years after launching an award-winning website, NZP/SCBI continues to use new technology that is more mobile friendly, allows for easier updating of content, and enables NZP/SCBI to leverage the interest in the website through a deeper engagement with users. NZP webcams attract and

retain visitors, but also serve a dual function at NZP/SCBI. First and foremost, webcams allow keepers to safely monitor animals during critical times such as illness, pregnancy and birth. Second, the public webcams bring the animals to the public even when the viewers cannot visit in person. NZP/SCBI's goal is to continue expanding its webcam program for the public, including the aforementioned naked mole rat cam as well as a new sloth bear cam.

In addition to its website, NZP/SCBI has a robust social media presence with a combined following of nearly 1.2 million across Facebook, Instagram and Twitter platforms. Digital outreach through social media includes Facebook Live broadcasts, original videos, and thoughtfully developed content focused on raising awareness of the NZP/SCBI's conservation programs and connecting online visitors to the animals in the Zoo's care. Original video content created in FY 2018 includes in-depth videos on key conservation programs, including Asian elephants, scimitar-horned oryx, amphibians, naked mole rats, gorillas and cheetahs.

NZP/SCBI leverages online platforms for citizen science as well. SCBI is the co-creator and leader of eMammal, a regional wildlife project that uses citizen scientists and trail cameras to monitor wildlife across public lands in the mid-Atlantic states. In the past five years, volunteers have captured more than two million wildlife images which have been checked by experts and deposited within a Smithsonian digital repository. This has been recognized as one of the top citizen-science programs in the country.

- **Strengthen Core Foundations of People, Places, and Fiscal Resources for Mission Success**

Past years have seen significant upgrades to NZP/SCBI's capital infrastructure.

Currently, the NZP is requesting funds to replace failed/failing building infrastructure components and systems at the Zoo police station, as well as to provide egress and accessibility upgrades.

The National Zoo's Conservation Biology Institute Center for Species Survival studies rare and critically endangered species, reproductive sciences and biomaterial mysteries. The Center will be a home to the Genome Resource Bank, which will contain germ plasm, DNA samples and cell lines of hundreds of species from around the planet. The scope includes major infrastructure renewal of mechanical, electrical, fire-alarm and life-safety upgrades, roof and façade repairs, window replacement, accessibility improvements, restroom modernization, code compliance, and laboratory improvements.

"Me and the Bee" play space, which opened at the Zoo in the summer of 2018, includes sculptures, play structures, and interpretive signage with educational content to encourage visitors to build connections with bees. Guests

will learn about bees as pollinators and the important role they play in the food chain, understand the impacts humans have on bees, and help protect bee populations. A pollinator garden with native flowering plant species is located next to the play space to reinforce the educational component.

The next planned major public-facing exhibit renovation is of the historic 1928 Bird House and surrounding plateau, which will turn the facility into an educational celebration of birds and bird migration. This exhibit is essential to tell that important story.

Planning a Zoo renovation is a major undertaking that must ensure the safety of the existing live collection on exhibit. Construction on the Bird House began in FY 2018 and due is for completion in 2021.

This budget request includes an increase of \$500,000 to support the welfare and care of the animal collection.

MEANS AND STRATEGY

The health, well-being, and safety of both the animals and staff of the NZP/SCBI are its highest priority. SCBI is world-renowned for its efforts to research, breed and reintroduce some of the world's most critically endangered species, including the scimitar-horned oryx, Przewalski's horse, the golden-lion tamarin, black-footed ferret, red-crowned cranes, and many others. Accepted standards or best industry practices for medical care, husbandry and safety for Zoo animals are continually increasing. For example, federal and state regulations require intensive animal quarantining and screening procedures to prevent disease transmission to livestock, people, and other animals in the living collection.

In addition, increased diverse threats, such as Highly Pathogenic Avian Influenza, require staffing to respond to new requirements and maintain a viable collection. Furthermore, new veterinary medical procedures, diagnostics and testing require advanced medical equipment and expertise. Breeding and research protocols designed to save endangered species from extinction also require new, more time-intensive, sophisticated management approaches to ensure the safety of animals and staff. Finally, when every birth of an endangered animal may impact the survival of a species, new and labor-intensive approaches are needed to provide life-saving veterinary care and hand-rearing that means the difference between an animal's life and death. For these reasons, NZP/SCBI must strategically augment staffing with a select number of well-trained animal care professionals and veterinarians — staff who are essential for ensuring that NZP/SCBI successfully achieves its vital mission of saving species and enlisting public support for that purpose.

EXPLANATION OF CHANGE

The National Zoological Park (NZIP) is requesting a funding increase (+\$500,000) to provide the needed resources for the NZIP's Smithsonian Conservation Biology Institute (SCBI, in Front Royal, Virginia) breeding facility. SCBI is world-renowned for its heroic efforts to research, breed and reintroduce some of the world's most critically endangered species into the wild, including Przewalski's horse, the golden-lion tamarin, black-footed ferret, scimitar-horned oryx, and red-crowned cranes, among others. Federal and state regulations require intensive animal quarantining and screening procedures to prevent disease transmission. Increased disease threats, such as highly pathogenic avian influenza, require additional contract support to respond to new requirements and maintain a viable collection. In addition to the live collection, NZIP/SCBI has a growing biological materials collection and the requested resources will enable the Institution to continue managing that important collection.

NONAPPROPRIATED RESOURCES — General trust funds support salaries and benefits of the director and general operational requirements for adequate animal care, professional training in conservation sciences, and animal acquisitions. Donor/sponsor-designated funds support the costs related to specific programs and projects, including: field and captive studies on Sahelo-Saharan antelopes, amphibians, cheetahs, giant pandas, Asian elephants, tigers, and clouded leopards; ecological studies on migratory birds; and the documentation and monitoring of biodiversity and habitat quality in selected sites around the world. A large percentage of these funds supplement federal funding for renovating and modernizing NZIP/SCBI. Private donations for multiple small- to medium-sized projects or for the extensive Bird House renovation fund a portion of construction costs and support all exhibit interpretive design and implementation. Government grants and contracts support a wide array of scientific studies on the biology and habitats of endangered and threatened species. Concessions, such as food and retail shop sales, fund the NZIP/SCBI Information Technology Support and Help Desk, exhibit maintenance, visitor services, volunteer programs, and communications outreach.

SMITHSONIAN ENVIRONMENTAL RESEARCH CENTER

	APPLICATION OF OPERATING RESOURCES									
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS		INTERAGENCY	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	32	4,227	10	1,124	12	2,727	25	2,017	24	1,861
FY 2019 ESTIMATE	32	4,227	10	1,025	12	2,800	25	2,100	24	2,300
FY 2020 REQUEST	34	4,487	10	1,150	12	2,900	25	2,300	24	2,400

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	23	3,274	23	3,274	0	0
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	0	0	2	260	2	260
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	2	135	2	135	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	7	818	7	818	0	0
Total	32	4,227	34	4,487	2	260

BACKGROUND AND CONTEXT

The Smithsonian Environmental Research Center (SERC) is a leader in research on land and water ecosystems in the coastal zone. SERC's innovative research and unique setting advance basic environmental science in the zone where most of the world's population lives, and provides society with the knowledge to solve the environmental challenges of the 21st century.

Research and discovery remain the core activities at SERC. Scientists use the unique site on the shore of the Chesapeake Bay, and other sites, including the Smithsonian Marine Science Network, to investigate the ecological interconnections of aquatic, terrestrial, and atmospheric components of complex landscapes, with comparative studies on regional, continental, and global scales.

SERC maintains a vigorous professional training program dedicated to producing the next generation of scientists. Through its efforts to achieve extramural funding and establish external partnerships, SERC hosts a large number of undergraduate interns, graduate students, postdoctoral Fellows, and visiting scientists, with success in reaching candidates from underserved communities.

SERC has also started a process to redevelop its programs for public engagement. School-based programs, serving thousands of children annually, continue to be a major emphasis of SERC's public efforts. In addition, SERC has expanded its public outreach by incorporating new citizen-science programs and enhanced volunteerism.

SERC will continue to update and streamline management systems and functions, and advance construction of its Facilities Master Plan. In FY 2019, SERC completed a retrofit of its main administration office building to a more energy efficient operation, using the existing geothermal field to provide heat exchange for heating and air conditioning, thus reaffirming the Center's commitment to a more sustainable operation. Other projects in progress include developing a campus-wide stormwater management plan, design of the Green Village to provide more housing for a growing number of visiting and collaborating scientists and students, and much-needed new support for the Smithsonian Facilities staff.

The FY 2020 budget request includes an increase of \$260,000 and 2 FTEs to support the Strategic Goal of Expanding Digital Technologies at SERC.

MEANS AND STRATEGY

SERC has an advantage in furthering its research goals and priorities by operating its 2,650-acre site on the Chesapeake Bay. Using the unique assemblage of streams, shoreline, forests and agricultural fields, its scientists investigate the interconnections of aquatic, terrestrial, and atmospheric components of complex landscapes. SERC's research campus also supports research efforts of other collaborators and agencies (e.g., the U.S. Department of Agriculture, U.S. Geological Survey, U.S. Fish and Wildlife Service, and many universities and state agencies). SERC develops innovative approaches and instrumentation to measure environmental changes at four ecological levels (i.e., global scale, landscape ecology, ecology of coastal ecosystems, and population and community ecology), and has developed unique, long-term, and experimental data sets on environmental change. SERC has been a leader in developing the Smithsonian's Marine Science Network of sites along the western Atlantic Ocean for comparative coastal studies, as well as in developing

the Tennenbaum Marine Observatories Network. In addition, SERC is a partner site in the National Ecological Observation Network (NEON). To support that research, SERC provides a home for a forest canopy tower and a ground-based sampling array to collect environmental data that feeds a national network established to observe and interpret changes in terrestrial environments.

In addition, SERC is a principal collaborator in the global ForestGEO initiative and maintains a keystone plot that demonstrates the value of temperate forest research for global understanding of terrestrial biomes. During its more than 50-year history, SERC has built a reputation for world-class research, producing many publications that are rich in data and multi-disciplinary and integrative in analysis.

SERC's research, education, and outreach efforts are closely aligned with the Smithsonian's Strategic Plan. By building on existing strengths and special programs, SERC enhances its successful research on the following topics: land-sea linkages of ecosystems; landscape ecology of coastal watersheds; estuarine ecology; invasive species (especially in coastal ecosystems); global change impacts on biotic and chemical interactions; biocomplexity of structure and processes in key ecosystems; and community and population ecology.

Looking ahead, SERC research on coastal marine ecology will focus on four key, interrelated areas: the structure and dynamics of marine food webs; the integrity and biodiversity of crucial marine ecosystems; linkages of ecosystems at the land-sea interface; and the ecological regulation of marine biodiversity. SERC seeks to expand its expertise in the ecology of invasive species and how they affect coastal ecosystems. To implement these goals, SERC will continue to link its research with national and international research networks through the MarineGEO initiative, and enhance the Marine Science Network and the Tennenbaum Marine Observatory Network, which were conceived to coordinate and align the extensive marine research efforts throughout the Smithsonian. SERC is also developing scientific and technological capabilities in analytical chemistry, remote sensing, and instrumentation in coastal watersheds and connected ecosystems. In addition, SERC will continue working with partners in the National Museum of Natural History and the regional research community to develop DNA barcode libraries for all of the species of fishes and major groups of invertebrates of the Chesapeake Bay. This will become a shared resource for tracking biodiversity, species distributions, and foodweb structures in the nation's largest estuary.

SERC also continues to strengthen its public education and citizen-science programs. In addition to providing a public lecture series, workshops, numerous volunteer opportunities and expert consultation for the public, teachers, and public officials, SERC is open to the public six days a week. Along with offering formal programs to the public, SERC encourages visitors to explore the Center's many trails through forests and fields, as well as more than 12 miles of shoreline along the Chesapeake Bay.

SERC continues to implement its comprehensive Facilities Master Plan through projects that provide essential infrastructure improvements and allow for controlled and operationally sustainable growth during the next decade. In 2018, SERC undertook a review of its 2008 Master Plan to verify that the assumptions and decisions of the 2008 plan remain valid and appropriate. The final report for this exercise will be available in FY 2019, but the vision laid out in 2008 has been reaffirmed and continued progress to complete the plan remains a primary goal. One of the key components of the plan is the continuing focus on reducing energy and water consumption across the campus. The incorporation of sustainable improvements will ensure long-term savings in operating costs and a reduction in SERC's carbon footprint. SERC expects future projects to reach design standards that exceed those set by the award-winning Charles McC. Mathias laboratory, as the Center continues to establish its leadership in innovative design and functionality.

Finally, SERC has established management controls to ensure proper accounting for its research activities, including indirect cost recovery in its sponsored research program. Moreover, the staff strives to maintain an excellent record of safety and protection for all staff and visitors. In conjunction with the Institution's central administrative offices, SERC maintains its excellent record of property management and protection of sensitive information and data.

EXPLANATION OF CHANGE

Digitization and Database Management (+\$260,000 and +2 FTEs)

The requested increase of \$260,000 will provide funding and support for 2 FTE's for digitization and database management at the SERC. The purpose of this increase is to hire one digitization/media specialist and one database manager for SERC. Securing a digitization/media specialist will enable the SERC to coordinate SERC's public website and develop and implement a social media strategy aligned with SERC's scientific communication goals. The SERC has many research projects that generate enormous amount of data, including the Marine Global Earth Observatory. The database manager would provide a base level of IT support for Institution-wide research projects. Massive data storage and access requirements, driven by research mandates, require increased staffing to support first-class research at the Institution.

NONAPPROPRIATED RESOURCES — General trust funds support fund raising. In addition, core administrative support is funded through an indirect cost recovery derived from extramural research and education awards. Other resources include donor/sponsor-designated funds that provide essential operating support related to specific programs and projects in research, public education, and professional training. Most of SERC's scientific research program of \$6.5 million annually is supported by Government grants and contracts, in addition to the National Ballast Information Clearinghouse (funded through an interagency agreement), which was established by Congress as part of the National Invasive Species Act of 1996.

SMITHSONIAN TROPICAL RESEARCH INSTITUTE

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	191	14,486	40	2,379	35	4,996	14	1,826
FY 2019 ESTIMATE	191	14,486	42	1,957	32	4,000	20	1,876
FY 2020 REQUEST	191	14,702	42	2,055	32	4,043	21	1,970

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	114	9,564	114	9,716	0	152
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	3	200	3	203	0	3
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	5	364	5	369	0	5
<i>Education</i>						
Engage and inspire diverse audiences	2	349	2	355	0	6
Preserve Our Natural and Cultural Heritage						
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	1	128	1	130	0	2
<i>Security</i>						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	18	659	18	659	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	40	2,726	40	2,767	0	41
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	8	496	8	503	0	7
Total	191	14,486	191	14,702	0	216

BACKGROUND AND CONTEXT

In 1910, Smithsonian Secretary Charles Walcott received a request from President William Howard Taft to send a scientific expedition to Panama to study the environmental impact of the Panama Canal. The President of Panama, Pablo Arosemena, invited the Smithsonian to extend its study to the entire isthmus (1910–1912), establishing a relationship that more than 107 years later continues to be a remarkable scientific resource for both countries and the world. The Smithsonian Tropical Research Institute (STRI) is now the principal U.S. organization dedicated to advancing fundamental scientific discovery and understanding of biological and cultural diversity in the tropics, and its contribution to human welfare. STRI plays an important role for the U.S. Government and the Smithsonian by maintaining world-class research facilities in Panama, where each year approximately 1,400 resident and visiting international scientists and university students access the diverse tropical environments STRI stewards. Of these, STRI most notably serves as the official custodian for the Barro Colorado Nature Monument (BCNM) in Panama under the terms of the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, ratified by the U.S. Senate in April 1941 and codified in the Panama Canal Treaties. The BCNM is the only mainland tropical reserve under U.S. stewardship and served as the original base of operations for the 1910 expedition.

Why is the Smithsonian in Panama? What is now Panama was under water until about three million years ago. The rise of the Isthmus of Panama changed the world. It connected North and South America and separated the Atlantic from the Pacific, setting into motion global change that dramatically impacted marine and terrestrial life. STRI has been located at the heart of this event for more than a century. Its nine research facilities, situated throughout Panama's diverse ecosystems, serve as an unparalleled field research platform to investigate the critical events that shaped the world and its tropical diversity. Furthermore, the 1,400 resident and visiting scientists and students hosted by STRI each year make it a vital teaching and research platform for the nation.

Scientific Productivity

A Visiting Committee of outside experts regularly evaluates the relevance, quality, and performance of STRI scientists. In their last review, the Visiting Committee used National Research Council criteria to measure the productivity and impact of STRI science compared to 142 of the best university research departments in the United States. STRI scientists ranked first in all measures of scientific relevance (e.g., publication citations), quality (e.g., scientific honors), and productivity (e.g., publication numbers). In addition, the number of young scientists who choose STRI as the base for their graduate and postgraduate research training provides an annual measure of the relevance and quality of STRI science to the future of tropical biology and policy.

STRI's 25 staff scientists and 160 research assistants-in-residence share the science platform with scientists from the United States and international organizations. Each year, approximately 1,400 visiting scientists conduct research at STRI facilities with STRI scientists who are leaders in their fields. This collaborative effort has produced more

than 12,000 scientific publications of record during the past century, and currently results in one new scientific publication, on average, every day.

Scientific Direction

The long-term research conducted by STRI scientists and collaborators is an essential contribution to the Smithsonian Institution's newly issued Strategic Plan. STRI's strategic plan is closely aligned with the Smithsonian Strategic Plan, particularly with regard to the following: Goal 2: Catalyze new conversations and address complex challenges; Goal 4: Understand and impact 21st century audiences; Goal 5: Drive large, visionary, interdisciplinary research and scholarly projects; and Goal 6: Preserve natural and cultural heritage while optimizing our assets. STRI has invested for the long term in several core research directions. These include:

Environmental Health

The Panama Canal Watershed provides drinking water for more than one million Panama residents and sustains the Panama Canal, which is critical to U.S. trade and commerce. One-half of the watershed has been deforested. STRI's Agua Salud Project uses the Panama Canal's central role in world commerce to focus global attention on the ecosystem services provided by tropical forests in comparison with other types of land cover, providing rigorous quantitative data on an important topic much debated by policy makers. The hydrology portion of the project focuses on how forests help sustain water-related ecosystems by mitigating the effects of droughts and floods and purifying water.

Panama Amphibian Rescue Conservation Project

Amphibians are disappearing around the world. A systematic global assessment of all 5,743 known amphibian species determined that one-third of all species surveyed are in danger of extinction. What is particularly alarming to conservationists is that 122 amphibian species are believed to have gone extinct since 1980, compared to just five bird species and no mammals during the same period. The main cause of this massive extinction is the pathogenic chytrid fungus *Batrachochytrium dendrobatidis* (Bd), which causes a disease called Chytridiomycosis.

In response to the massive loss of Panama's amphibian biodiversity, due mainly to the chytrid fungus, STRI has partnered with African Safari, Houston Zoo, Cheyenne Mountain Zoo, Zoo New England, Defenders of Wildlife, and the Smithsonian Conservation Biology Institute (SCBI) to found the Panama Amphibian Rescue Conservation (PARC) project. PARC has several key goals to: prevent species extinctions by establishing *ex-situ* (quarantine) assurance colonies of endangered amphibians threatened with extinction from the chytrid fungus, which is decimating amphibians worldwide; develop tools to mitigate the disease and lead to reintroductions of the amphibians in the wild; and engage constituents to support conservation of amphibians and habitats. To date, the project has built two *ex-situ* facilities in Panama, and successfully bred more than 10 endangered amphibian species, including the Panamanian Golden Frog, a conservation flagship species now extinct in the wild. STRI scientists actively monitor disease and frog populations in the wild, use the latest molecular tools to find beneficial skin bacteria to help frogs fight Chytridiomycosis infections, research genetic mechanisms of chytrid resistance in Panamanian Golden

Frogs, and develop assisted reproduction technologies to breed frogs in captivity and cryopreserve their gametes for future use.

Monitoring Forest Health and the Global Carbon Cycle

Combining private and federal support, STRI collaborates with the Smithsonian Environmental Research Center (SERC), National Zoo/SCBI, National Museum of Natural History (NMNH) and the Smithsonian Astrophysical Observatory (SAO) to create the Smithsonian Institution Global Earth Observatories (SIGEO), the largest terrestrial-based Earth observation system in the world. Additional U.S. partners and supporters include the National Science Foundation (NSF), National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture Forest Service, U.S. Department of Energy, the U.S. Geological Survey (USGS), and the Centers for Disease Control and Prevention, as well as 80 partner institutions. STRI's Center for Tropical Forest Science, now named ForestGEO, coordinates research activities in 25 countries on 64 standardized forest parcels, ranging from two to 50 hectares, in which each tree is mapped and measured every five years. This partner-based global network of 100 partners provides rigorous, widely available, systematic data on forest dynamics and carbon budgets. These data are used by scientists and decision makers around the world to improve our understanding of tropical forests and the societal benefits derived from forests. The expanding network has yielded important new findings, such as the discovery that old trees play an important role in carbon sequestration, which was previously unknown.

Monitoring the Oceans: MarineGEO

The great success of ForestGEO led to the creation of MarineGEO, a cross-bureau program that is developing a network of marine data-collection sites studying near-shore environments. MarineGEO is the first long-term, international research program to focus on understanding coastal marine life and its role in maintaining resilient ecosystems. By specializing in coastal ecosystems — where marine biodiversity and people are concentrated and interact most — this initiative provides policy makers with the science to support innovative solutions and advance management and protection of our oceans. The network concept includes monitoring basic parameters of water acidity, temperature, salinity, specific conductivity, dissolved oxygen, and chlorophyll, with the intent of making all data available on the Web in real time. This network and the associated data sets improve our understanding of biodiversity and ecosystem processes. To collect this information, STRI has installed sensors at MarineGEO sites on Panama's Caribbean and Pacific coasts.

STRI is important because of its mission, the Institute's location in the mainland tropics on the narrow Isthmus of Panama, and its relationship with the Government of Panama. Beyond its mission for the Smithsonian, two examples of collaboration with U.S. agencies underscore the important role STRI plays in Panama. The security and facilities infrastructure of Barro Colorado Island led the USGS to establish seismic monitoring equipment as part of its Caribbean Tsunami Warning System. In addition, the Continuously Operating Caribbean GPS Observational Network (COCONet) project, funded by the NSF, has partnered with STRI in developing a large-scale geodetic and atmospheric monitoring infrastructure in the Caribbean. This infrastructure forms the backbone for a broad range of geoscience and atmospheric investigations and enables

research on process-oriented science questions with direct relevance to geohazards. U.S. and international partner agencies use STRI's marine station in Bocas del Toro as a COCONet site to monitor sea level rise and plate tectonics — the movement of Earth's crustal plates that can trigger major earthquakes.

Marine Invasions

New data are filling gaps in the understanding of the rise of the isthmus and its changing role in invasive species biology, biodiversity, and global climate. Trade through the Panama Canal increased dramatically since the June 2016 completion of the canal lock expansion project. As a result, STRI scientists and colleagues at SERC, in Maryland, are documenting the distribution of invasive marine organisms, providing an unparalleled platform to understand the biology of invasive species on a scale comparable to that of the Great American Interchange of terrestrial organisms that occurred when the rise of the Isthmus of Panama first linked North and South America three million years ago. Such research has profound implications for mitigating the problems of invasive species in the great seaways of the world, from the Panama Canal to the Great Lakes.

Marine Mammal Conservation

STRI scientists are radio-tracking humpback whales and other marine mammals, and revealed that the whales — notably mothers with calves — were at high risk of being struck by ships entering or exiting the Panama Canal. With support from Panama's maritime and Canal authorities, the International Maritime Organization approved a traffic separation scheme (TSS) in 2014, and officially implemented it as international policy. The scheme requires ships to maintain speed of not more than 10 knots from August 1 to November 30 every year, through two designated ship traffic lanes approximately three miles wide. This type of marine conservation work is a U.S. State Department priority and demonstrated that the TSS could reduce potential collisions between ships and whales by 95 percent. Additionally, the work has led the governments of Colombia, Ecuador, and Peru to collaborate with STRI and request the Institute's scientific expertise and counsel on this topic.

Establish a Living Laboratory in the Tropical Eastern Pacific

STRI is poised to take possession of Coibita Island that will provide the opportunity to develop a new *living laboratory* and basic research facilities, with the potential to become the "Barro Colorado of the Tropical Eastern Pacific." Coibita is a strategic scientific vantage point to expand the Smithsonian MarineGEO program and enhance fundamental research in a region of high biodiversity, with two layers of legal protection as part of Panama's Coiba National Park and status as a UNESCO World Heritage Site. This development represents a major step in completing our goal of two-ocean facilities, complementing our Caribbean research stations at Galeta and Bocas del Toro. Part of an undersea mountain chain and migratory corridor that links marine species from North and South America, Coibita is an ideal location to launch investigations that will provide key insights in marine biology.

The FY 2020 budget request includes an increase of \$216,000 for STRI locally hired Panama employee compensation, which is justified in the Fixed Costs section of this budget submission.

MEANS AND STRATEGY

STRI is the only major research center to locate modern scientific instrumentation and facilities at the edges of tropical forests and coral reefs. STRI staff lead internationally recognized research programs and assist scientific visitors with obtaining visas, collecting permits, transportation, housing, computing, and library needs. STRI staff are also mentors for students from universities across the United States and around the world. Panamanian staff and the support of the Government of Panama, including rent-free use of multiple properties, have fostered Smithsonian research in Panama for more than 107 years and STRI has been an exceptional ambassador of goodwill for the United States in Panama and throughout Latin America.

As part of its core mission, STRI will continue to enhance the Smithsonian's platform for long-term research on biodiversity, ecosystems, and the impacts of environmental change. This will be accomplished through novel research, education of the next generation of scientists, and the dissemination of scientific findings to its audiences.

Policy makers and scientists need long-term data on fluctuations in the primary productivity of forests around the globe, as well as information on changes in the abundance and distribution of biological diversity, to distinguish the components of global change that can be ascribed to planetary processes from those that may be caused by human activity. The Smithsonian Institution is building on its unique research infrastructure to provide the required data by expanding its global network of dynamic, long-term tropical forest plots into the temperate zone, and by collecting additional data on vertebrates, insects, and soil micro-organisms, in addition to the trees in the ForestGEO plots that scientists have monitored for more than three decades. Smithsonian researchers are answering the following questions: How are changing environments altering forest biomass? Does the rate of carbon sequestration by forests vary with latitude, hydrological condition, and soil fertility? How are the diversity and the relative abundance of forest organisms changing over time and space? What components of observed changes are due to human activities? How can people modify their behavior and economies to ameliorate any changes detrimental to global society?

STRI shares knowledge, experience, and expertise with the next generation of tropical scientists. In particular, STRI hosts more than 800 pre- and postdoctoral students each year, half of whom come from the United States. For many, their experience at STRI is their first real opportunity to be scientists. The experience is transformational. As mentors, the Institute's researchers guide these future investigators, encouraging their scientific development and challenging them to develop the scientific rigor required to make new discoveries, and to share them for the welfare of humanity.

STRI continues to work with primary school science teachers to inspire wonder and critical thinking skills in the classroom. In Panama and through digital partnerships with school districts in the United States, STRI continues to explain field and laboratory science and make environmental research accessible to teachers and students.

ENABLING STRI's MISSION THROUGH ORGANIZATIONAL EXCELLENCE

STRI continues to advance the vision detailed in the 20-year plan for upgrading its facilities, some of which date back to the pre-World War II era of Panama Canal defense. The 20-year STRI facilities plan represents an important opportunity for the Smithsonian to provide its tropical scientists with the modernized, sustainable, and state-of-the-science facilities needed to face the environmental challenges of the 21st century.

STRI also offers important facility resources for federal agencies and universities. For terrestrial research, STRI serves as the headquarters for ForestGEO, and as a base for tsunami-monitoring equipment installed by the USGS. For marine research, the access to two oceans provided by STRI marine facilities permits scientists to move between experiments in the eastern Pacific Ocean and the Caribbean Sea in a few hours, and represents a principal component of the Smithsonian MarineGEO network that extends from the Chesapeake Bay to Florida, Belize, and Panama. The recurring two-ocean theme in marine science at STRI has resulted in landmark studies of the evolution and ecology of tropical marine species and communities, as well as research funded by the NSF and the National Institutes of Health for the ecologically guided discovery of new pharmaceutical compounds. STRI's MarineGEO site in Bocas Del Toro (Caribbean) and the Naos Marine Laboratories (Pacific) provide direct access to two oceans, and take on increased importance as experimental platforms for studying the impact of climate change and ocean acidification on coastal coral reefs, sea grasses, and mangroves. Coibita Island will provide a new MarineGEO platform in the Pacific.

STRI's primary research facility on the Pacific coast of Panama is Naos Laboratories, which provides easy access to key coastal, marine, and off-shore environments. It is situated in a unique location that provides ready access to two very different marine ecosystems, in the Gulf of Panama and the Gulf of Chiriqui, including areas impacted by human activities. This facility is a key resource for a highly productive team of researchers, led by eight STRI scientific staff members working in fields such as marine biology and ecology, animal behavior, evolutionary and molecular biology, species-host interactions, species invasions, archaeology, and paleontology. This site is also essential to MarineGEO.

STRI's facilities include the Galeta Laboratory, the oldest scientific facility on the Caribbean coast of Panama. The laboratory houses a long-term environmental data operation, which monitors the most thoroughly documented recovery from a major oil spill. The current infrastructure allows staff scientists and scientific visitors to carry out research in coastal ecosystems such as mangroves, coral reefs, and sea grass beds, and on invasive species, due to its proximity to the Panama Canal entrance. Galeta is also home to one of STRI's most dynamic and successful public outreach programs.

Research conducted at both laboratories has greatly contributed to the increase of our understanding of tropical biodiversity. STRI continues to support scientific research at these sites because they offer an unparalleled opportunity to conduct evolutionary and ecological studies in contrasting environments, including comparisons of marine habitat, ecosystems, and species dynamics between these two oceans.

FY 2020 will be another year in which STRI continues to more efficiently use its available resources while at the same time adapting its work to be more cost-effective in the ever-expanding economy of Panama. STRI's organizational efforts will include continued upgrades of its physical plant by seeking to reduce deferred maintenance and to conduct more design planning. In addition, STRI will rely on its restructured organization, including its Information Technology department and Finance and Administration areas, to better and more efficiently meet the needs of its scientific computing community as well as the business needs of the Institute.

NONAPPROPRIATED RESOURCES — General trust funds support salaries for a small percentage of STRI employees involved in research, public outreach, and fund raising. Donor/sponsor-designated funds support specific programs and projects to investigate key indicators of global environmental health.

More specifically, donor-designated support also provides an endowed chair for the director of STRI, an endowed staff position in tropical paleoecology, and an endowed chair for the director of ForestGEO. With private funds, STRI has launched a new initiative to understand the critical role played by microbes in marine ecosystems, and hosts a series of postdoctoral Fellows. STRI is also leveraging additional private funding to support a new staff scientist and better understand the critical role played by microbes in forest ecosystems.

The chair in paleoecology investigates how Earth's environment has changed during the last 60 million years, in part by taking advantage of the multi-billion-dollar expansion of the Panama Canal, which exposed new fossils and geologic strata during the massive excavations. Donor-designated support also funds postdoctoral studies of the relationship between organism brain size and behavioral complexity, and postdoctoral Fellowships in tropical marine biology, using STRI's Bocas del Toro and Galeta field stations in the Caribbean and its Naos Laboratories and Coibita Island field station in the eastern Pacific Ocean.

ARTHUR M. SACKLER GALLERY/FREER GALLERY OF ART

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	45	6,273	6	3,690	55	11,296	0	81
FY 2019 ESTIMATE	45	6,273	7	2,886	57	14,299	0	241
FY 2020 REQUEST	45	6,273	7	2,973	58	14,278	0	248

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	6	1,446	6	1,446	0	0
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	0	55	0	55	0	0
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	3	267	3	267	0	0
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	16	2,200	16	2,200	0	0
<i>Education</i>						
Engage and inspire diverse audiences	5	459	5	459	0	0
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	12	1,397	12	1,397	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	3	449	3	449	0	0
Total	45	6,273	45	6,273	0	0

BACKGROUND AND CONTEXT

The Freer Gallery of Art and the Arthur M. Sackler Gallery (F|S) provide a place on the National Mall where Americans can develop their understanding and appreciation of Asia's artistic creativity and its cultural and historical traditions. A worthy goal since the opening of the Freer as the first Smithsonian Art museum in 1923, this endeavor is increasingly important in the 21st century — as Asia looms larger, more central, and closely related to the life and interests of Americans. The Museums' renowned collections enable experts and actual and virtual visitors to engage Asia's art, and gain insight into its diverse and complex populations, civilizations, religions, history, and traditions. Collections, exhibitions and programs also examine the connections between Asian and American artistic and cultural expressions.

The Museums collect, study, exhibit, and preserve exemplary works of Asian art, widely regarded as among the most important in the world, as well as works by Whistler and other outstanding American artists, provided by Charles Lang Freer's original gift to the nation. The Museums direct their combined resources toward programs that advance the knowledge of the arts of Asia, and foster understanding and appreciation for its cultures and history.

The FY 2020 exhibition schedule and complementary public programs will provide audience engagement with both historical and contemporary topics, and access to some of the finest works of art from Asia. The programming effort for the International Gallery in the S. Dillon Ripley Center, managed jointly by F|S and the National Museum of African Art, continues its second five-year phase. This gallery, with links to both Museums, allows programmatic collaboration, provides a testing ground for new types of exhibitions, and creates new opportunities to achieve the Institution's strategic goal to Understand and Impact 21st Century Audiences.

In addition, the Museums will further the strategic goal of Expanding Digital Technologies by devoting coordinated resources in FY 2020 to position F|S as a world leader in digital collections management initiatives. This will be done by maintaining 100 percent digitization as its collections grow, improving the content on the F|S website with linkages and stories between thousands of different types of records and media, and increasing the search tool functionalities for online collections. F|S will continue to expand the digitization of its publications, enhance the visitor experience with new ways to access its research and wealth of assets, ensure that online content is Americans with Disabilities Act (ADA)-compliant, and grow the accessibility-driven visitor app to cover more languages.

The F|S will also contribute to the strategic goal of Enhanced Interdisciplinary Research by maintaining its impressive record of hosting research Fellows and scholarly visitors, through its online, open-access publications, and by attracting new funding for research.

In addition, F|S will address the strategic goal of providing a nimble, Cost-Effective and Responsive Administration by continually assessing and enhancing staff development, the efficacy of its organizational structure, and oversight of internal controls.

MEANS AND STRATEGY

To achieve the strategic goal of Understanding and Impacting 21st Century Audiences, the F|S continues to direct resources to raise attendance and assert its pre-eminence in the field of Asian art by organizing and presenting high-profile exhibitions.

With a completed installation refreshment in response to visitor feedback, *Encountering the Buddha: Art and Practice across Asia* continues through FY 2020 to highlight practices and contexts from diverse Buddhist artworks and traditions. Two immersive spaces, a Tibetan Buddhist shrine room and a time-based film installation centered on the Ruwanwelisaya Stupa in Sri Lanka (related technological components and public programs), have been designed to incorporate multiple perspectives, including those of art historians, religious scholars, practitioners, and contemporary artists on the roles of Buddhist arts, shrines, and rituals. Also continuing in FY 2020, in *RESOUND: Bells of Ancient China*, musical innovations in the Bronze Age meld with today's digital technology in an interactive exploration of ancient Chinese bells. Early instruments and a bell set discovered in a Chinese tomb are accompanied by videos of ancient bells being played, musical soundscapes and visualizations commissioned from contemporary composers, and an interactive experience that correlates these ancient bells to the piano, where visitors can compose their own music. An accompanying music salon series will attract new audiences with a contemporary perspective on the exhibition.

FY 2020 will open with two exhibitions of Buddhist art from Korea that will complement *Encountering the Buddha: Art and Practice across Asia*. *Deliverance: Korean Buddhist Paintings* will be a major exhibition of Buddhist paintings of the Goryeo and Joseon in periods spanning the 14th to 20th centuries, borrowed from Dongguk University Museum in Seoul, and supplemented with loans from important private collections in Korea. Monumental altar images, sub-altar images, and small, portable scrolls created for use in specific rituals will be presented thematically. The second exhibition, *Dedication: A Korean Buddha Image and its Treasures*, will inaugurate a "spotlight" exhibition component of a five-year grant of program support from the Korean Ministry of Culture. Drawn from the collection of the National Museum of Korea, the FY 2020 presentation features a 13th century gilt wood, seated Avalokiteshvara image, displayed with the material placed inside it when it was dedicated and placed into worship. This will be the first exhibition dedicated to this subject in an American museum.

Such loan exhibitions support the F|S mission by providing the public with a broader view of the arts and cultures of Asia and a deeper consideration of topics that F|S cannot present solely from its own collections.

In the spring of 2020, to celebrate the millennium of the poet Ferdawsi's death, and on view for the 2020 Persian New Year, the F|S is organizing an exhibition on the 14th century Great Mongol Shahnama. Considered a watershed in the history of Persian painting, the dispersed manuscript is also the subject of a major publication scheduled for the same year. The F|S, home to the largest number of illustrations from the manuscript, will co-publish the study with a scholarly partner.

Also in the spring of 2020, the F|S major exhibition focus will return to the Museum's permanent collection, with a presentation to be drawn from a recent acquisition of Japanese graphic arts. *Tomioka Tessai and Otagaki Rengetsu* will introduce U.S. audiences to two major artists whose lives and works connected traditional and modern Japan, and is timed to coincide with the 2020 Washington, DC Cherry Blossom Festival. A second exhibition will display the Freer Gallery's vast collection of the artist James McNeil Whistler's watercolor works. The exhibition will be complemented by a reinstallation in blue and white porcelains and ceramics in Whistler's famed Peacock Room.

F|S continues to develop major exhibition projects and long-term exchanges in collaboration with U.S. museums, international scholars and institutional partners in China, Japan, Korea, and India. Sharing select exhibitions through multi-venue presentations is an integral component of several exhibition projects under development, and touring versions of F|S collection-based exhibitions are being developed.

In FY 2020, F|S will plan for thematic refreshes of the Freer Gallery permanent collection displays. In addition to cyclical small changes in the works of art on display due to long-term collection preservation requirements, the F|S will deploy a rolling calendar of thematic reinstallations of its collections to incorporate important new acquisitions and maintain a broad spectrum of provocative conversations about Asia and America.

F|S will further impact 21st century audiences through its groundbreaking educational and scholarly programs on the arts of Asia. These programs involve hosting a series of international conferences and workshops, and collaborating within the Smithsonian and with other outside organizations such as the National Palace Museum in Beijing, the Hermitage Museum in St. Petersburg, Russia, the New York University in Abu Dhabi, and the Sharjah Art Foundation.

The Museums will continue to push the boundaries of digital enhancements with a focus on online collections. Enabling the Museums to be the center for public engagement on the arts of Asia, the F|S website continues to undergo refinements to allow greater access to our collections, which are now fully digitized. With the help of foundation grants, the Museums launched the online publications *The World of the Japanese Illustrated Book: The Gerhard Pulverer Collection*, *Ceramics in Mainland Southeast Asia*, and *Jades for Life and Death*. In addition, in the past several years, the F|S has collaborated with the Ritsumeikan University of Japan to digitize more than 100,000 images of Japanese books of art. With the help of the Smithsonian Digitization Office, the Museums have 3D-scanned more than 50 items and will continue to roll out printable models to the general public.

F|S will achieve the Institution's strategic goal of Enhanced Interdisciplinary Research by collaborating on research projects and museum teaching seminars in universities, nationally and internationally, ensuring that F|S scholarly publications and data resources are widely available and well-known.

The Museums will continue the new accessibility initiatives, including large-print labels for major exhibitions, regular programs for disabled audiences, and an innovative gallery installation providing digital and sound interpretation of an iconic object, the Cosmic Buddha stele, for the visually impaired. In the area of K-12 education, the number of

students visiting the Museums has increased dramatically. A major focus for FY 2020 is the development of expanded online resources for K–12 educators, displaying the Museums’ world-renowned collections, with the goal of making the F|S website the premier online K–12 resource for information on the arts of Asia. The Museums will continue to offer an exciting and robust series of programs to the public, and with the move of the F|S scholarly journal *Ars Orientalis* to an open-access model, the overwhelming majority of the Museums’ publications are now freely available to the public on the F|S website. Museum staff are regularly invited to serve as advisors or trainers by museums and cultural institutions in North America and Asia.

The F|S will achieve the strategic goal of Preserving Our Natural and Cultural Heritage by continuing to devote resources to its internationally renowned conservation and scientific research department. The department is led by a director who is one of the most respected figures in the field. In FY 2020, conservators, curators, and scholarly researchers will continue to study and publish new research on the collections, largely focused on ancient Chinese art. Building on the success of the FY 2018 exhibition entitled *Secrets of the Lacquer Buddha*, research on Asian lacquers will continue to explore and educate the public on ways science can contribute to the understanding of art. The conservation department is also deeply involved in several international collaborations to develop a public-facing scholarly textile database and the definitive reference for bronze-casting. Additionally, with support from the David Berg Foundation, the F|S continues its research into Nazi-era provenance issues, further strengthening international ties developed in previous years. As Museum collections continue to grow, collections managers, curators, and conservators will collaborate to ensure that objects are properly researched, stored, preserved, and presented to our visitors, both onsite and online. Finally, the F|S will continue to cooperate with broader Smithsonian efforts coordinated with the Departments of State and Defense, and other agencies and organizations, to save cultural heritage damaged by ISIS and other combatants in Iraq, Syria, and other parts of the Middle East.

To meet the strategic goal of providing a nimble, Cost-Effective and Responsive Administration, the F|S will continue to improve its administrative efficiencies and reporting mechanisms, ensuring that its workforce is efficient and skilled, and to adopt best practices for safeguarding Smithsonian resources. The F|S continues to dedicate training funds to leadership and supervisory training to equip managers and supervisors with the information, skills, and tools needed to make effective decisions. In FY 2020, the F|S will launch a new five-year strategic plan that will align with the Smithsonian’s overall Strategic Plan. The F|S will continue to track progress against its strategic plan by using a management tracking system that links the strategic plans and goals of the Museums directly to departmental activities and outputs.

NONAPPROPRIATED RESOURCES — General trust and donor/sponsor-designated funds are generated from memberships, revenue sharing from Museum shop sales and the Smithsonian Channel; participation fees from traveling exhibition venues; special events; unrestricted and restricted gifts and grants; and endowment income. The Museums are highly dependent on nonappropriated income sources to provide the quality of exhibitions, programs, and publications expected by visitors and scholars, both online and on site.

CENTER FOR FOLKLIFE AND CULTURAL HERITAGE

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	17	3,084	8	1,665	2	1,493	4	1,569
FY 2019 ESTIMATE	17	3,184	11	1,670	2	1,023	0	546
FY 2020 REQUEST	17	3,484	10	1,385	6	2,233	3	500

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in vital arts and humanities research	1	175	1	175	0	0
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	1	155	1	155	0	0
Understand and Impact 21st Century Audiences						
Exhibitions						
Offer compelling, first-class exhibitions	8	1,424	8	1,699	0	275
Education						
Engage and inspire diverse audiences	1	200	1	200	0	0
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	4	455	4	455	0	0
Facilities and Safety						
Improve Smithsonian facilities operations and provide a safe and healthy environment	0	395	0	395	0	0
Security						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	0	100	0	125	0	25
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	2	280	2	280	0	0
Total	17	3,184	17	3,484	0	300

BACKGROUND AND CONTEXT

The Center for Folklife and Cultural Heritage (CFCH) is a research, collections, education, publications, and public programming unit of the Smithsonian Institution with the mission to “increase cultural understanding, strengthen communities, and reinforce our shared humanity” through promoting cultural heritage and diversity across the United States and around the world. It is the largest of a triumvirate of federal offices (with the Library of Congress’ American Folklife Center and National Endowment for the Arts,’ or NEA’s, Folk and Traditional Arts program) that supports traditional arts and culture in the United States and abroad. For more than five decades, the CFCH has accomplished this mission through research, documentation, preservation, presentation, education, social enterprise, and publication. It has collaborated with thousands of organizations, foundations, and governments in the United States and worldwide. The Smithsonian Folklife Festival and Smithsonian Folklife Recordings are its most visible products, reaching more than 250 million people each year and earning major recognition, including one of the first Best Practice Citizen Diplomacy awards from the U.S. Center for Citizen Diplomacy, 32 Grammy Award nominations, seven Grammys, one Latin Grammy, and 26 Independent Music Awards.

The CFCH, with its highly qualified staff, nearly one-third of whom hold doctoral degrees, and first-rate production capabilities for public events, also produces multi-media website features and publications, exhibitions, documentary films, symposia, print publications, educational materials, and more. Ethnographic research and documentation are fundamental to all of its products and anchor its active engagement in high-profile international cultural heritage policy forums. Its Ralph Rinzler Folklife Archives and Collections house, preserve, and provide access to its world-class collections. Professional training efforts offer opportunities for more than 130 interns each year and include hosting advanced study Fellows from countries around the world.

The FY 2020 budget request includes an increase of \$300,000 for the annual Folklife Festival to comply with rigorous new National Park Service regulations governing the use of the National Mall. This increase is further justified in the Fixed Costs section of this budget submission.

MEANS AND STRATEGY

Research, production capacity, and entrepreneurial resource leveraging are the keys to how the CFCH accomplishes its core mission. Earned revenues cover the costs of 35 percent of its staff, create its public products, and deliver them to a broad national and international public of more than 250 million consumers. Institutional collaboration and major public impact nationally and internationally are also key to fulfilling its mission. Institutional collaborations (with more than 100 partnerships in the past eight years), fund raising, and mission-driven business activities leverage the

Center's modest federal investment many times over to reach millions of people per year.

The CFCH achieves this through the Smithsonian Folklife Festival (with 10.36 million visitors on site and online), Smithsonian Folkways Recordings (with more than 251 million listeners via recordings, radio programs, downloads, and audio streams), websites and social media (with 8.74 million visits), the Smithsonian Cultural Sustainability Initiative, and other products. The CFCH also periodically applies its event production capacity to put on other major, national cultural events consistent with its mission, such as the National World War II Reunion, the First Americans Festival for the opening of the National Museum of the American Indian, and programs for the Olympic Games and presidential inaugurations. In 2018, the CFCH finalized its second five-year strategic plan, which sets ambitious goals for the future and harmonizes its work with the Strategic Plan of the Smithsonian as a whole; this realignment can be seen in the reallocation of funds across program categories. As of 2017, the CFCH had met all the major goals of its first strategic plan, some two years ahead of schedule. In 2019 and 2020, the CFCH will collaborate with at least seven Smithsonian units, 35 nonprofit organizations, at least two other federal agencies, and four foreign countries to create and deliver programmatic content.

The 2020 Smithsonian Folklife Festival will focus on the intersection of traditional cultural knowledge, music, and environmental change as part of the One Smithsonian initiative called Conservation Commons. Organized in partnership with individuals and organizations around the globe, the Festival will explore how communities have developed and used traditional knowledge about the environment to manage environmental changes in their locales. Current plans include program highlights on indigenous communities, Pacific island nations, the United Arab Emirates, and more. The Festival has already partnered with the Department of Energy's Solar Decathlon to share the traditional design skills of architecture and building arts with the public as part of this program. In the last week in June and the first week in July, participants will learn from each other by sharing their successes, challenges, and opportunities. Festival visitors will interact directly with practitioners and consider the role that traditional knowledge of the environment plays in their own lives.

Also in 2019 and 2020, the CFCH will further harness the power and reach of the Web to broaden access to Festival content far beyond Washington, DC, through programmatic features preceding, during, and following the 10-day Mall event. The CFCH will accomplish this by further increasing the interactivity of its websites, aggressively aiming to increase visits to all of its websites in 2020.

Folkways extended its impact in 2019 with the publication of four landmark boxsets (Pete Seeger, Hip-Hop, Social Power of Music, and New Orleans Jazz Festival). In 2020, Smithsonian Folkways Recordings will continue its *African American Legacy* and *Tradiciones/Traditions* series of African American and Latino

music, producing at least six albums of new material. In addition to these landmark releases, Folkways will release an additional 20 recordings in FY 2020.

Folkways will also continue to extend its reach to millions more listeners, distributing almost 4,000 albums (60,000 tracks) of audio to teachers, students, scholars, and the general public. Digital distribution will expand further, opening new horizons for the creation and delivery of the Center's educational content via downloadable audio streams, "podcast" feeds, and multi-media video features. Folkways will also continue to grow its 245 million-plus circulation of digital content from non-Smithsonian websites such as iTunes U, and SoundCloud, which will extend its reach to more than 100 countries. It will continue to expand its collaboration with private partners to deliver the entire Folkways collection to more than 560 libraries throughout the North American continent and beyond.

A third signature program, the Smithsonian Cultural Sustainability Initiative, invigorates the Center's long-established commitment to community engagement, cultural documentation, and support of cultural vitality. Four ongoing five-year programs respond to the urgency of the need to save endangered languages and cultural expressions and the associated loss of their knowledge. This includes a USAID-funded "Integrated Development Program to Preserve Cultural Heritage and Improve Sustainable Livelihoods in Ethnic Tibetan Communities in China" and "My Armenia," which is linking cultural heritage preservation with sustainable tourism development in innovative ways. The third is a privately funded research initiative for "Sustaining Minority Languages in Europe" (SMiLE), which is part of the Smithsonian's larger Recovering Voices Initiative. Finally, in 2018, CFCH initiated a collaboration with the Royal Textile Academy of Bhutan, a national center focused on weaving and other folklife; this project is also funded through a gift. Similarly, new project opportunities present themselves regularly.

Center curators and research staff will continue to publish books, articles, and Web features, and make professional presentations at gatherings of specialists. In 2014, the CFCH set aggressive publication targets, and by the end of FY 2016 Center staff had published 111 research-based products. The CFCH's cultural heritage policy team will continue its vital participation in national and international UNESCO cultural heritage policy formulation by consulting with the U.S. Department of State, cooperating with our national and state folklife colleagues, and collaborating with other national and international organizations.

The yield from ethnographic research and multi-media primary sources will add to the Ralph Rinzler Folklife Archives and Collections' strategically important holdings of music and cultural traditions from the United States and around the world. Both the Folklife Festival and Smithsonian Folkways draw from and contribute to the world-class holdings of the Ralph Rinzler Folklife Archives and Collections. Containing 16 record labels, more than a half-century of documentary research, and extraordinary records of grassroots cultural traditions from around the globe, it provides a *sine qua non* folklife resource for both researchers and the public. In

recognition of its important holdings, UNESCO inscribed the Moses and Frances Asch Collection in its Memory of the World Register in 2015. The Folklife Archives will tackle four main challenges in 2020 — accessioning the vast collections associated with the acquisition of Arhoolie Records; assessing, cataloguing, preserving, and making available endangered, valuable paper and audiovisual holdings; setting priorities for handling delicate and critical collections materials; and transferring audiovisual collections from their current media to ensure their survival. In 2019, the CFCH is moving entire collections from its usual repository, which underwent substantial infrastructure improvements. With support from the National Collections Program, all collections were rehoused in state-of-the-art cabinetry, which marks a significant improvement in the physical care of these priceless collections. Central funds from within the Institution will further support the Rinzier Archives' digitization and dissemination efforts.

The CFCH has played a major role in the new One Smithsonian strategy outlined by the Strategic Plan. The Center proposed and then led the implementation of the Smithsonian Year of Music. Center staff contributed to the implementation of the American Women's History Initiative and recruited a new curator of American women's music to ensure ongoing engagement on this important topic. The Center simultaneously collaborates with the Asian American Pacific Center, National Museum of African American History and Culture, National Museum of American Indian, National Museum of Natural History and the Smithsonian Latino Center with internships and program initiatives, including the Mother Tongue Film Festival. Center staff also share approximately one publication per week with Smithsonian.com. Having reached more than 239 million users in FY 2018, the Center is actively supporting the Institution's goal to reach one billion users through a Digital First Strategy. Similarly, the Center is now leading one interdisciplinary, multi-year, international research project and has submitted a grant proposal to fund a second.

NONAPPROPRIATED RESOURCES — General trust funds support salaries and benefits of approximately one-quarter of the CFCH's personnel, and revenues from Folkways Recordings pay 35 percent of all staff salaries and expenses. Donor/sponsor-designated funds cover costs related to specific projects such as the Smithsonian Folklife Festival, some research efforts, and several other educational programs. By the end of FY 2019, with support from the Smithsonian National Campaign, the CFCH raised more than \$9 million, more than 200 percent of its goal, to support the Center's mission.

COOPER HEWITT, SMITHSONIAN DESIGN MUSEUM

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	36	5,061	25	4,754	25	6,204	0	164
FY 2019 ESTIMATE	36	5,086	30	4,375	22	6,975	1	125
FY 2020 REQUEST	36	5,086	30	4,600	27	7,475	1	100

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in vital arts and humanities research	4	350	4	350	0	0
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	1	105	1	105	0	0
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	1	125	1	125	0	0
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	4	390	4	390	0	0
<i>Education</i>						
Engage and inspire diverse audiences	3	260	3	260	0	0
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	7	2,096	7	2,096	0	0
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	11	1,115	11	1,115	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	4	475	4	475	0	0
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	1	170	1	170	0	0
Total	36	5,086	36	5,086	0	0

BACKGROUND AND CONTEXT

Cooper Hewitt, Smithsonian Design Museum (CHSDM), in New York City, is one of two Smithsonian museums located outside of Washington, DC. CHSDM is the only museum in the nation dedicated exclusively to historic and contemporary design. Its collection is international in scope and encompasses 212,000 objects representing 30 centuries of design, from China's Han Dynasty (200 B.C.) to the present. The Museum presents compelling perspectives on the impact of design on daily life through educational programs, exhibitions, and publications. After a major renovation, the Museum reopened in 2014, changing the way the Museum inspires, educates, and empowers people through design.

As the design authority of the United States, CHSDM's programs and exhibitions demonstrate how design shapes culture and history — past, present, and future. To achieve the Institution's strategic goal of Impacting 21st Century Audiences, the Museum will continue its dynamic exhibition programming and active roster of educational and public programs, as well as expand the number of programs offered in venues outside the New York metropolitan area in 2020. Together, these programs will help CHSDM engage larger, more diverse audiences, and fulfill its mission to serve as a catalyst for design education throughout the nation and internationally.

The Museum devotes resources to ensure the advancement of knowledge in the humanities by fostering a greater understanding of the role of design in everyday life and its impact on shaping the built environment of the past, present, and future; and to encourage the “by-products” of design thinking — such as creative problem solving and teamwork — in other disciplines and areas of life, through interactive, engaging, in-person and online experiences.

MEANS AND STRATEGY

In FY 2020, Cooper Hewitt will continue to transform the Museum visit from passive to participatory with the most innovative, educational, immersive and interactive exhibitions for the public, focusing on the design process. In addition to *Nature — Design Triennial*, which opened in FY 2019, the Museum will present exhibitions on contemporary Muslim fashions, designer Willi Smith, and the Museum's award-winning installation from the London Design Biennale, *Face Values*. An interactive pen will continue to enhance the visitors' experience by letting them “collect” and “save” objects from around the galleries.

CHSDM resources will continue to support our strategic goal to Enhance Disciplinary Research, ensuring the advancement of knowledge in the humanities through exhibition-related and collections-oriented scholarly research to create the most innovative and educational exhibitions for the public.

To achieve the goal of Preserving Our Natural and Cultural Heritage, the Museum continues to acquire objects for its internationally renowned permanent

collection. With the digitization of the collection completed, the Museum continues to expand its online programs, such as the Object of the Day blog and channels for all exhibitions. The Museum will continue its more than 30-year partnership with the New School/Parsons with an on-site graduate program focused on the history of design and curatorial studies, which will give students and scholars access to objects in CHSDM's collections.

CHSDM will inspire, educate and empower audiences through design by offering educational programs and content in a variety of formats. The goal across all of the programming is to deliver content relevant to the program participant's level of understanding of design and design thinking. The Museum will engage inter-generational audiences that include students, educators, emerging designers, design professionals and the general public, through beginning, intermediate and advanced programs in design. All programs will focus on using objects in the collection or on view in an exhibition as points of inspiration and reference; with the broad goals of developing creative problem-solving and critical thinking that can be applied in any field. The Museum will continue its traditional offerings such as design field trips, family programs, docent-led tours, and public programs. The Museum is also committed to making its programs and content nationally accessible. In addition, the Museum plans to make its educational opportunities available to a much broader audience through online platforms such as the SI Learning Lab.

CHSDM will also continue to offer nationally recognized design thinking-focused professional development workshops for K–12 educators from across the country, leveraging its world-renowned design collection.

To further the Smithsonian's goal of Enabling Cost-Effective and Responsive Administration, CHSDM will enhance its reputation, and that of the Smithsonian, by continuing to secure significant media coverage across national and international print and digital platforms such as *The New York Times*, *The Washington Post*, and *The Wall Street Journal*, as well as general interest publications and those relating to all fields of design, and increase the Museum's social media presence. CHSDM will maintain and cultivate substantive relationships with the public, its existing membership community, state and local governments, children, educators, business leaders, and designers.

NONAPPROPRIATED RESOURCES — Nonappropriated resources support 70 percent of the Museum's operating budget. General trust funds are generated from memberships, Museum shop sales, admissions, special events, and unrestricted contributions. General trust funds support salaries and benefits of administrative personnel, development and business activities, and other program-related costs. The Museum also raises funds from private sources to support research, exhibitions, public programs, and administrative functions. This includes securing contributions for new exhibitions, educational initiatives, and public outreach. Donor/sponsor-designated funds are essential to support exhibitions and educational initiatives. In addition, significant endowment gifts support research, exhibitions, public programs, and administrative functions.

HIRSHHORN MUSEUM AND SCULPTURE GARDEN

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	37	4,534	5	3,836	21	8,724	0	2
FY 2019 ESTIMATE	37	4,544	7	4,100	24	8,500	0	10
FY 2020 REQUEST	37	4,544	7	4,223	24	8,500	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in vital arts and humanities research	5	475	5	479	0	4
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	1	125	1	130	0	5
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	3	530	3	530	0	0
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	11	1,309	11	1,300	0	-9
<i>Education</i>						
Engage and inspire diverse audiences	2	190	2	190	0	0
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	8	1,035	8	1,035	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	7	880	7	880	0	0
Total	37	4,544	37	4,544	0	0

BACKGROUND AND CONTEXT

The Hirshhorn Museum and Sculpture Garden is a leading voice for contemporary art and culture, providing a national platform for the art and artists of our time. The Museum seeks to share the transformative power of modern and

contemporary art with audiences at all levels of awareness and understanding by creating meaningful, personal experiences in which art, artists, audiences, and ideas converge. The Hirshhorn enhances public understanding and appreciation of contemporary art through acquisitions, exhibitions, education and public programs, conservation, and research.

The Museum allocates resources to further the Institution's goals so that progress toward one goal advances work toward the others. For instance, through our efforts to pursue the strategic goal of Enhanced Interdisciplinary Research, the Hirshhorn has developed a thorough expertise in conserving time-based media works that are at the forefront of contemporary art. This knowledge enables the Museum to preserve and protect these works under the strategic goal to Preserve Our Natural and Cultural Heritage, and to display these works in compelling exhibitions under the goal to Understand and Impact 21st Century Audiences.

The Hirshhorn dedicates resources to advance the Institution's strategic goal to Understand and Impact 21st Century Audiences, by presenting insightful, deeply researched exhibitions of modern and contemporary artists, many with novel thematic interpretations that receive critical acclaim from the national and international press, as well as the public. The Hirshhorn supplements these exhibitions with an active schedule of public programs, scholarly publications, and original catalogues. The Museum continues digitizing images of all its collections and using its website to reach an even broader audience both at its Mall location and around the world.

The Museum's extensive collection is central to its purpose, and, pursuant to the Institution's goal to Preserve Our Natural and Cultural Heritage, the Hirshhorn dedicates a substantial portion of its resources to the preservation of its thousands of artworks. These artworks are the highlight of collection shows, such as *Giant Steps*, which will open in October 2019 and feature masterworks illustrating the strength and depth of the Hirshhorn's sculpture collection. The strength of this collection and the need to preserve it will be highlighted significantly as the Museum moves into its fifth decade, with plans for additional showcases of its unique collection. Moreover, the Hirshhorn continues to make these artworks available to museums around the country with a very active loan program, and provides staff expertise on conservation matters to arts organizations worldwide.

The Museum contributes to the strategic goal to Understand and Impact 21st Century Audiences with *ARTLAB+* and numerous educational programs, including the gallery guide program that serves the Museum's diverse audience and encourages viewers to learn about various fields of contemporary culture. The educational programs also make strong efforts to bring non-museum education professionals into the Museum to expand on the Hirshhorn's didactic approaches. *ARTLAB+* is a digital media studio focused on serving teenagers from local, underserved communities, giving them access to professional-quality technology and art, and connecting them to artist mentors who build a community of young creators. *ARTLAB+* remains a signature achievement of the Museum, and receives

critical acclaim from the broader educational community. The program's success has attracted support from internal and external partners, which has enabled *ARTLAB+* to continue to incorporate innovative technologies and provide hands-on learning experiences to students who otherwise would not have access to such opportunities.

The Museum also pursues the goal to Enable Cost-Effective and Responsive Administration by constantly improving its financial and administrative management tools and procedures. The Hirshhorn also strives to cultivate a staff culture that is efficient, collaborative, committed, innovative, and diverse.

MEANS AND STRATEGY

In FY 2020, Enhanced Interdisciplinary Research continues as the Museum further develops a major public forum on the intersections of art, design, technology, and education, featuring international subject-matter experts and an interactive online component, effectively extending participation to audiences far beyond the walls of the Museum. Also, the Hirshhorn will continue to expand its series of online and on-site programs dealing with the role of technology and new media in contemporary art, museum culture, and digital education.

Since FY 2017, annual visitation at the Hirshhorn has grown to 1.0 million guests, thanks to the popularity of exhibitions such as *Yayoi Kusama: Infinity Mirrors* and *Rafael Lozano-Hemmer: Pulse*. The Hirshhorn continues to build and improve our visitor services support systems, increasing the use of volunteers, gallery guides and part-time visitor attendants. Through the efforts of our visitor services coordinator, the Hirshhorn has created a staff dedicated to designing, coordinating, and improving visitors' experiences. Resources support the Strategic Plan by administering products and services that broaden visitor access to public programs and engaging in-gallery experiences.

The Hirshhorn's proposed exhibition schedule for FY 2020 builds upon the mission to expand access to the arts and increase public understanding of, and engagement with, the international scope of modern and contemporary art in all of its spellbinding diversity.

- FY 2020 will open with an unprecedented outdoor installation of monumental sculptures by renowned, Korean-born artist Lee Ufan. The Hirshhorn's outdoor sculpture plaza will be devoted to a selection of Lee's elemental stone and steel sculptures, relating to and redefining the architectural space of the Hirshhorn campus.
- In mid-October 2019, the Hirshhorn will open an ambitious series of important exhibitions. *Marcel Duchamp* will present dozens of works by the groundbreaking modern artist, drawn from the world-class collection of Barbara and Aaron Levine. The exhibition will reintroduce the radical work of Duchamp to a new generation of art enthusiasts, and will serve as a

public introduction of this internationally significant collection to the Hirshhorn's permanent collection. *Duchamp* will be complemented by a re-installation of works from the Hirshhorn's permanent collection, making a larger number of Museum works accessible to the public.

- In October 2019, we will also open a new commission by the New York-based artist Pat Steir, who has represented the best of contemporary abstract painting through her signature “pours” and “waterfalls.” *Pat Steir* will be installed around one of the 400-foot inner walls of the Hirshhorn's Inner Circle galleries. As Steir's largest installation to date, this site-specific artwork will transform the Hirshhorn's curved spaces into a multi-colored, dynamic feast for the eyes.
- In February 2020, the Hirshhorn will open *Laurie Anderson*. Anderson has an international reputation as an artist who combines the traditions of avant-garde with popular culture. Anderson will create a large-scale visual and sound environment that touches on various classical and influential aspects of her practice. From intimate, personal storytelling to universal themes of power, empathy, and control, *Laurie Anderson* will take visitors on a journey through contemporary life by using audio soundscapes, theater sets, the spoken word, live performance, and cutting-edge virtual reality.

In addition to these major exhibitions, in FY 2020 the Hirshhorn will feature two exhibitions highlighting the best of emerging, international contemporary art. *Jon Rafman* will present the artist's mind-expanding video and sculptural works, most based on material pulled from the Internet, that highlight the intersection of virtual digital worlds with human dreamscapes. *In Three Acts* will be the debut installation of the first Washington, DC-based triennial of contemporary art, ranging from sculpture to painting and from music to performance. The Hirshhorn hopes to revisit these themes every three years with a carefully curated showcase representing the increasing fluidity of current artistic practice from a group of approximately 35 emerging international artists.

The Hirshhorn continues to further the strategic goal to Expand Digital Technologies by using the Museum's website to engage with local and remote audiences regarding exhibition offerings, upcoming public programs, and information about collections and artists. Content shared via the website will include audio and video from public programs, interviews with artists and curators, and searchable access to the Museum's collections. The Hirshhorn's communication procedures will diffuse deep knowledge of contemporary art and culture, whether presented in the Museum or elsewhere, and not merely describe activities in superficial terms. The Museum will continue to publish original catalogues to complement exhibitions, along with other books that examine modern art, design, and cultural shifts of the early 21st century. In addition, based on the overwhelmingly successful launch of *Hirshhorn Eye!*, our instant mobile art guide, staff will increase interaction between

visitors and the digital resources of the Museum by sharing this innovative technology across the Smithsonian and the nation.

The Hirshhorn will support the goal to Understand and Impact 21st Century Audiences with a range of programs geared toward visitors with varying levels of art experience and cultural interests, and by expanding the concept of a museum as a center of learning. As in previous years, one or more working artists will lead youth and teacher workshops for K–12 teachers and students. Artists will also present their ideas and inspirations to people of all ages in the “Meet the Artist” programs and “In Conversation” interviews and panel discussions. The Museum will continue to draw upon a wide pool of artists, researchers, and experts from unexpected fields to provide interpretive tours in the weekly Friday Gallery Talks.

In concert with educational foundation sponsors, the Hirshhorn will expand the *ARTLAB+* program throughout the Museum to create an environment where teenagers can attend workshops to learn about and explore digital media. The Museum will also sustain its “Gallery Guides” program, which brings advanced art students into the galleries to aid visitors’ critical experience with art on display, and which develops the students’ own education objectives and teaching skills. In FY 2020, we will continue to pilot programs to capture additional audiences such as: preschool-aged children, through *STORYTIME*, which explores contemporary art through stories and movement; families, through *Maker Mornings*; and youth audiences with cognitive and intellectual disabilities, through the *Expanding Pathways to Participation* program.

Also in FY 2020, the Museum will achieve the strategic goal to Preserve Our Natural and Cultural Heritage by fully activating the newly renovated office and collections storage space and state-of-the-art Conservation Lab that was relocated from the basement to the fourth floor in FY 2019. The improved space, with its natural light, greatly enhances the collections management and conservation activities. In addition, the Hirshhorn will further develop itself as a center for research and preservation of time-based media (e.g., film, digital video, and audio) artworks, by integrating the work of conservation and exhibits to provide leading-edge presentation and responsible stewardship of the analog and digital time-based media artworks in the Museum’s collection.

The Museum will also continue its efforts to photograph and catalogue the permanent collection, thereby bringing more of the collection to the public via extensive search features on the Hirshhorn public website.

Under the strategic goal to Enable Cost-Effective and Responsive Administration, the Museum will continue to pursue capital projects that merge the functional with the artistic by including artists and designers in discussions with central Smithsonian engineering staff. The Hirshhorn will continue to upgrade cellular and Wi-Fi capacity in its public spaces to improve visitor access to mobile technology and Web-based knowledge and social media platforms. The Hirshhorn administration will

continue to improve long-range program planning reviews to enhance resource allocation, funds management, and more effective cost sharing with outside organizations that support major exhibitions and programs. By identifying and working with partners in the private sector, Hirshhorn senior leaders leverage the Museum's federal appropriations to the maximum extent possible.

NONAPPROPRIATED RESOURCES — General trust funds support salaries and benefits of administrative and development personnel, as well as some programs and public relations staff, advancement activities, and exhibition and program-related costs. Donor/sponsor-designated funds support advancement, exhibitions, public programs, communications, and marketing.

NATIONAL MUSEUM OF AFRICAN ART

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	28	4,654	4	1,031	3	1,052	0	0
FY 2019 ESTIMATE	28	4,654	6	1,000	8	1,568	0	0
FY 2020 REQUEST	31	5,054	6	1027	8	1,568	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in vital arts and humanities research	3	578	3	578	0	0
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	1	133	4	533	3	400
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	3	544	3	544	0	0
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	8	1,532	8	1,532	0	0
<i>Education</i>						
Engage and inspire diverse audiences	4	542	4	542	0	0
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	5	678	5	678	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	3	432	3	432	0	0
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	1	215	1	215	0	0
Total	28	4,654	31	5,054	3	400

BACKGROUND AND CONTEXT

Africa — the cradle of humanity — is part of everyone’s heritage. The mission of the National Museum of African Art (NMAfA) is to inspire conversations about the beauty, power, and diversity of Africa’s arts and cultures worldwide. The Museum’s vision is to be the world’s leading center of scholarly and artistic excellence on the arts of Africa. The Museum accomplishes its mission and vision through effective use of its unparalleled collections, exhibitions, programs, publications, and educational initiatives, which are widely accessible and strengthened through collaborations with African, diasporic, and global arts communities. The Museum collects and exhibits ancient to contemporary works of art from the entire continent of Africa and follows best practices, including rigorous provenance research, in carrying out this work. The NMAfA’s activities and programming support the Grand Challenges of the Smithsonian’s Strategic Plan, particularly in the areas of Valuing World Cultures, Understanding the American Experience, and Magnifying the Transformative Power of Arts and Design.

A key component of Museum operations is the creation of temporary and semi-permanent exhibitions of artworks from its own collection and from other museum and private collections. The Museum’s exhibitions are supported by a broad range of educational public programming and outreach activities designed to engage the diverse local, national, and international visitors the NMAfA serves.

Substantial selections from the Museum’s large and important permanent collection of traditional and contemporary African art will remain on view in FY 2020, with periodic rotations, in the *African Mosaic* gallery on sublevel 1. In the Museum’s fountain area gallery space on sublevel 3, the NMAfA will continue to present a small exhibition entitled *Currents: Water in African Art*, which opened in FY 2016 and features aquatic-themed artworks from the permanent collection. In its large sublevel 2 gallery, the Museum will continue to present *Visionary: Viewpoints on Africa’s Arts*, a permanent exhibition, with changing elements, that features more than 300 works from the permanent collection of traditional and contemporary African arts, and highlights the Museum’s Walt Disney-Tishman African Art Collection. The *Visionary* exhibition features cross-cutting themes and includes selected dense display areas that showcase particular strengths in the Museum’s collection. In addition, the Museum has revised its popular *Looking @ Art* gallery guide to complement the NMAfA’s permanent collection exhibitions and to assist visitors in understanding the forms, materials, messages, and global relevance of Africa’s traditional and contemporary arts.

In FY 2020, the Museum’s entrance pavilion, renovated in FY 2019, will continue to present artworks from the permanent collection in coordination with a specially-commissioned contemporary installation artwork created by a noted African artist. Touch-table technology will continue to deliver an expanded menu

of options to orient visitors to the Museum's collections and exhibitions, and engage them in a range of ideas and issues regarding Africa and Africa's arts.

In early FY 2020, the Museum will continue to present its temporary exhibition *Good as Gold: Fashioning Senegalese Women*, which opened on sublevel 1 at the NMAfA in early FY 2019 and is slated to travel to the North Carolina Museum of Art later in FY 2020. The exhibition and its accompanying scholarly publication feature highlights from the NMAfA's collection of Senegalese gold jewelry, donated by art historian Marian Johnson, along with additional artworks from the Museum's art and archival photographic collections. The Museum will also continue to present the temporary exhibition *I Am: Women's Voices in the Contemporary*, which opened in late summer 2019 in the NMAfA's contemporary galleries on sublevel 1. It features selected works from the NMAfA's collection made by important modernist and contemporary women artists from Africa, and is accompanied by a scholarly publication. Staffing and budget permitting, the NMAfA will continue to present a temporary exhibition entitled *Heroes*, developed in FY 2019 by the Museum for the largest of the *African Mosaic* galleries on sublevel 1.

The NMAfA exhibition *Chief S.O. Alonge: Photographer to the Royal Court of Benin, Nigeria* will remain open at the National Museum in Benin City, Nigeria. The exhibition in Nigeria, which includes copies of Alonge photographs in the Museum's photographic archives, exhibition text panels, and other materials, will remain on view indefinitely in Nigeria and involve collaboration with Nigeria's National Commission of Museums and Monuments, training of Nigerian museum colleagues, and outreach to communities in Benin City. The exhibition includes a scholarly publication with essays by NMAfA staff and invited scholars.

Through the beginning of FY 2020, the Museum will continue to host *Striking Iron*, an important traveling exhibition developed by the Fowler Museum at the University of California-Los Angeles. It features a broad range of iron works of art made over several centuries by African blacksmiths. *Striking Iron* opened at the NMAfA on April, 17 2019 in the International Gallery on sublevel 3, a space that is jointly shared by the NMAfA and the Freer and Sackler Galleries. It runs through October 20, 2019.

In FY 2020, the Museum will open a new exhibition, *Caravans of Gold: Fragments in Time*, organized by the Block Museum of Art at Northwestern University. This groundbreaking exhibition, which includes important artworks loaned by museums in Morocco, Mali, and Nigeria, challenges the widely held bias of a timeless Africa that is cut off from the dynamics of world history. This will be the first major exhibition to take stock of the material culture of early trans-Saharan trade and to offer strong evidence of the central but little-recognized role Africa played in medieval history (the 8th through 16th centuries). *Caravans of Gold* will remain on view through the first two months of FY 2021.

The FY 2020 budget request includes an increase of \$400,000 and 3 FTEs to support the Strategic Goal of Expanding Digital Technologies at NMAfA.

MEANS AND STRATEGY

The NMAfA will achieve the strategic goal to Understand and Impact 21st Century Audiences by directing resources to activities that will result in consistently high-quality programs and larger, more diverse audiences. The Museum will provide greater Web and digital access to NMAfA collections through enhanced navigation features via eMuseum and multi-media applications, and by completing additional image and object catalogue records for the Museum's public access database. Special 3D scans of ivory works of art, completed in FY 2018, will continue to provide information on the cultural uses of ivory in Africa's historical arts, and will continue to educate audiences within the Museum and online on the importance of conserving elephant populations on the African continent. The Museum's website will continue to add content such as podcasts, blogs, Facebook, Twitter, and other social media options, as well as online educational resources and activities for teachers and younger audiences. The NMAfA will also implement an expanded social media strategy in FY 2020 to better engage audiences worldwide in the arts of Africa.

The Museum will continue to seek visitor feedback on exhibitions and programs, and implement performance assessments of its public programs. The NMAfA will also continue to engage with our diverse audiences through programming and, in particular, through outreach with teachers of primary, secondary, and college students, as well as with representatives from African immigrant and other local community groups, and to seek input from these groups for exhibitions, programs, and activities. These efforts will result in more effective planning and development of programs and services, which will enable the Museum to reach its target groups and expand its audience base. In addition, marketing strategies will continue to be reviewed and tested to determine the most effective ways to communicate with diverse audiences. Funding permitting, the Museum anticipates forging partnerships with museum colleagues and artists on the African continent.

Ongoing educational programs will include musical and dance performances, programs geared to younger visitors and family groups, such as reading, storytelling, and art-making activities, exhibition-related teacher/student workshops and teleconferences, and an annual Community Day. To attract mixed-generation and adult audiences, the NMAfA will present lectures with scholars and artists, gallery tours, community discussions, and film series linked to the ideas and themes explored in the Museum's exhibitions and reflecting current trends in African-oriented and diasporan scholarship. In addition, the Museum will continue its successful evening events, which feature special lectures and opportunities for enthusiasts of Africa and Africa's arts to gather. The Museum's leadership also anticipates continuing the popular Director's

Series, featuring the NMAfA's director speaking with leading figures associated with Africa and its Diasporas. Additionally, Museum educators will develop a range of digital K–12 curriculum materials designed to engage students and teachers in the arts of Africa.

The Museum will continue to respond to the public regarding the quality and care of collections of African art and to help people learn about African art forms, styles, materials, and contexts of use as part of museum connoisseurship and object quality assessments. To educate casual and serious collectors of African art, the Museum's website will include more useful tips on object identification, assessment, and care. Furthermore, the Museum expects to continue its successful conservation training Fellowship program, funded by a multi-year Mellon Foundation grant, which will contribute to strengthening diversity and inclusion in the field of museum conservation.

To achieve the strategic goal of Expanding Digital Technologies, the Museum will continue digitizing and cataloguing its art and photographic collections, with a focus on recent acquisitions, the Museum's collection of contemporary art, selected works from the Walt Disney-Tishman African Art Collection, and the Eliot Elisofon Photographic Archives. Digital access to these materials will facilitate research and study by students, teachers, scholars, conservators, and the public. The Museum will continue to integrate contextual photographs from the Eliot Elisofon Archives with related objects in the collection.

In FY 2020, the Museum will also devote staff resources to planning exhibitions in FY 2021 and beyond, including a possible traveling exhibition featuring major artworks from the NMAfA's permanent collection. Other possible Museum-developed exhibitions and accompanying scholarly publications include *Africa Pop*, an original exhibition built from the collections of the NMAfA with major targeted public and private loans, which seeks to look at African artists' use of irony, kitsch, and connections to comment on consumerism and international capitalism. Additional future exhibition projects under development in FY 2020 consider *Visionary Leadership* on Lozi arts and the making of a nation; *African Minimalism*; the *Mechanics of Art*; and the *Creativity of Work*. The Museum also anticipates developing a small contemporary art exhibition in the *Point of View Gallery* that will be guest-curated by a contemporary African artist and draw on the NMAfA's collection of carved ivory tusks, 3D digital scans of selected tusks, and images drawn from the Eliot Elisofon Photographic Archives.

Staff will enhance displays of permanent collection artworks and pay particular attention to audience engagement strategies. The Museum's emphasis on selected works from the NMAfA's permanent collection, displayed in galleries on all four levels of the Museum, is cost-effective and designed to attract general audiences, collectors, and scholars, as well as local school groups that rely on consistently available works of art for their themed tours and curriculum projects. In addition, the Museum will continue to develop rotating exhibitions from the

permanent collection for the small *Point of View Gallery* and adjacent galleries on sublevel 1. In FY 2020, the Museum will also devote staff resources toward refining and expanding the menu of options for its touch-tables in the renovated NMAfA entry pavilion. The touch-tables are designed to orient visitors to Museum collections and exhibitions, and to engage them in a range of ideas and issues regarding Africa and Africa's arts.

To address the strategic goal of Expanding Digital Technologies, the NMAfA is focusing resources in several areas: information technology (IT) operations; staff performance and accountability; strategic audience engagement via social media; the development of curriculum materials to engage K–12 and university students in the arts of Africa; and effective relations with the media. The Museum's IT plan has integrated information technology functions for administration, collections management, exhibitions, and public access. The IT plan will continue to be reviewed on an annual basis, with updates made as needed. Museum administrators will continue to use the updated and revised strategic plan and feedback from visitor evaluations to update the NMAfA's operational plan and ensure high-quality public programs and experiences for all audiences.

The Museum integrates its strategic goals and operational plans, in concert with the Secretary's annual goals, into the performance plans for all NMAfA staff members. In addition, personnel and programmatic management responsibilities have been incorporated into the performance plans of all department heads to provide more effective review of programs, activities, and relevant projects. Educational brochures and special webpages will increase the educational value of NMAfA exhibits. Finally, the Museum will continue to forge strong relationships with the news media, corporations, foundations, community interest groups, and congressional representatives. Museum staff will accomplish this by further expanding the NMAfA's contact base and distributing more information online and via social media about Museum activities, events, and programs.

EXPLANATION OF CHANGE

The FY 2020 budget request includes an increase of \$400,000 and 3 FTEs for digitization and database management at the NMAfA. These positions are linked to all of the Smithsonian strategic priorities, particularly Expanding Digital Technologies, Understanding and Impacting 21st Century Audiences, Preserving Our Natural and Cultural Heritage, and Enabling Cost-Effective and Responsive Administration.

Digitization and Database Management (+\$400,000 and +3 FTEs)

The requested increase of \$400,000 will provide funding and support for 3 FTE's for digitization and database management at the NMAfA. The purpose of this increase is to hire two digitization specialists and one database manager for

NMAfA. The Museum houses a collection of more than 11,000 objects representing the traditional and contemporary art of Africa. The objects include sculpture, paintings, works on paper, ceramics, textiles, metalwork, mixed media, and ephemeral and time-based media. Securing digitization specialists in the Museum will enable the NMAfA to expand its digitization program to meet the growing internal and external demand for digital imagery and online access of NMAfA object and photographic collections. Whereas, the database manager is responsible for the overall management and maintenance of the Museum's collections information system (CIS), The Museum System (TMS), and the Museum's online collection site (eMuseum) that uses data and images from TMS. The database manager would ensure that database records are up to date and reflect recommended changes based on current scholarship, changing technology, and current patterns of user access. The database manager would liaise with Museum staff to ensure continual development of the collections information system, formulate and clarify procedures and standards, and provide training, support, and reports to users, as well as with outside vendors regarding CIS matters.

NONAPPROPRIATED RESOURCES — General trust funds support staff salaries, benefits, and travel. Funds raised from individual and corporate donors will support the NMAfA's major exhibition efforts, including exhibition-related publications, educational programming, and outreach initiatives. Corporate and foundation sponsorships also support the planning and development of exhibitions, including installation expenses and exhibition-related public programming, travel, and curatorial collaborations.

ANACOSTIA COMMUNITY MUSEUM

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	19	2,405	3	524	0	128	0	113
FY 2019 ESTIMATE	19	2,405	3	490	0	150	0	65
FY 2020 REQUEST	19	2,405	2	494	0	200	0	45

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in impactful scientific research and discovery	2	345	2	345	0	0
Engage in vital arts and humanities research	1	152	1	152	0	0
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	3	429	3	429	0	0
Exhibitions						
Offer compelling, first-class exhibitions	2	101	2	101	0	0
Education						
Engage and inspire diverse audiences	3	399	3	399	0	0
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	5	414	5	414	0	0
Facilities and Safety						
Improve Smithsonian facilities operations and provide a safe and healthy environment	1	69	1	69	0	0
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	2	496	2	496	0	0
Total	19	2,405	19	2,405	0	0

BACKGROUND AND CONTEXT

The Anacostia Community Museum (ACM), the first federally funded community-based museum, was founded on September 15, 1967. As the Museum's 50th anniversary commemoration draws to a close, so does the strategic planning process that it undertook to set the stage for ACM's next 50 years. From this planning phase, ACM has emerged with a new vision of urban communities activating their collective power for a more equitable future. ACM's revised mission to achieve this vision is to use a local lens to illuminate and amplify stories that resonate nationally and globally. By sharing diverse perspectives, ACM envisions healthy neighborhoods that are empowered to work together to solve urgent issues. To execute this mission and vision, the Museum will expand its connections with audiences, document and present community stories with social impact, deepen partnerships, and strengthen its organizational infrastructure.

MEANS AND STRATEGY

Based on its newly revised mission and vision, the Museum is working to realign resources and priorities in early FY 2020. This will position ACM to fulfill goals outlined in the strategic plan as well as achieve the following priorities outlined in the Institution's Strategic Plan: engaging and understanding 21st century audiences; catalyzing conversations; collaborating with the Washington, DC public school system; and employing a digital-first strategy.

As a trusted and inclusive center, ACM seeks to inspire communities to take action and is an incubator for the next generation of civically engaged citizens. ACM's research, exhibitions, public programs and collections are shaped by the local metropolitan community. As nearby neighborhoods undergo social, economic, and environmental changes that individuals alone cannot address, there is a need for communities to bring together their combined knowledge and strengths. As a Museum that convenes people and ideas, ACM documents and preserves communities' memories, struggles, and success, and offers a platform where diverse voices and cultures can be heard.

ACM leverages mutually beneficial partnerships and networks that strategically expand the Museum's engagement, both locally and nationally. These partnerships include other Smithsonian entities, scholars, community organizations, and residents employing a community-driven model. Instead of following traditional museum methods, ACM engages in community collaboration and co-creation, exploring social issues that impact everyday lives. Additionally, Museum efforts focus on meeting people within the neighborhoods where they live, work and go to school, through increasing access of online content and neighborhood-based programming.

Enhanced Interdisciplinary Research

In FY 2020, the ACM will enhance its interdisciplinary research with three projects: Urban Waterways; Women's Environmental Leadership Initiative; and DC Eats: Food History, Culture, and Justice.

Urban Waterways

For the past nine years, the Smithsonian's ACM has led the Urban Waterways Project, a collaborative research and educational initiative. The project was formed within the larger context of debates and discussions surrounding the restoration and development of the Anacostia River, and seeks to explore the many ways urban residents engage with and advocate for the health of their waterways and communities. The Urban Waterways current network includes Pittsburgh, Baltimore, Spartanburg, Biloxi, Gulfport, Los Angeles, Honolulu, and London, focusing on frontline communities most affected by development and environmental impacts.

Women's Environmental Leadership Initiative

This initiative is designed to build the capacity for future environmental leadership by forming a national network of established women environmental leaders with emerging and aspiring leaders for in-person discussions to exchange best practices, wisdom, and experience. The outcome of these discussions is the collective development of solutions to local community issues.

DC Eats: Food History, Culture, and Justice

This project documents the history of food communities in the greater Washington, DC area while engaging with constituents and stakeholders to improve understanding of — and spur action toward — a more equitable food landscape. Food is at the heart of community, and what people eat both shapes and is shaped by the community in which it is made and consumed. Washington, DC is home to a diverse population and food scene, but it is also home to the nation's most extreme income inequality. This research and exhibition project explores the city's rich food history, but also reveals how issues of inequity inform Washington, DC's food landscape today.

Understand and Impact 21st Century Audiences

Digitization/Web Support

The ACM will continue to ensure that digital content, both collections- and research-based, is properly formatted and tagged for use across all digital delivery platforms. Accordingly, the refresh of the ACM's website is in line with the Museum's strategic planning period. In its current state, the website is outdated and lacks the content and interactive experience expected by 21st century users. As the Museum's digital storefront, the website will create a positive first impression for online visitors

seeking information about the ACM. The website also serves as the platform for collaborative projects with community organizations and individuals. The refresh process will happen in multiple phases to ensure all background workings of the website integrate seamlessly with ACM social media platforms, internal Smithsonian databases and partner sites. The ACM also continues working on plans to introduce a new website to support the Urban Waterways project.

Pop-up Programming

“Pop-up” exhibitions and programs around the Washington, DC metropolitan area will give the ACM the opportunity to respond to real-time topics and to test technologies that create engaging, immersive experiences. As the ACM moves to align operations with its new community-driven, grassroots model and strategic plan, creating physical space outside of the Museum’s Anacostia location is very important. Pop-up programming lends itself to our goals of increased visibility and accessibility. The quick turnaround and short lifespan of these projects will allow the Museum to be flexible and relevant while demonstrating an understanding of current community happenings and priorities. The ACM will require additional human capital and financial support to effectively produce pop-up programming.

Exhibitions

A Right to the City — After a half-century of population decline and disinvestment, Washington, DC and similar urban centers around the country have been witnessing a “return to the city” — with rapidly growing populations, rising rents and home prices, but also deepening inequality. *A Right to the City* explores the history of neighborhood change in the nation’s capital, but also its rich history of neighborhood organizing and civic engagement that transformed the city in the face of tremendous odds. With a focus on a diverse range of neighborhoods across the city, the exhibition tells the story of how ordinary Washingtonians have helped shape and reshape their neighborhoods in extraordinary ways — through the fight for quality public education, for healthy and green communities, for equitable transit and development, and for a genuinely democratic approach to city planning.

Education

Urban Gardening Initiative — The ACM’s Urban Gardening Initiative has two major components. The first is designed for teachers to easily introduce classroom activities and integrate them in the Washington, DC public school curriculum. Garden programming will incorporate a variety of classroom subjects, serving as a reminder that knowledge and skills do not operate in isolation but have a real-world application. Hands-on experience will engage various learning styles and strengthen the sense of community among students as they work toward a common goal of stewardship for their garden and their larger community. Classroom activities will encourage them to question and explore the origins of their food, the cultural practices of their forebears, and the importance of healthy eating. The second component of this initiative is the

ACM Community Garden. The Museum has partnered with “Garden Guru” Derek Thomas and Dr. Robin Davisson to build an on-site garden for the surrounding community to nurture. The ACM will also work with community organizations to build and maintain new gardens in an effort to make fresh food available in urban areas identified as “food deserts.”

Teen Initiative — In its revitalization process, the ACM has started a new teen initiative geared toward encouraging civic engagement, providing access and educational opportunities, and promoting creativity among young people. The Youth Advisory Council collaborates with local schools and youth organizations. Students work together to create a signature project (such as short-term exhibition and community archiving) for their peers each semester. They are also responsible for assisting ACM staff with youth outreach, engagement, and program development.

Preserve Our Natural and Cultural Heritage

Collections

The ACM is committed to improving stewardship and increasing public access to its collections. The Museum’s major priority is to continue to digitize collections and develop its online portal to make hundreds of high-quality images and records available through the Smithsonian’s Collection Search Center and TMS database.

The ACM’s collections highlight the importance of local, family, and community history, and the value of both ordinary and extraordinary things in shaping our society. The ACM believes in sharing authority with and respecting the expertise of our community collaborators. A key initiative is focused on collaborating with communities in the identification and development of the collection related to the pressing issues of the day.

Enable Cost-Effective and Responsive Administration

Currently, leadership change is under way at the ACM. The Smithsonian is undertaking a recruitment process with search committee and a nationally focused leadership search to identify candidates for the position of Museum director.

As the strategic planning process comes to a close, the focus of planning now shifts to change management, which is crucial to the success of ACM. This includes engaging with leadership and key stakeholders, properly aligning goals and priorities with Museum operations and activities, and staffing alignment, ownership and training.

A key effort in FY 2020 is the launch of an activation and communication campaign to articulate ACM’s identity and focus, informing current as well as new audiences about new programming and activities. The Museum will use findings from the strengths, weaknesses, opportunities, and threats (SWOT) analysis to build a new communications department, which will play a key role in increasing local awareness of

the Museum and its mission. This effort will be essential in building participation and financial support for future activities. This plan is multi-media and multi-platform in nature.

NONAPPROPRIATED RESOURCES — The ACM's financial strength is closely tied to its strategic revitalization. In FY 2020, advancement staff will leverage the Museum's new direction and model to excite current donors while attracting new ones through the development of a comprehensive fundraising plan. The ACM also sees the activation and communication campaign as a key component to fund raising, as enhanced and widespread awareness will lead to better connections with community partners and local entities for giving and resource sharing.

ARCHIVES OF AMERICAN ART

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	17	1,933	3	723	17	2,241	0	13
FY 2019 ESTIMATE	17	1,933	3	854	19	2,508	0	0
FY 2020 REQUEST	17	1,933	3	890	20	2,685	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	3	372	3	327	0	-45
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	1	111	1	112	0	1
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	1	88	1	91	0	3
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	10	1,020	10	1,039	0	19
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	2	342	2	364	0	22
Total	17	1,933	17	1,933	0	0

BACKGROUND AND CONTEXT

Founded in 1954, the Smithsonian's Archives of American Art (AAA) is the world's pre-eminent and most widely used resource for original papers and other primary records documenting the visual arts in the United States. By collecting, preserving and making available more than 20 million unique letters, diaries, photographs, financial records, sketchbooks, scrapbooks, and the like, AAA shares and exemplifies the Smithsonian's mission for "the increase and diffusion of knowledge."

To achieve the Institution's strategic goal to reach one billion people a year with a digital-first strategy, AAA continues its ambitious digitization program, begun in 2005, to provide online access to a significant portion of its extensive holdings. AAA's website will continue to improve delivery of unprecedented numbers of new digital files, the core of which represents AAA's innovative work to digitize entire archival collections, representing hundreds of linear feet of materials, along with descriptive information, and provide engaging content, online exhibitions, and robust search and reference services.

In addition, AAA's Lawrence A. Fleischman Gallery in the Donald W. Reynolds Center (DWRC) continues to reach new and diverse audiences, enabling the Archives to Understand and Impact 21st Century Audiences, another top strategic goal.

The strategic goal of Preserving Natural and Cultural Heritage while optimizing our assets will be achieved by continuing to implement preservation actions based upon results derived from comprehensive and systematic collection assessment surveys. AAA will continue to focus on decreasing the backlog of unprocessed collections and audiovisual and born-digital holdings.

AAA will provide a nimble, cost-effective, and responsive administrative infrastructure by regularly assessing and enhancing staff development and maintaining conscientious oversight of internal controls.

MEANS AND STRATEGY

AAA will achieve the Institution's goal to Understand and Impact 21st Century Audiences by continuing to direct resources to optimize its presence in the DWRC and specifically by presenting compelling exhibitions in its Lawrence A. Fleischman Gallery. The exhibition *What is Feminist Art?*, planned for FY 2020, will complement the National Portrait Gallery's concurrent exhibition on the women's suffrage movement and speak to the goal of creating One Smithsonian with collaborative programming.

Also in FY 2020, the Archives will play a major role in the Lenore Tawney retrospective at the John Michael Kohler Art Center in Sheboygan, Wisconsin, and Smithsonian American Art Museum's fiber art exhibition, by providing archival material, essays and other scholarly contributions to these exhibitions. In addition, through public programs, professional presentations, online exhibitions, and loans to other museums and institutions worldwide, AAA will continue to widen its audience and provide the public with a greater knowledge of the history of visual arts in the United States.

In FY 2020, the Archives will continue to refine the new design of its website. The website will be enhanced to promote public access and engagement. The staff, working with public focus groups, will refine the collections' search and

browser interface and social media, incorporating emerging trends and technologies as well as responsive design. AAA will continue to encourage public visits to its website by adding finding aids for processed collections; tens of thousands of images of digitized documents; transcripts and audio excerpts of interviews conducted for the Archives' Oral History Program; audio and video recordings; and online exhibitions.

Also, in FY 2020, AAA will continue to develop the Terra Foundation Center for Digital Collections with ongoing support from the Terra Foundation for American Art and other funding streams in the private sector. This effort, in combination with digitization completed for reference requests, exhibitions, loans, and special projects, will add an estimated 150,000 digital image files and continue to bring increased public Web access to AAA collections. In addition, AAA will continue developing its internal digitization and Collections Information System (CIS) application to ensure proper collections documentation and support increasingly complex workflows, as well as to provide proper logging and accessioning of materials in born-digital formats. These efforts will enable AAA to track the life cycle of all collections and oral histories from pre-acquisition to storage and access. AAA will leverage its investment in the digitization of its collections by participating in the Smithsonian's Enterprise Digital Asset Network (EDAN) architecture, the Digital Asset Management System (DAMS), the Smithsonian Transcription Center, and other Smithsonian digitization program initiatives.

In FY 2020, AAA will continue to take a leadership role in developments and enhancements of SOVA (Smithsonian Online Virtual Archives), a transformative online portal to thousands of archival finding aids and associated digital content contributed by archival units across the Smithsonian and maintained centrally by the Office of the Chief Information Officer. In support of SOVA, the AAA will participate in the implementation of ArchivesSpace — a shared software and database collections information and management system that will be adopted by all Smithsonian archival units.

In addition, in FY 2020, the Archives' goal will be to process at least 10 percent of AAA's backlog, or about 800 to 900 linear feet of archival collections, resulting in new, fully searchable finding aids on AAA's website. Finding aids will provide online access to numerous previously hidden collections in the backlog, including audiovisual collections, as well as support online digitization of on-demand requests and the online navigation of fully digitized collections. Processing workflows will continue to integrate accelerated processing and preservation strategies to diminish the current backlog and prevent a new backlog.

Furthermore, in FY 2020, the Archives will continue focused efforts to develop holistic strategies, workflows, and internal policies and guidelines which effectively address collecting, preserving, describing, and making available collections materials created in born-digital formats.

AAA will continue to strengthen its collections stewardship through its ongoing, comprehensive collections assessment surveys for manuscript collections and at-risk audiovisual and born-digital holdings. Reports generated from this data provide valuable information about AAA's backlog and holdings, so the Archives' staff can make informed decisions about the best way to allocate limited resources. AAA will continue to take a leadership role in working with the larger Smithsonian archival community to initiate and implement Institution-wide comprehensive collections assessment strategies and systems. AAA will also continue to initiate and support Institution-wide archival backlog processing projects to develop an online shared toolkit of documented methodologies, tactics, and efficiencies.

In addition, AAA will continue to support researchers with access to its collections and microfilm in its Washington, DC and New York City research centers, as well as other U.S. research centers, by providing remote reference services through its Web-based "Ask Us" form and interlibrary loan program.

Finally, AAA will Enable Cost-Effective and Responsive Administration by continuing to implement the strategic goals of the Smithsonian, and by adopting national best practices and standards to safeguard and make the most cost-effective use of limited Smithsonian resources.

NONAPPROPRIATED RESOURCES — General trust funds support AAA's advancement office, including salaries and benefits. Donor-designated funds support specific programs and projects, including exhibitions, internships, production of oral history interviews, collections and media processing, and publication of the *Archives of American Art Journal*. In FY 2020, the Archives will continue to work closely with its advisory board to position this publication as the leading scholarly journal in the field of American art history. In the past four years, AAA has expanded and diversified its board, increased the number of outstanding submissions, raised the visibility of the journal, strengthened the Archives' relationship with the University of Chicago Press, and established more cost-effective, multi-year contracts for design and printing.

Also in FY 2020, the Archives will continue to develop strategies for sustaining its digitization program by building an endowment to support essential staff and implementing improved rapid-capture technologies and techniques. Funding from the Terra Foundation for American Art and other donors supports AAA's digitization program. AAA will continue to raise money for digitization, oral history projects, collections management, and general operating expenses.

NATIONAL MUSEUM OF AFRICAN AMERICAN HISTORY AND CULTURE

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	145	33,079	1	1,666	27	12,084	0	0
FY 2019 ESTIMATE	141	32,617	4	1,816	47	16,497	0	0
FY 2020 REQUEST	141	32,617	3	567	54	18,806	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in vital arts and humanities research	20	4,494	20	4,494	0	0
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	5	1,420	5	1,420	0	0
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	4	398	4	398	0	0
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	11	3,439	11	3,439	0	0
<i>Education</i>						
Engage and inspire diverse audiences	26	4,275	26	4,275	0	0
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	22	3,484	22	3,484	0	0
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	6	1,074	6	1,074	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	40	9,323	40	9,323	0	0
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	7	4,710	7	4,710	0	0
Total	141	32,617	141	32,617	0	0

BACKGROUND AND CONTEXT

The National Museum of African American History and Culture (NMAAHC) was established by Congress to document, collect, conserve, interpret, and display the historical and cultural experiences and achievements of Americans of African descent. In late 2016, the NMAAHC, the first environmentally sustainable, “green” museum on the Mall, opened to the public, providing a national meeting place for all people to learn about the history and culture of African Americans and their contributions to every aspect of American life. This Museum seeks to help all Americans and others around the world remember these contributions, and in so doing, stimulate a dialogue about race and help to foster a spirit of reconciliation and healing. As the only national museum devoted exclusively to documenting and exploring African American history and culture, the NMAAHC bridges a major gap in our national memory by creating exhibitions and programs focusing on a wide arc of history and looking deeply into slavery, Reconstruction, the Harlem Renaissance, the great migrations during the World Wars, the civil rights movement, and other issues of the 21st century. The Museum also celebrates African American creativity and cultural expressions through art, dance, theater and literature.

FY 2019 is the NMAAHC’s third year of operations as a fully functioning museum. The NMAAHC opened to unprecedentedly large crowds in 2016. In FY 2017, the building, exhibitions, information technology (IT), and the Sweet Home Cafe have all been award-winning entities, creating even more excitement, and the shops enjoyed unexpectedly large crowds. FY 2019 marks the continuation and expansion of major initiatives which fulfill the mission of looking at American history through the lens of African American history and culture: the building of a national collection; continued development of IT and digitization programs; and the development and implementation of a robust research and education program centered on specific subject matter such as the study of the African Diaspora. FY 2020 will include the establishment of two new centers of scholarly studies which will address the African Diaspora and African American Innovation and Entrepreneurship.

MEANS AND STRATEGY

In FY 2020, the Museum’s top priority will be to engage in long-term planning for the enhancement of its research and education programs. This includes the following activities: continuing to grow domestic and international partnerships to further generate support for the Museum; designing and developing temporary and traveling exhibitions for display throughout the United States; expanding scholarly research in all areas of African American history and culture; and developing robust education programs for the public, educators, and students.

The NMAAHC’s second priority is the continued establishment of centers of scholarly research. Three have already been set up: the Center for the Study of Global Slavery; the Center for African American Media Arts (CAAMA); and the Center for the Study of African American Religious Life. FY 2020 will see the establishment of the Center for the Diaspora as well as the Center for African

American Innovation and Entrepreneurship.

The Museum's third priority is to implement the next phase of its IT and digitization programs which have made the NMAAHC the first fully digital museum on the Mall. In FYs 2018 and 2019, the Museum expanded its infrastructure to support programming and interactive components throughout various galleries and the Oprah Winfrey Theater. IT upgraded its people-counting system and implemented the Dexibit analytics dashboard to better manage capacity and monitor operations. In addition, the Museum introduced new visitor engagements with Pepper-the-Robot and the Rosa Parks Virtual Reality experience and the Poor People's Campaign Augmented Reality experience.

In FY 2020, IT will work closely with the NMAAHC education and curatorial affairs department to broaden the Museum's reach and impact by leveraging technology and platforms to enhance education programs, promote engagement with visitors before, during and after a visit, and provide meaningful interaction with accessibility features that engage a global audience.

The NMAAHC will expand its interactive, online, and mobile offerings to include innovative and engaging content that further connects visitors to collection objects and topics of interest. The Searchable Museum is a multi-year project that aims to make all of the Museum's content — including collections, scholarly efforts, and interpretive content for all exhibitions — searchable and discoverable through digital channels. In FY 2020, the NMAAHC will launch The Searchable Museum *Slavery and Freedom Prototype* that will match the rich, interpretive experience of the Museum's *Slavery and Freedom* exhibition and eliminate geographic barriers by giving full online access to foundational historical narratives, collections, and educational resources. With improved access, the Museum will engage more people and foster a more inclusive culture by reaching out to traditionally underserved audiences locally, nationally, and globally.

The Museum's mobile platform will further extend the NMAAHC's digital presence with applications which enhance the gallery experience and allow visitors to engage with the Museum's content and themes anywhere, using a variety of devices. The NMAAHC continues to develop Digital content management systems and interfaces in cooperation with the Office of the Chief Information Officer (OCIO) as models for the rest of the Smithsonian to use in other museums.

The fourth priority for the NMAAHC is to continue to fulfill its mission of collecting and documenting African American history and culture by supporting its collections and digitization unit endeavors to achieve excellence. In FY 2020, the Museum will implement policies and guidelines to make the collections fully digitized and accessible to the public by FY 2024.

To achieve the strategic goal of Enhanced Interdisciplinary Research, the Museum will use its resources to build on active areas of research.

In FY 2020, curators and museum specialists will continue to conduct in-depth studies of the Museum's historical artifacts, fine art, archival materials, photographs, film, and other media collection areas, with the continued goal of helping all Americans understand the role of race and racism in the past and in the present. All research products will have a digital component to enhance scholarship and help the Museum reach one billion people a year with a digital-first strategy. The NMAAHC will share this research with scholars and the public through Web-based platforms, public and educational programs, and publications. The curatorial team will also focus on contextualizing crucial contemporary events as they relate to the African American experience, with the aim of catalyzing new conversations and addressing complex challenges.

Key initiatives and programs in FY 2020 include the following.

The NMAAHC will advance the work of the Center for the Study of Global Slavery (CSGS, founded in 2017).

The Center's Slave Wrecks Project network will continue research, preservation, capacity building, and community engagement (including exhibition advancement, education and public programming) efforts in South Africa, Senegal, Mozambique, St. Croix, Cuba and North America. The Center's participation in the Global Curatorial Project will advance into the exhibition-concept phase and the Center will inaugurate a Community Collections Program, fostering connections to communities affected by slavery and its consequences.

The CSGS will continue to sponsor the Museum's participation in a second key interdisciplinary collaboration related to slavery: the Global Curatorial Project. In FY 2020, this will include a continuation of script generation, design, solidification of locations for international exhibitions, and several international workshops and loan agreements, as well as arranging travel and shipping for an exhibition tentatively planned for 2021–22. This international group includes: Brown University; IFAN Museum in Senegal; the National Museum of World Cultures in Amsterdam; the International Slavery Museum in Liverpool; Iziko Museums of South Africa; Shackles of Memory in Nantes, France; The Royal Museum for Central Africa in Belgium; The Legacies of British Slave Ownership; and University College London.

The NMAAHC will expand its research base by creating two additional scholarly research centers. The new centers will address African American diasporic history and culture and African American innovation and entrepreneurship. Various publication projects under way for FY 2020 will engage and inspire audiences while disseminating information to the public.

To achieve the goal of Expanding Digital Technologies, the NMAAHC will direct its resources as follows:

Digitization and Web Support —

In FY 2020, the Web and Emerging Media team within the Museum's Office of Operations, Information Technology, will continue to collaborate with the NMAAHC

Office of Curatorial Affairs, Education, and Public Affairs to develop educational, informative, and engaging digital experiences as part of the Smithsonian's "digital-first" strategy in support of the Institution-wide goal of reaching one billion visitors a year across all platforms. The Museum's website and mobile applications will continue to focus on enhancing the visitor experience and increasing the Museum's reach and impact through the digitization of objects from the collections and exhibitions, making the Museum more accessible to a more diverse, global audience. New "digital-only" experiences, building on The Searchable Museum, will also be developed in collaboration with other Smithsonian units, which will advance other Institution-wide goals of "being one Smithsonian" and "catalyzing new conversations that address complex challenges." This will follow the model set by the Many Lenses initiative originated by the NMAAHC.

Also, the NMAAHC's IT and digitization offices will continue to create searchable and accessible digital records for collection objects, object management and high-quality digital surrogates, especially for recent acquisitions and for undigitized objects, by improving the features and functions of The Museum System (TMS) database. These will be used with a digital-first strategy to encourage new, worldwide conversations and stimulate innovative interdisciplinary research. The Robert Frederick Smith Fund for the Digitization and Curation of African American History will enter its fourth year of public programming, collection digitizing, student professionalization, and visitor engagement through the Explore Your Family History Center (EYFHC). The Community Curation Program invites individuals, families, civic organizations, and community groups to share their stories of African American history and culture through the Community Curation, Web-based platform developed using a cost-effective, flexible, and secure cloud-computing environment and standards-based open-source technologies. Digitized images, video, audio, and other media sourced from the Museum's community, collected through the Community Curation platform as well as through the Great Migration program, will all be hosted in and delivered from the NMAAHC cloud-computing environment, allowing for a more scalable, cost-effective infrastructure solution for digital storage and delivery. The result is that the Museum will offer curated and user-generated selections of collections via digital portals in the NMAAHC, on the Museum website, and through online partnerships, such as with Google Arts and Culture.

The NMAAHC will continue to make all digitized collection records and images for all unrestricted materials freely available via the Digital Public Library of America (<https://dp.la/>) and identify and participate in other platforms to make high-quality collection information and images available from many institutions with one-stop searching.

The EYFHC, located at the Museum as part of the Explore More! Interactive Gallery, provides genealogical research and public programming opportunities for Museum visitors. The Smith Fund will help support the development, operation, and management of Web-based applications for genealogical research, including the Freedmen's Bureau search application, as well as provide more cost-effective and accessible computer workstations for visitors to begin their research on site.

The NMAAHC will complete the documentation of the entire Museum with high-quality traditional and 360-degree photography, so that these images can be used for virtual Museum visits and other educational uses, and to ensure that the first few years of the NMAAHC are well-documented for the historical record.

The NMAAHC will strive to have the collections fully catalogued and photographed by the end of FY 2024 by partnering with the OCIO to run a mass-digitization project and scan up to 15,000 objects in the collection.

In addition, the Museum will increase access to the Freedmen's Bureau records by continuing a multi-year effort with the Smithsonian Transcription Center to provide word-searchable, full-text transcriptions of the records and link them to the existing genealogical index. This effort will include partnering with organizations such as the University of Maryland Institute for Technology and the Humanities, the University of Delaware's interdisciplinary Colored Conventions Project, and corporations such as DevTech, a technology services firm, to conduct Transcribe-a-Thons, where volunteers are brought together *en masse* to transcribe historical material.

FY 2020 funding will also continue to support curatorial work on developing *The Virtual James Baldwin House*, a digital re-creation of the author's home in St. Paul De Vence, France. This virtual experience will offer detailed, media-rich commentary on Baldwin's literary corpus and global impact, as well as insight into Baldwin's daily life as a writer, and serve as a showcase for the NMAAHC's significant Baldwin collections.

To achieve the strategic goal of Understanding and Impacting 21st Century Audiences, the NMAAHC will leverage its resources as follows:

Public Programs —

The NMAAHC Office of Strategic Partnerships (OSP) will continue to deliver far-reaching and transformative support for under-resourced African American and African Diaspora history and culture organizations on a regional, national and international level. OSP connects and builds awareness about the work of its participating institutions and provides access to training and resources that support and advance leaders and field-wide best practices. In FY 2020, OSP will launch a comprehensive initiative to address 21st century needs, challenges and collective issues facing historically black colleges and universities (HBCUs) and their affiliated cultural institutions and resources. The outcome of the initiative will be to strengthen the long-term institutional sustainability of these critical cultural organizations. Examples of work planned for FY 2020 include support for the Association of African American Museums (AAAM) and three ongoing programs, which we will execute in collaboration with national museum service organizations — Interpreting African American History Workshop, Board Building Workshop, and the Standards and Excellence Program for History Organizations (StEPs). The Museum will continue its collaboration with the University of Dakar to connect the university with the resources it needs to become a key partner site in the Global Slave Wrecks Project. OSP will also continue to work with the Smithsonian

Institution Traveling Exhibition Service (SITES) to launch an exhibition in Dakar, as well as assist SITES in extending access to its exhibitions for our peer African American institutions across the country.

Exhibitions —

In FY 2020, the NMAAHC will develop and produce new exhibitions. The first will be a temporary exhibition exploring the history and visual culture of film posters featured in the Earl W. and Amanda Stafford Center for African American Media Arts (CAAMA).

Another temporary exhibition, *We Return Fighting: The African American Experience in World War I*, will premiere in the NMAAHC Special Exhibitions Gallery in FY 2020. This exhibition will commemorate the 100th anniversary of African American soldiers returning from France. The exhibition will include an examination of the experiences of African Americans who fought in combat for freedom and democracy on the home front, and an exploration of the social, political, and cultural impact of World War I on African American history and culture.

In early 2019, the NMAAHC will launch a poster set version of *City of Hope: Resurrection City* and *the 1968 Poor People's Campaign* in collaboration with the SITES. In 2020, the two units will collaborate and produce a traveling version of the physical show slated to reach at least 10 venues in four years

In addition, the NMAAHC has initiated and implemented an intensive and comprehensive rotation program to replace loans and at-risk objects within the Inaugural exhibitions. The Museum has begun replacing 200–300 objects per year on a twice-yearly cycle.

The CAAMA will produce the second NMAAHC Film Festival — A national exhibition of new, emerging, and historical cinema and moving-image works that explore African American history and culture to strengthen relationships between filmmakers, the motion-picture industry, audiences, and scholars.

Education —

The NMAAHC will present an array of lectures, conferences, staged readings, film screenings, concerts, and discussions by renowned scholars, musicians, actors, artists and filmmakers to serve a diverse and broad community of learners. While programs will be presented within the Museum, Web streaming and social media will enable audiences to participate across the globe. The Museum will pilot and launch signature program series, including: *Historically Speaking*, featuring in-person discussions of published works by America's most influential scholars and public intellectuals; *NMAAHC Community Days*, presenting learning activities to help audiences of all ages take part in heritage month observances and interpret Museum collections and exhibitions; and *A Seat at the Table*, fostering social justice conversations and communal activities.

The NMAAHC Office of Education will continue ongoing educational initiatives for all audiences, locally and nationwide, by incorporating digitally based collections and exhibitions, African American curriculum development for classrooms, as well as educational programming in exhibitions and the Family Learning Center. The office will also revitalize the “*Save Our African American Treasures*” program and fully implement revised and tested visitor services operations in FY 2020.

To achieve the strategic goal to Preserve Our Natural and Cultural Heritage, the NMAAHC Office of Curatorial Affairs will use its resources to continue to identify, acquire, and process collections, and develop and refine its permanent collections. The Museum has collected nearly 37,000 objects, and in FY 2020 will continue to implement numerous collection management policies to safely handle, display, and store collections. In particular, new Archives Criteria cataloguing standards improves access and use by internal and external audiences. In FY 2020, the Museum will also continue to prepare for accreditation from the American Alliance of Museums.

The Museum will continue to develop its collections strategy to replace loaned objects in permanent inaugural exhibitions. In FY 2019, the NMAAHC will implement a written collection plan to guide its collecting activities and ensure excellence in establishing a permanent collection that supports visionary, interdisciplinary research and scholarly projects.

In addition, the NMAAHC continues to build its oral history program to capture both immediate and in-depth recordings from individuals whose stories and reminiscences will enhance the Museum's collections and research. A selection of these recordings will be processed and made available via the NMAAHC website and the Smithsonian's online Collection Search Center. Examples include: interviews that document stories of individuals who have made significant contributions to American history as: Jeannine Smith Clark, former member of the Smithsonian Board of Regents; Cecily Tyson, B. Michael, Dr. Aziza Bey and Maxine Gordon (friends of couture designer Arthur McGee); and Janice Rothschild, American civil rights activist.

In FY 2019, the Museum will make publicly available its rigorous and innovative standards and guidelines for cataloguing African American history and culture collections, which will benefit other collecting institutions with similar missions. At the same time, the cataloguing and curatorial teams will build on existing cataloguing standards to create a more inclusive, culturally responsive database. The focus in FY 2020 will be to continue creating vocabularies and cataloguing artifacts related to the African Diaspora and the African American-Latino experience.

The NMAAHC will continue to seek funding to complete the fit-out of the collections space and comply with Smithsonian Directive 600, Collections Management policy. To this end, the NMAAHC submitted a proposal for a Collections Care and Preservation Fund project, “*Preserve and Organize NMAAHC Collections in Storage*,” which was funded under the Collections Care Initiative (CCI) to aid in implementing new written policies to ensure excellence in collections handling.

Facilities Planning —

The NMAAHC will continue developing requirements that will allow the Museum to adapt the NMAAHC infrastructure and create offices, work spaces, collections storage, and other storage spaces which meet the Museum's diverse and wide-ranging needs.

The Museum will continue identifying and correcting facility deficiencies that directly impact facility planning, business, safety, and security programs.

The NMAAHC will continue to review and revise procedures and guidelines on how it functions daily in all NMAAHC facilities, and specifically with regard to the operations of internal programs and coordination with other offices that support the Museum, and management of the security and safety of its visitors and staff.

The safety program will continue to work on the NMAAHC emergency operations plan, emergency communication plan, disaster management plan, and consolidation plans to include NMAAHC staff in other facilities.

To achieve the strategic goal of Enabling Cost-Effective and Responsive Administration, the NMAAHC will use its resources to continue developing its operating organizational structure and make organizational and staffing revisions to accomplish program goals. This includes the following initiatives in the areas of technology and public affairs.

Technology —

In FY 2019, the Web and emerging media team within the NMAAHC will continue to build its cloud-based computing environment to create a more cost-effective, flexible, scalable, and secure infrastructure that supports technical innovation within the Museum. New digital-first or digital-only initiatives, using low-/no-cost open-source technologies, may be developed in this cloud-based environment to allow for increased rapid prototyping while effectively minimizing costs.

In addition, the Web and emerging media team will continue to expand its use of the Museum Interactive Support System (MISS) as a robust system of application programming interfaces and content delivery mechanisms that allow sharing of content through the NMAAHC website, interactive exhibitions, mobile tours, and other digital channels. The Museum will continue to develop virtual reality experiences and in-Museum mapping for on-site visitors and more accessibility functions for visually and hearing-impaired visitors.

The NMAAHC will empower Museum staff with technology to improve communication and collaboration, and to gain efficiencies in business processes through streamlined workflows and updated technology. After completing the SharePoint and Windows 365 upgrades, the Information Technology team will complete its SharePoint upgrade to facilitate the redesign of Sankofa, the Museum's intranet site, for improved information sharing, and implement the new business process automation

and formalized project management and reporting tool Workfront.

In support of Management Operations, Museum staff will continue to develop the Dexibit dashboard of operations and visitation data and analytics in FY 2020. This dashboard will give staff access to information and insight on pass usage, real-time visitation, dwell times, and scheduled events, and help staff manage Museum facilities and ensure visitor safety.

Public Affairs —

The NMAAHC will continue to educate the public about African American history and culture through media, marketing and social media channels. Building on the work of the second year, public affairs specialists will develop visibility campaigns for the Museum's exhibitions, collections, educational initiatives, advancement activities, and centers of study and public programs. Media cultivation and outreach, marketing, communications, and social media are avenues the NMAAHC will continue developing to build and maintain a positive brand.

NONAPPROPRIATED RESOURCES — General trust funds support salary and benefit costs for the Museum director and other program-related costs. Donor/sponsor-designated funds support: salaries and benefits for development staff; costs associated with fundraising goals; publications and special events for exhibition openings; costs related to specific programs and projects, including educational programs, advertising, production of fundraising proposals, and member- and donor-related special events; and outreach activities.

**NATIONAL MUSEUM OF AMERICAN HISTORY
KENNETH E. BEHRING CENTER**

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	164	25,373	28	4,418	58	9,635	0	123
FY 2019 ESTIMATE	164	25,373	28	4,750	60	10,000	1	75
FY 2020 REQUEST	165	25,583	28	4,800	65	15,000	1	75

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in vital arts and humanities research	22	3,450	22	3,450	0	0
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	11	1,800	12	2,010	1	210
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	13	2,430	13	2,430	0	0
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	46	6,750	46	6,750	0	0
<i>Education</i>						
Engage and inspire diverse audiences	6	930	6	930	0	0
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	45	6,848	45	6,848	0	0
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	3	590	3	590	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	14	1,735	14	1,735	0	0
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	4	840	4	840	0	0
Total	164	25,373	165	25,583	1	210

BACKGROUND AND CONTEXT

The National Museum of American History (NMAH), Kenneth E. Behring Center, inspires a broader understanding of our nation's history and its people through research, exhibitions, collections activity, education, and public programs. The Museum's primary goal is to tell an overarching American story that is inclusive of and respectful and compassionate to all the peoples in America who were here, who came here, and who were brought here. Through incomparable collections, rigorous research, and dynamic public outreach, the Museum explores the infinite richness and complexity of American history. The NMAH helps people understand the past to make sense of the present and shape a more humane future.

More than four million people visit the Museum every year, in addition to more than 8.5 million people who visit the Museum online annually, making the NMAH the most visited history museum in the world. We present our history as substantial and challenging, inviting and accessible, inspiring and wonderfully human. Together with the American people, we wrestle with the difficult issues that we have faced, and do so in an inspirational manner, aiming to influence public conversations and to make a difference in the life of the nation.

The Museum continues to enrich its presentation of the American Experience with new exhibits in the West Wing, which is part of an ongoing revitalization of the entire Museum. Each of the three exhibit floors in the West Wing is focused on an overarching and inclusive theme representing the ideals and ideas of the American experience. The first floor opened in 2015 and focused on American enterprise, innovation and invention. The second floor opened in 2017 and tells two essential American stories — the origins of the American people and the evolution of their democracy. In 2018, the Museum launched the reopening of the third floor of the West Wing with the opening of several new installations to introduce visitors to our American entertainment history exhibitions. The first phase involved the return of Dorothy's ruby slippers from the *Wizard of Oz* to display, opening introductory exhibitions of *America's Listening* and the installation of the iconic stained-glass image of *Nipper, His Master's Voice*, along with a rotating display of musical instruments from the Museum's collection, including rare Stradivarius violins in customized showcases in the *Hall of Music*.

The Museum will continue fund raising for the third-floor West Wing exhibitions and programs, which will captivate visitors with compelling stories, invaluable objects, state-of-the-art media, public spaces, and new exhibitions to make American history vital, fascinating, and central to understanding and embracing the American Experience. In the past eight years, the Museum has raised more than \$139 million for the West Wing exhibits, programs, and endowed curatorial positions to leverage the federal investment in the building's renovation.

The budget request includes an increase of \$210,000 and 1 FTE to continue building capacity to sustain a robust digitization program.

MEANS AND STRATEGY

The NMAH supports the Smithsonian’s strategic goal to catalyze new conversations and address complex challenges. Through its research, scholarship, educational programs, exhibitions, and collaboration, the Museum shares with the public scholarly insights and historical views that illustrate the richness and depth of the American experience. The Museum engages people in the telling of America’s story — interweaving multiple stories of perseverance, triumph, and optimism with those of challenge and struggle.

The Museum’s strategic plan, which establishes a vision and strategic direction, sets four key goals for the NMAH:

1. Lead the nation in Understanding the American Experience
2. Expand, strengthen, and share our collections
3. Engage diverse national and international audiences
4. Strengthen our staff and Board of Directors, and revitalize our facilities

Goal 1: Lead the Nation in Understanding the American Experience

The NMAH places a priority on engaging the public through scholarship and quality research in American history. Research is the foundation for our exhibitions and all of our programs, which portray significant eras and events from American history in the context of social, cultural, economic, political, scientific, and technological themes. The Museum experiments with innovative ways to think about and present American history as an encompassing, multi-faceted story, drawing on many strands, and illuminating many people, ideas, and experiences.

In 2019, the NMAH will open *Elephants and Us*, which will explore how the nation’s relationship with elephants has evolved over centuries from one of exploitation to stewardship. Americans, once avid producers and consumers of ivory, now take a global lead in enforcing commercial ivory bans, thwarting poachers, and protecting elephants and their habitats.

In May of 2019, the Museum will mark the 150th anniversary of the Transcontinental Railroad — a triumph of human ingenuity that connected Americans from East to West — with a display and floor maps connected to our *American Enterprise* exhibition. We will look at the hidden workers who connected the nation, including Chinese laborers, Mormons, and former Civil War veterans of Irish descent.

In 2020, the Museum will also open *In Sickness and In Health*, which will launch the first phase of experimenting with new approaches to topics in medicine, science, and technology. This will be the first of several exhibitions on the second floor of the East Wing to highlight collections and research into topics not currently covered in depth in the Museum, and will inform the Museum’s thinking about how to completely transform the East Wing as part of the fourth phase of the Public Space Renewal Project (PSRP).

In developing these exhibitions, staff will consider how the East Wing renovation can best showcase the Museum's extensive and unparalleled collection of national treasures; feature collections not previously shown or reinterpret them in new ways; and explore how exhibitions can address the Museum's mission, complement other exhibitions and programs, contribute to new scholarship, and foster the highest quality visitor experience. NMAH staff anticipate that all of these gallery spaces will feature increased use of technology to support new and innovative ways for visitors to experience and interact with the Museum's exhibitions and other content. The East Wing renovation will also return converted public spaces to their original use as exhibition galleries instead of using them for storage and other purposes.

Also, in 2019, the Museum will open one of three exhibits that are part of the Smithsonian's American Women's History Initiative, *All Work, No Pay*, in addition to working on two exhibits that will open in 2020 to coincide with the 100th anniversary of the passage of the 19th Amendment to the Constitution that granted women's suffrage. The exhibitions include *Creating Icons: How We Remember Women's Suffrage* and *Girlhood! It's Complicated*. Also, in 2020, the Museum will open *Latinos in Baseball*, an exhibition that will explore the historical role baseball has played as a social and cultural force within Latino communities to celebrate national and ethnic identities, build communities, and negotiate race and class relations in an increasingly globalized world. In addition, staff continue to develop our larger exhibitions on *Entertaining America* and a temporary exhibition gallery for a 2021 opening. All of these installations will explore how the entertainment history of the United States reflects American ideals and ideas.

In addition to exhibitions, the NMAH contributes to the discussion of the American Experience through its ongoing scholarship and research. In FY 2019, highlights of scholarly publications will include:

- Kenneth Cohen. "Material Conclusions: Old and New Arguments about Early American Material Culture," forthcoming in *Reviews in American History* 47:1.
- Kenneth Cohen. "Tracking the Language of Celebrity, 1760–1900," with Laura McGrath (Stanford) and Mark Algee-Hewitt (Stanford), article in progress, submission to *Journal of American History* expected in summer of 2019.
- Madelyn Shaw and Dr. Trish FitzSimons. "The Fabric of War — Wool and Local Land Wars in a Global Context," (Griffith University, Brisbane, Australia). *The Social Fabric: Deep Local to Pan Global: Proceedings of the 2018 Biennial Symposium*, Textile Society of America.
- Madelyn Shaw and Dr. Trish FitzSimons. "Sheep in High Places: International Diplomacy and the Wool Supply in World War I." (Griffith University, Brisbane, Australia). *Dress and War: Clothing and Textiles at Home and Abroad during the First World War Era, 1910–1920*. *Journal of the Association of Dress Historians*, London, United Kingdom.
- David Allison and Larrie D. Ferreiro. *The American Revolution: A World War*. Washington, DC: Smithsonian Books.

In addition, NMAH contributors are working on numerous substantial research projects that will lead to publications in FY 2020 and beyond. An example is the *Latinos in Baseball* initiative, which includes research, collecting, and an exhibition, and the publication of a scholarly book in FY 2020, to be titled *¡Pleibol! In the Barrios and the Big Leagues* and written by Margaret Salazar-Porzio for the Smithsonian Institution Scholarly Press.

The Museum will continue to support the development and dissemination of scholarship by encouraging staff to publish individual scholarly research as well as the results of research done for NMAH exhibitions and other projects.

Goal 2: Expand, Strengthen, and Share Our Collections

The NMAH is committed to sound collections stewardship through preservation, accountability, and increased digital access. While support for Phase IV of the PSRP for the Museum's East Wing's renovation is a primary goal, the NMAH will focus on enhancing the potential and value of its collections through intensive digitization and description efforts, increased access online, collaboration, and innovative uses of technology.

In FY 2018, the Museum continued its inventory projects to improve the process and focus its efforts. In order to address the challenge of managing a total of 1.8 million objects in the collections, the Museum continued to develop and test an accelerated approach to its inventory efforts. This is the foundation for the inventories required for the PSRP IV project. With the support of the National Collections Program, the Museum hired staff to begin that work, targeting storage areas destined for renovation. The actual inventorying will continue through FYs 2019 and 2020. This work is the essential foundation for improving collections stewardship and enhancing the value of collections over the next decade.

The decontamination and re-housing of 11,400 objects in Garber Facility, Building 18 was completed in FY 2018, with the inventory continuing into 2019. Planning is under way for similar work on the collections in Building 16; work will begin with capital projects funds and will include renovating Building 15 to serve as the swing space until permanent storage space is constructed. The renovation of Building 15 should be completed in FY 2019, with decontamination and re-housing to follow through FY 2020. All of these efforts support the Smithsonian's master plans for collections storage.

The Museum is pursuing several digitization projects to increase the richness and utility of collections information for both external and internal staff. In FY 2018, the NMAH expanded its project to digitize accession files to a more advanced, rapid-capture phase. The project has been supported by Collections Care and Preservation Funds and will continue until the bulk of the accession files are captured and made available for the benefit of inventory and reconciliation projects, as well as the ongoing, day-to-day work of the Museum (loans, exhibition, publications, etc.). More than 130,000 pages of these files have been digitized and linked to the collections database, substantially advancing access to this crucial

information resource. To increase the amount of digital content available to the public, in FY 2018 the Museum began a cross-divisional collaboration to digitize photographs and other paper-based imagery. The NMAH is using funds donated by a private sponsor to support this work, and is partnering with the Smithsonian Digitization Program Office (DPO) and Google's Cultural Institute to digitize approximately 15,000 items in its poster collection. It will also explore opportunities to apply new technologies, digital humanities, and "collections as data" techniques to leverage the digital content the Museum has created for enhancing collection descriptions, generating new knowledge, and/or connecting collections across institutions. With the hiring of a new digital archivist and Latinx archivist in FY 2019, the Museum will be poised to explore more conversations and collaborations with a variety of potential partners and communities. In FY 2020, the NMAH will use technology to further engage with diverse communities, sharing information about America's treasures with its visitors.

During FY 2018, the Museum added nearly 30,000 new records to its collections information system and exported more than 200,000 records to the Smithsonian's Enterprise Digital Asset Network (EDAN). Building on these efforts, in FY 2019, a new collections data-sharing policy will enable the Museum to make available online, through EDAN, essentially the entirety of its catalogued collection online. The Museum anticipates releasing approximately 1.2 million records and 850,000 images associated with 617,000 objects (some objects have multiple images). The availability of these records and images will enable immediate worldwide access to previously inaccessible collections, as well as set the Museum up for more digitization and data enhancement projects through partnerships and services such as the Smithsonian Transcription Center.

In accordance with the overall framework for collections stewardship, in FY 2019 the Museum will finish the revision of its collections management policy. This will clarify and simplify processes, and address the collection, preservation and use of digital and born-digital content. In addition, the NMAH will continue to implement recommendations from the Museum's Collections Review Committee report, focusing on systematic assessment of accessioning and cataloguing procedures, as well as achieving efficiencies in the review of accession-based object information. Much of this work focuses on increasing the functionality of XG, the Museum's collections information system. Loan functions were integrated in FY 2017; conservation functions were integrated in FY 2018. In FY 2019, the focus will turn to exhibit data. Taken together, the Museum's collections cataloguing and inventory projects have prepared the NMAH to efficiently support plans for new storage facilities and the renovation of the East Wing in FY 2020.

Goal 3: Engage Diverse National and International Audiences

In 2019, the Museum is launching a new audience engagement vision to better serve our guests on the Mall and our online visitors from around the country and the world. Our signature programs and digital outreach help achieve this goal by using history to reach across the rifts that divide our nation to bring Americans into

conversations with the Smithsonian and one another, exchanging ideas with new generations to search for common ground.

Each year, the NMAH trains thousands of K–12 teachers to bring American history to life by using interactive teaching methods infused with the Museum’s rich collections. Outside evaluation has shown that the Museum’s workshops have had a positive, re-energizing effect on history education across the United States. The Museum continues to add to its library of thousands of free K–12 interactive resources available via History Explorer, the Museum’s acclaimed website for teachers. In 2019, the Museum will conduct its eighth National Youth Summit (NYS) focused on women’s suffrage. The NYS is a webcast event that brings middle and high school students together with scholars, teachers, policy experts, and activists in a national conversation about important events in America’s past which remain relevant to the nation’s present and future. The Museum will also launch “Becoming US,” an inclusive and accurate online curriculum for teaching the American Experience to middle and high school students.

To celebrate the Smithsonian Year of Music and connect with audiences across the world, the Museum will present *Jazz Beyond Borders: From the Golden Gate to the Great Wall*, a 10-stop tour running through 2019. Throughout the tour, the 18-piece Smithsonian Jazz Masterworks Orchestra will partner with celebrated guest musicians to explore the global influences and evolution of this national treasure. In doing so, the orchestra champions the Smithsonian’s mission to increase and diffuse knowledge. Combining the musical prowess of our Smithsonian Jazz Masterworks Orchestra with the historical and cultural insights that only the NMAH can offer, this tour embodies the Museum’s mission to offer history-rich experiences that inspire learning and create a connected community among our audiences in Washington, DC, across the country, and around the world. Tour stops include evening concerts with acclaimed musical guests, as well as daytime educational experiences for learners of all ages. These enrichment activities are part of the orchestra’s ongoing work to exchange ideas with new generations through history-enhanced musical experiences, and to highlight the Museum’s aim of prioritizing programs for underserved communities across the nation.

In December of 2015, the Museum opened *Wegmans’ Wonderplace*, an early learning gallery. The gallery combines age-appropriate activities with Museum collections and touchable objects to provide a gateway to history and a place for children six and under to exercise their curiosity. Since opening, *Wonderplace* has served more than 300,000 visitors and has hosted special morning programming for children on the autism spectrum as well as families from the Homeless Children’s Playtime Project. It has been very well received and operates at capacity.

In 2017, the Museum opened the Wallace H. Coulter Unity Square, a program and events space that will encourage visitors to explore “The Nation We Build Together” through compelling displays and unique hands-on activities. The heart of Unity Square is a reinstatement of the *Greensboro Lunch Counter*, an object that reflects the tremendous power of the actions of everyday people. This iconic civil rights object is brought to life by a “magic mirror” that connects the actions of the four young men who sat down at the lunch counter to the larger history of participation, protest, and change in America. Unity

Square is also home to *American Experiments*, a suite of five interactive, hands-on activities which inspire visitors to talk to each other about the ideas and ideals that have shaped the country. Together, the exhibits, activities, and programs of Unity Square inspire our visitors to think about their own role in creating the nation of tomorrow.

The NMAH advances the idea of America as a place of creativity and ingenuity through the Lemelson Center for the Study of Invention and Innovation, a think-tank that launched Spark!Lab in 2015. Spark!Lab provides hands-on invention challenges to 225,000 children and families from across the country during visits to Washington, DC. Children aged 6–12 are challenged to invent solutions to real-world problems and learn that invention is a sequence that proceeds from problem identification to building prototypes to selling ideas to the market. Since opening, Spark!Lab has served more than 780,000 visitors. Building on the success of Draper Spark!Lab, the Lemelson Center team has established a national network of Spark!Lab sites. By the end of FY 2019, the Center expects to operate Spark!Labs at 12 museums and science centers across the United States.

Public programming initiated by the Lemelson Center reaches millions of Americans annually. Major initiatives in FY 2019 will include the return of the ACCelerate Festival, a partnership with the 15 universities of the Atlantic Coast Conference (ACC). The festival will feature 45 displays showcasing the intersection of arts, creativity, science, and technology, as well as special performances from the ACC schools. Additionally, the Center will host Military Invention Day, which draws active and veteran members of the armed forces to the Museum to see more than 30 displays of leading-edge military technology alongside historical innovations. Visitors also undertake invention challenges and learn about emerging opportunities in engineering and computing, as well as other subjects of interest.

Connecting with national audiences through social media is a major priority for the Museum. The NMAH nurtures lifelong learners by regularly sharing and interacting with audiences about American history objects and stories on the “O Say Can You See?” blog and the Museum’s accounts on Facebook, Twitter, and Instagram. Through its various forms of electronic and online outreach, the Museum expects to continue sharing its resources with more than 8.5 million people a year.

Goal 4: Strengthen Our Staff, Board of Directors, and Facilities

In FY 2018, the Museum continued to rebuild the scholarly foundation of its professional staff by hiring two new curators with federal funds. In FY 2019, the focus will be on planning for a number of retirements, and working to ensure continuity in key areas. In addition, the Museum has built relationships with other Smithsonian units and partnerships with outside organizations to increase available resources and leverage talents. Furthermore, the NMAH has extremely active internship and Fellowship programs, hosting more than 161 interns and 22 Fellows in FY 2018.

EXPLANATION OF CHANGE

The FY 2020 budget request includes an increase of \$210,000 and 1 FTE for digitization.

Collections Digitization (+\$210,000, +1 FTE)

The budget request includes an increase of \$210,000 and 1 FTE to continue building capacity to sustain a robust digitization program; supporting full implementation of the NMAH Digitization Plan; providing access to the Museum's collections, research and programs by creating, managing and promoting the Museum's digital assets; integrating digitization into core functions; providing responsible stewardship over the Museum's digital assets; and managing and refining collections data.

NONAPPROPRIATED RESOURCES — General trust funds support salaries and benefits for staff who work in administration, advancement, public affairs, and special events, as well as other program costs. In addition to restricted gifts, grants, and endowments, trust revenue sources include donations from special events, revenue sharing from business operations, honoraria for speaking engagements, and tuition reimbursements. Donor/sponsor-designated funds are used to develop, install and promote new exhibitions, fund public programs and educational initiatives, and support research, travel, and collection acquisitions. Donor-designated funds are vital to continuing the renovation of the public spaces in the Museum, including the design and fabrication of new exhibits on all three floors of the Museum's West Wing. The final phase of this will be the reopening of new exhibits on the third floor of the West Wing in 2021. The Museum's focus will then turn to the East Wing renovation.

NATIONAL MUSEUM OF THE AMERICAN INDIAN

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	216	32,671	4	1,928	25	12,162	0	99
FY 2019 ESTIMATE	216	33,648	4	1,513	30	14,584	0	49
FY 2020 REQUEST	216	33,648	4	1,337	25	9,051	0	36

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in vital arts and humanities research	16	2,660	16	2,660	0	0
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	8	1,305	8	1,305	0	0
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	17	2,279	17	2,279	0	0
Exhibitions						
Offer compelling, first-class exhibitions	27	5,639	27	5,639	0	0
Education						
Engage and inspire diverse audiences	42	5,241	42	5,241	0	0
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	32	4,338	32	4,338	0	0
Facilities and Safety						
Improve Smithsonian facilities operations and provide a safe and healthy environment	15	1,842	15	1,842	0	0
Security						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	0	977	0	977	0	0
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	46	6,555	46	6,555	0	0
Information Technology						
Improve the Institution's information technology systems and infrastructure	13	2,812	13	2,812	0	0
Total	216	33,648	216	33,648	0	0

BACKGROUND AND CONTEXT

The National Museum of the American Indian (NMAI) is committed to advancing knowledge and understanding of the Native cultures of the Western hemisphere — past, present, and future — through partnerships with Native peoples and others.

In keeping with its authorizing statute, the NMAI is one Museum in three locations: NMAI-DC on the National Mall, NMAI-NY in lower Manhattan, and the Cultural Resources Center in Suitland, Maryland. The NMAI will focus its resources to support research and exhibits concerning the cultures and histories of Native communities and to present contemporary works of art to the public. These exhibits, along with educational and cultural arts programming, attracted 1.5 million visitors in FY 2018. The offering of diverse exhibitions, cultural demonstrations, tribal festivals, educational presentations, and scholarly symposia ensures a meaningful visitor experience. Web content based on these programs will continue to reach distant “virtual visitors” to the Museum who may not be able to come to the East Coast but can still avail themselves of content developed at NMAI. Through its exhibitions and public programming, the Museum continues to present the contemporary voices of Native peoples to educate and inform the public while countering widespread stereotypes.

The NMAI also focuses on the stewardship of more than one million collection items entrusted to the Museum’s care — honoring the histories and promoting the cultural legacies of hundreds of Native nations throughout the Western hemisphere.

MEANS AND STRATEGY

To achieve the strategic goal to Understand and Impact 21st Century Audiences, the NMAI is directing its resources to: 1) activities that will result in increased visitation; 2) public programming and exhibits that will encompass information about the indigenous peoples of the Western hemisphere and Hawaii (as mandated in the NMAI enabling legislation) and that will demonstrate the presence and cultural contributions of contemporary Native peoples; 3) outreach to Native communities, tribes, and organizations through programming methodologies that include consultations, Web-based technologies, video conferences, internships, and publications; and 4) amplify the civic discourse on issues facing Native Americans by conducting seminars and symposia on matters of public interest. Major exhibitions opening or under development in FY 2020 include:

- *Stretching the Canvas: Eight Decades of Native Painting* — Since 1940, many Native artists have pushed, pressed, and expanded beyond narrow, market-driven definitions of American Indian art. Drawing from the National Museum of the American Indian’s rich permanent collection, *Stretching the Canvas* presents nearly 40 diverse, exciting paintings that

transcend, represent, or subvert conventional ideas of authenticity. (November 2019–May 2021).

- *Native New York (working title)* — Native nations of New York have changed the course of history from ancestral times to the present, and from local to global contexts. In relationship to New York’s geography, they built their own complex indigenous nations and created unique cultures. Their economic impacts changed power relations among nations in imperial Europe and fueled colonial expansion. Native alliances, resources, and civic philosophy contributed to the very foundations of the United States. As the new United States rose and expanded, it put policies and practices into place that led to the decline of Native nations — yet Native peoples devised strategies to persevere, and individuals participated in every facet of New York’s life. Today, Native nations are on the rise again in the global environment that has characterized New York since its beginnings. (Spring/Summer 2020–ongoing).
- *Preston Singletary: Raven and the Box of Daylight* — Featuring works by the internationally acclaimed Tlingit artist Preston Singletary. Countless generations of Tlingit children have heard Raven’s adventures through an oral tradition that has played an essential role in the survival of Tlingit culture by preserving its rich histories and narratives. Now, Singletary shares this story with others through a dynamic multi-sensory environment. The exhibition is organized by the Museum of Glass in Tacoma, Washington, and curated by Dr. Miranda Belarde-Lewis (Zuni Pueblo/Takdeintaan Clan of the Tlingit Nation). (October 2020–October 2021).
- *Why We Serve* — This exhibition will coincide with the unveiling of the National Native American Veteran’s Memorial on November 11, 2020. The story will trace the significant history of Native American service in the U.S. military from the Revolutionary War until today’s armed conflicts worldwide. It will include a total of 18-20 panels, supplemented by a short, in-gallery film and NMAI-produced publication. It will expand upon and add to the research and stories presented in the panel exhibition *Patriot Nations* currently traveling across the United States. (November 2020-December 2021).

The Museum will achieve its education goals by continuing to provide daily exhibit and educational programming about Native peoples of the Western hemisphere and Hawaii, thereby providing opportunities to correct stereotyping and expand public knowledge. The seven-day-a-week operation will include interpretive activities, film and video presentations, cultural arts performances, demonstrations, and resource materials about Native American history and cultural heritage. The NMAI will continue working with Native educators and cultural experts on the Museum’s National Education Initiative, “Native Knowledge 360°,” to create exemplary materials that reflect indigenous knowledge, and to develop model materials that schools across America can expand upon for their own purposes. To promote learning across

generations, the imagiNATIONS Activity Centers in NMAI-DC and NMAI-NY will introduce indigenous knowledge about Native peoples' understanding of the natural world and about American Indian civics to a growing audience of school children and Museum visitors. In addition, various tribal educational resources, including curricula enhancement materials, will be made available to teachers.

NMAI staff will continue to provide group, school, and general public tour programs, directing presentations in galleries and deploying volunteers in all public spaces and program areas to ensure maximum use of all the educational resources available to enhance the visitor experience.

Public engagement efforts will continue to bring the Museum and its resources to audiences through both traditional and Web media, and via innovative outreach and training programs. These contacts will link external communities to public audiences through technology and involvement in NMAI planning and programming.

The NMAI will continue dedicating resources to expand access to the NMAI collections online, as part of the strategic goal to Expand Digital Technologies.

As part of the Enhanced Interdisciplinary Research strategic goal to engage in vital arts and humanities research, the NMAI will continue to hire and retain the highest quality research staff and collaborate with leading institutions of learning and community-based scholars. NMAI staff will make research for film, video, audio, and photographic content developed for exhibitions available at the Museum and to Native American communities and public audiences through the Web, printed materials, and collaborative activities with other groups and organizations.

Through ongoing dialogue with Native communities and cultural experts, NMAI's collection stewards and scholars will also continue to advance the strategic goal to Preserve Our Natural and Cultural Heritage through judicious acquisition, documentation, digitization, inventory, preservation, research, security, storage renewal and enhancements, as well as increased Web access and loans to museums across the United States. This includes enhancing the collections by acquiring works that document Native experiences and expressive cultures, including the representation of modern and contemporary arts.

The strategic goal to Enable Cost-Effective and Responsive Administration will be addressed by efficiently and economically designating resources to meet the mission of the Museum.

NONAPPROPRIATED RESOURCES — General trust funds support salary and benefit costs for the Museum director and other program-related costs. Donor/ sponsor-designated funds support salaries and benefits for development staff; costs associated with reaching NMAI's fundraising goals; publications and special events for exhibition openings; costs related to specific programs and projects, including the Native American Veterans' Memorial Project, educational programs, advertising, production of fundraising proposals, and member- and donor-related special events; as well as outreach activities.

NATIONAL PORTRAIT GALLERY

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	56	6,556	3	1,931	17	4,141	0	0
FY 2019 ESTIMATE	56	6,556	3	2,476	15	2,633	0	0
FY 2020 REQUEST	56	6,736	3	3,205	14	2,470	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in vital arts and humanities research	3	401	3	401	0	0
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	2	189	2	369	0	180
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	4	433	4	433	0	0
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	18	2,070	18	2,070	0	0
<i>Education</i>						
Engage and inspire diverse audiences	7	780	7	780	0	0
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	15	1,832	15	1,832	0	0
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment						
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	6	695	6	695	0	0
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	1	156	1	156	0	0
Total	56	6,556	56	6,736	0	180

BACKGROUND AND CONTEXT

The Smithsonian National Portrait Gallery (NPG) inspires visitors from around the world by illuminating the American experience through powerful images that connect people and their stories.

The NPG strives to bring visitors face to face, literally and figuratively, with exceptional Americans and their remarkable stories across time, place, and circumstance. The NPG uses diverse approaches in visual biography to focus on changing notions of American identity, and to track evolving ideas about who is significant and has an impact on American culture. The NPG aspires to be widely known as the place that sparks thought and conversation, one that brings factual American biography into discussion of contemporary issues, and as an institution that includes diverse audiences as active participants in defining American identity through portraiture and biography.

The NPG devotes a major portion of its resources to the strategic goal of Understanding and Impacting 21st Century Audiences, thereby increasing the availability and accessibility of the NPG's collections through exhibitions, public programs, and publications. The exhibitions explore themes in history, biography, and art in a way that brings out new meaning and understanding of the American experience. The NPG's exhibitions in FYs 2019 and 2020 will take a leading role in the Smithsonian's *American Women's History Initiative* (AWHI), examining the contributions of women to shaping America. Highlights of special exhibitions planned for the remainder of FY 2019 include:

- *Black Out: Silhouettes Then and Now* — This exhibition explores the silhouette in terms of its forceful contemporary presence and rich historical roots through NPG's extensive collection of early 19th century silhouettes of Americans from all walks of life, and as seen through the eyes of four contemporary artists, using this artistic medium in bold, imaginative ways today. Following its installation at NPG, the exhibition will travel to the Mississippi Museum of Art in Jackson, and the Birmingham Museum of Art in Alabama, between April 2019 and January 2020.
- *Eye to I: Self-Portraits from 1900 to Today* — Drawing on NPG's vast collection of self-portraits, this exhibition explores how American artists have chosen to portray themselves over the past two centuries. Their representations—especially when seen together—all raise important questions about self-perception and self-reflection.
- *Portraits of the World: Korea* — Continuing NPG's international portrait series, the Portrait Gallery is featuring the work of artist Yun Suk Nam. Korea is a world leader in feminist art, and Yun Suk Nam was the first artist to investigate this theme through portraiture. Her art features non-idealized portraits of her mother that comment more generally on the

experience of women in Korean society. Although her work has been exhibited widely in Korea and Japan, this exhibition introduces her art to American audiences.

- *Votes for Women: A Portrait of Persistence* — As the country commemorates the 100th anniversary of the 19th Amendment, the NPG presents the story of the historic crusade for American women's rights, using biography and material culture to recount the heroic commitment to implementing change for women in the United States. The exhibition celebrates the many women who led the fight for women's rights in the past 200 years. This is the first of several AWHI exhibitions.
- *In Mid-Sentence* — Photographs of conversations, speeches, and press conferences are replete with words that remain unheard. The works in the exhibition depict moments of communication from teaching, protest, or confrontation to private moments and public engagements, bringing into relief the historical significance of each of these works, and providing the missing script that gives sound to the otherwise silent voices. An interactive kiosk will enliven the still images with footage of several of the represented speeches.
- *Storied Women of the Civil War* — During the Civil War era, numerous women rose to national prominence — from First Lady Mary Todd Lincoln to the actress and Union spy Pauline Cushman. This intimate exhibition includes portraits of these and other intriguing women who captivated the public while becoming sought-after subjects for Mathew Brady's camera. This is an AWHI exhibition.
- *Women of Progress: Early Camera Portraits* — In mid-19th century America, the growing presence of women in public life coincided with the rise of portrait photography. This exhibition of daguerreotypes and ambrotypes from the 1840s and 1850s features portraits of early feminist icons, notably suffragists Margaret Fuller and Lucy Stone, astronomer Maria Mitchell, abolitionist Lucretia Mott, and best-selling author Harriet Beecher Stowe. This is an AWHI exhibition.
- *One Life: Marian Anderson* — Much of what the public knows about this singer's life stems from her 1939 performance at the Lincoln Memorial. This exhibition shifts the focus from 1939 to underexplored aspects of Anderson's lifetime, examines the ways others wielded Anderson's iconic likeness as a powerful symbol in the pursuit of civil rights, and provides a more nuanced understanding of how Anderson's many roles, as singer, diplomat, and muse, helped shatter segregationist policies on and off the stage. The exhibition will be enhanced with audio and video footage of her performances. This is an AWHI exhibition.

In addition to permanent collection rotations and continuing traveling exhibitions in FY 2019, the NPG will bring in the semi-finalists' works for the on-site jury day of the Outwin Boochever Portrait Competition, begin plans to refresh *The Struggle for Justice*, and continue preparations for the reinstallation of *American Origins*.

The combined Audience Engagement Department supports NPG's goal of Understanding and Impacting 21st Audiences by defining overarching strategies that support each goal, actionable tactics for each strategy, and key performance indicators to measure success. The NPG will make further strides to raise its national visibility, as well as to increase local visitor ship and engagement. The Audience Engagement team will accomplish these goals through targeted outreach, Web, and social media campaigns. Building off a year of record attendance, led by the unveiling of commissioned portraits of former President Obama and First Lady Michelle Obama, the NPG leverages social media platforms to attract more followers and convert them to visitors, and also expand outreach to international media.

In FY 2019, the NPG will continue to collaborate with its innovative learning groups, The Teen Council and the Teacher Advisory Board, and use the perspectives and knowledge of these key contributors to extend the educational value of the NPG's collection both programmatically and digitally. The Accessibility Task Force will bring NPG staff up to par with accessibility issues and demands. Other popular programs, including afterhours events, curator tours, and Family Days events, will continue to anchor the NPG's educational offerings. The NPG docent corps remains a vibrant and diverse group well versed in the collection and trained in inquiry techniques to engage audiences. *Explore!*, the NPG education space for 18-month to 8-year-olds and designed to help young people explore portraiture as art and history, will continue operations and draw more families to the Museum.

The NPG's primary publication projects in FY 2019 include a scholarly exhibition catalogue for *Votes for Women: A Portrait of Persistence* and a companion publication for the collection-based exhibition *Eye to I: Self Portraits from 1900 to Today*. The publications office is also working on *The Obama Portraits* (working title) and *The Outwin Boochever Portrait Competition 2019* catalogue (to be completed in FY 2020). Furthermore, the NPG remains dedicated to the Museum's bilingual initiative by continuing to translate new label texts and other materials into Spanish.

The NPG efforts to achieve the goal of Improving Stewardship of the National Collections will feature prioritized acquisitions of portraits of underrepresented Americans. The NPG also continues several projects to produce digital images of its collection items, and to address cataloguing backlogs, to enhance the study and appreciation of its portraits in all media by researchers and the public. The NPG will digitize more than 4,000 collection objects, primarily works on paper, and will load the resulting images and files into

the Smithsonian Digital Asset Management System (DAMS), complete with object condition reports. Other conservation work continues, including necessary conservation of paintings and sculptures of notable American women, and other paintings and delicate frames of numerous painted portraits.

The FY 2020 budget reflects \$180,000 increase for improved digitization and Web support.

MEANS AND STRATEGY

In FY 2020, the NPG will continue to concentrate its efforts and resources on exhibitions, developing and maintaining its collection, expanding public education offerings, and pursuing new research directions.

The NPG will pursue the strategic goal of offering compelling, first-class exhibitions in FY 2020 with an ambitious and active exhibition schedule, featuring:

- *The Outwin 2019: American Portraiture Today* — This exhibition will grow out of our Outwin Boochever Portrait Competition. The 2019 triennial competition — open to all media, including performance art — received entries from all 50 states, the District of Columbia, and Puerto Rico. The competition focuses on broadening the definition of portraiture while highlighting the genre’s relevance in contemporary art and culture. The finalists’ and competition winners’ works will be displayed at the NPG prior to traveling in a four-venue national tour.
- *Recent Acquisitions/Gala Installation* — Displaying recently acquired and commissioned works, this exhibition will include portraits of the newest recipients of the NPG’s *Portrait of a Nation* prize.
- *Portraits of the World: Denmark* — The third installation in our international portrait series will highlight Danish artist Michael Ancher’s **Kunstdommere**. This monumental group portrait of four of Denmark’s most significant cultural figures, several of whom contributed to the Modern Breakthrough that transformed Danish art and literature during the late 19th and 20th centuries, speaks to the transnational phenomenon of artists’ communities, which advanced art in Denmark as well as in the United States. The NPG will display works from the collection to develop the theme of artistic communities as incubators of modernism. The art-judging theme of **Kunstdommere** ties in with our triennial Outwin Boochever Portrait Competition, which will be on exhibit in an adjacent gallery.
- *John Singer Sargent: Portraits in Charcoal* — Co-organized with the Morgan Library and Museum, this exhibition features works of tremendous

sophistication as well as a roster of fascinating biographical subjects. Guest curator Richard Ormond will bring together a once-in-a-lifetime assemblage of Sargent master drawings, many of them rarely exhibited and in private collections. Often made as tokens of the artist's friendship or esteem, charcoal drawings allowed Sargent to experiment with radical approaches to likeness and identity that he could not pursue in his commissioned oils.

- *“Warranted to Give Satisfaction”*: *Daguerreotypes by Jeremiah Gurney* — This exhibition of portraits by American daguerreotypist Jeremiah Gurney (1812–1895) will continue the practice of highlighting works by a single daguerreotypist or studio in the NPG's Daguerreian Gallery. A jeweler by profession, Gurney gave up that trade in favor of daguerreotypy in 1840, and established one of New York City's first daguerreotype studios. In the years that followed, Gurney built his reputation as one of the city's leading daguerreotypists. He produced daguerreotypes hailed as “nearer to absolute perfection” than those of rivals such as Matthew Brady. In 1851, he founded the American Daguerre Association — the first national organization of photographers. Two years later, Gurney captured the first major American prize for daguerreotypes.
- *One Life: Will Rogers* — An American original whose insightful humor was surpassed only by his generosity of self and inestimable goodwill, Rogers was born in 1879 in Indian Territory, a son of Indian ancestry, in what became the state of Oklahoma. His life in vaudeville, Hollywood, and journalism won for him the hearts of Americans throughout the country. Although his talents evolved from unerring cowboy with a lasso, to standup comedian, to movie star, Rogers's jocular personality never changed, nor was it ever off-the-mark. Plainspoken, honest, and funny, his circle of friends included presidents, foreign dignitaries, and most everyone he met. He authored six books, appeared in 71 films, hosted a popular radio show, and became the nation's favorite political pundit of the Depression era. An audio visual component illuminating Rogers's work is planned.
- *A Century of Women Writers (working title)* — This exhibition drawn from the NPG collection will highlight 24 noted women writers from the past 100 years. Their writings and books are well known, and many titles have become classics of American literature. The medley of authors collectively won every literary award there is: Pulitzer Prize winners include Joyce Carol Oates, Anne Tyler, Alice Walker, Marilyn Robinson, Jhumpa Lahiri, and Gwendolyn Brooks, the first African American writer to win a Pulitzer and earn election to the National Institute of Arts and Letters. Another winner, Toni Morrison, also won the Nobel Prize for Literature. A stimulating mix of biography, art, and story-telling — all at its best. This is an AWHI exhibition.

In addition to permanent collection rotations and the conclusion of existing traveling exhibitions, in FY 2020 the NPG will begin the four-venue tour of *Eye to I: Self-Portraits* from the NPG at the Boca Raton Museum of Art in Florida, and continue plans for the refresh of *The Struggle for Justice* and *American Origins* permanent installations.

The NPG will continue to engage and inspire diverse audiences in FY 2020 by offering wall text in all exhibitions, printed and digital assets, and more public programs in both English and Spanish, as well as incorporate additional languages in digital offerings. The Audience Engagement team will collaborate with Smartify and Smithsonian partners on audio components/applications for permanent collection exhibitions. This will include an access component (such as verbal descriptions for low vision and blind visitors) for a seamless visitor experience. Through targeted outreach and recruitment, the Museum's internship program will better provide opportunities for underserved students from diverse parts of the United States. The NPG will continue to serve students, teachers, families, and teenagers through a variety of interactive programs, regularly revised and updated to incorporate emerging technology and practices. This programming will take place in the Museum and online. Communications and marketing will continue to advance our outreach and recognition throughout the metropolitan area and nationally by targeted strategies in social media and ad placements.

In addition, the NPG will push in the digital sphere to make content available in Mandarin, Russian, French and Arabic. Through this initiative, the Museum will bring collections and scholarship to worldwide audience.

Other efforts to engage and improve diverse audiences in FY 2020 include conducting more sophisticated analyses of different audiences, and identifying underserved audiences. The latter will include non-native English speakers and visitors with physical or learning challenges. The NPG's education department specialists will develop education and events that are highly tailored to specific audiences.

In FY 2020, the NPG will expand public engagement by investing in the creation of a digital communications production capability. This will allow national outreach through podcasts and video production with staff and visiting artists who will be able to produce content for a range of digital platforms including podcasts, handheld technologies, websites, social media and communications, as well as in-gallery technologies.

The NPG's major publication projects in FY 2020 will include completion of *The Obama Portraits* (book); the catalogue for *The Outwin Boochever Portrait Competition*; and a book for the Museum's fall 2020 exhibition.

The NPG will improve the stewardship of national collections with further acquisitions of 18th and 19th century portraits of under-represented minorities and women. The NPG will also seek to expand its holdings of contemporary Americans by acquiring portraits of leading figures in disability rights, the sciences, business, and the arts. The NPG will continue collaborations with the Digitization Program Office until its entire collection, of both two- and three-dimensional works, is made accessible to the public and researchers via the Web. Moreover, at the core of our mission, the NPG will care for the physical conservation needs of the collection in all media.

Finally, the NPG will continue work on Enabling Cost-Effective and Responsive Administration through vigorous efforts to access diverse applicant pools for emerging recruitment needs. The NPG will also continue collaborating with central Smithsonian offices on finance and operations management process improvements.

EXPLANATION OF CHANGE

The FY 2020 budget request includes an increase of \$180,000 for expanding digital technologies at the NPG.

Digitization and Web Support (+\$180,000)

The requested increase of \$180,000 will help expand the digital platform and Web presence at the NPG. If the Museum is to continue to forge connections between visual biography and the public, more accessible digital storytelling resources will be required. Conceiving and creating content specifically for digital platforms and in multiple languages, including sign language, will reach diverse audiences in innovative ways.

NONAPPROPRIATED RESOURCES — General trust funds support essential positions and help defray costs of special events for exhibition openings, loan exhibition development, outreach, fund raising, management, and research. The NPG must support exhibitions, publications, public lectures and gallery programs, symposia, and some collection acquisitions with donor/sponsor-designated funds. Private donations are thus vital to the NPG's planning, programming, and ability to deliver on its public mission. It is through a public-private partnership that the National Portrait Gallery achieves its goals and serves the Smithsonian's mission.

NATIONAL POSTAL MUSEUM

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	6	1,131	2	522	2	2,666	19	3,012
FY 2019 ESTIMATE	6	1,581	2	515	2	2,985	23	3,285
FY 2020 REQUEST	6	1,581	2	500	2	3,165	23	3,355

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	1	92	1	92	0	0
Understand and Impact 21st Century Audiences						
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	1	160	1	160	0	0
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	4	536	4	536	0	0
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	0	793	0	793	0	0
Total	6	1,581	6	1,581	0	0

BACKGROUND AND CONTEXT

The National Postal Museum (NPM), with the world's largest museum collection of stamps and postal artifacts, is dedicated to creating visitor experiences that educate, excite, entertain and inspire. With more than six million objects, the Museum is responsible for the Smithsonian's second-largest collection. The Museum dedicates its resources to developing new and innovative ways to explore the vital role of the postal system in American life, and to make its vast philatelic and postal collections available to all visitors — both in person and online. The NPM uses its collections in exhibitions and public programs which educate visitors on the history of America, transportation, communication, economics, and commerce.

In addition to the many activities and programs completed throughout the year, the NPM is focused on several major initiatives aimed at increasing visitation to both

the Museum and its website. These initiatives include the design and fabrication of new exhibitions; the development of new hands-on educational experiences; and planning for the next generation of the Museum's popular online collections program. These initiatives will support the goals outlined in the Smithsonian's new Strategic Plan, *One Smithsonian*.

MEANS AND STRATEGY

The National Postal Museum's primary activities will contribute to the Smithsonian's vision of building "...on its unique strengths to engage and to inspire more people, where they are, with greater impact, while catalyzing critical conversations on issues affecting our nation and the world" through the prism of postal communications and philately. These challenges will be met by partnering with other Smithsonian museums in support of the *One Smithsonian* Strategic Plan: serving as a catalyst for conversations about complex issues; extending the digital reach of the Museum; understanding and impacting 21st century audiences; contributing to large, visionary, interdisciplinary research and scholarly projects; and preserving our philatelic and postal heritage while optimizing our assets.

In FY 2020, the NPM's Department of Education and Visitor Services (DEVS) will continue to expand K–12 school programs and create new learning opportunities in the Byrne Education Center of the *William H. Gross Stamp Gallery* and in new and existing Museum exhibitions. A broad array of new digital resources will be made available for use as part of classroom visits and as stand-alone lessons. The Byrne Center will provide enhanced learning opportunities which incorporate the newest digital pedagogical tools. The Byrne Center will also continue to be used for NPM and Institution-wide meetings and programs. A second educational space supports the Museum's on-site school tours, community engagement activities, and family programming such as the NPM's traditional programs, including *First Class Problem Solvers* and *The Big Draw*. In addition, the NPM will continue to collaborate with local museum studies students at Stuart-Hobson Middle School, with our *History Makers* program that was originally supported through a Youth Access Grant. Efforts to expand the program to other area schools will also be pursued.

The NPM is developing three new educational stations plans to install them in the Museum's galleries in late 2019. These stations will provide additional interactive learning opportunities for children and adults. The educational hubs will support the Museum's effort to make its exhibitions and educational offerings more accessible to a younger audience and provide new hands-on learning opportunities to discover more about the NPM's collections and the history of philately in America. FY 2020 will also see the continuation of the NPM's dedication to creating *One Smithsonian* by engaging the resources of multiple museums and research centers to produce quality educational products. Collaborative programming will continue with initiatives being planned with the

Center for Folklife and Cultural Heritage, Smithsonian Latino Center, Smithsonian American Art Museum, and the Archives of American Art. In addition, The NPM is working closely with 10 Smithsonian museums and units for the upcoming exhibition *Baseball: America's Home Run*.

FY 2020 will also be the second year of an initiative to improve the Museum's visitor experience by engaging the entire NPM staff and security contractors in visitor-related activities through the Coordinated Visitor Experience Team (CVET) program. The Visitor Services team is continuing to improve the visitor experience both through physical changes, such as signage, and by fostering an atmosphere of cooperation and teamwork Museum-wide.

The NPM will continue to expand and further develop popular public programs with an emphasis on growing the target audience populations of millennials and early learners. Examples of this targeted audience programming include our vibrant monthly *Wine & Design*, in which we will collaborate with guest artists, and our weekly *Story Time*, which we aim to quadruple participation figures by offering diverse holiday pop-up events and monthly bilingual Spanish-English sessions. The Museum will also expand our volunteer program to improve the quality of experience for walk-in visitors.

In FY 2020, the *Baseball: America's Home Run* exhibition will feature baseball-themed philatelic and postal history objects from the Museum's collection as well as original artwork from the Postmaster General's stamp art collection and artifacts on loan from other museums. Additional upcoming events include family festivals, author series lectures, musical performances, student workshops, and panel discussions, all geared toward a wide variety of audiences.

In FY 2020, the Museum will launch a new online collections information program that will greatly expand the number of collection objects that are available online to worldwide users. The new program will replace the existing online collections database that is now more than a decade old and technologically obsolete.

The NPM's federal resources are primarily dedicated to improving the stewardship of the national collections for present and future generations. In FY 2020, the Museum will continue to process new acquisitions, which include digitizing and cataloguing collection items using the automated collections information system (CIS). The Museum will also continue to integrate the Digital Asset Management System (DAMS) by training staff in its use as part of our new processes. Enhanced cataloguing and digital records will be created for all new exhibitions and posted online for broader access by the general public.

A major initiative to improve accessibility to off-site collections will remain a Museum priority. The Museum will continue to coordinate with the staff of the

National Museum of American History (NMAH) on the decontamination of NPM collection objects stored in Garber building numbers 15 and 16 in Suitland, Maryland. This project will remove hazardous lead and asbestos from NPM collections that have been inaccessible for many years. The project will eliminate a potential safety hazard for staff and make previously inaccessible collection items available for cataloguing and imaging. These collection items will then be made available to the public in exhibitions and online through the Museum's collections website.

The Museum will continue to catalogue, image, and conserve the Postmaster General's (PMG) collection of original stamp art in FY 2020. The PMG collection, transferred to the Museum from the United States Postal Service in FY 2012, represents one of the Museum's most important collections. It includes the original artwork, as well as rejected designs and preliminary sketches, commissioned for more than 3,000 U.S. postage stamps between 1942 and the present. The NPM will also continue to permanently re-house the Postmaster General's collection of original stamp art as well as implement a conservation treatment plan. In addition, the Museum will continue to process new archival collections related to the PMG art collection.

Finally, the Museum will continue to refine the national philatelic collection. A review of the NPM's collections policy will commence in FY 2020. The Museum will streamline procedures to expedite the processing of collections. New guidelines will include clearly articulated production goals and incorporate all preservation actions required to more effectively manage the lifecycle of collections. Collections frequently requested by researchers will continue to be reorganized and re-housed to improve public access and long-term preservation. Items previously deaccessioned from the national philatelic collection will be donated to other museums or sold for the benefit of the national collection. Deaccessioned collections items include duplicate revenue stamps and various postal items, which either fall outside the scope of the collection or have deteriorated beyond use.

NONAPPROPRIATED RESOURCES — The United States Postal Service provides the NPM with an annual grant, which supports more than 60 percent of the Museum's core functions and operational costs. These costs include nonfederal salaries and benefits, facility maintenance, exhibitions, education, and collection management programs. Fundraising initiatives will continue to generate increased support from the private sector to develop and support new exhibitions, research opportunities, educational programs, and special events.

SMITHSONIAN AMERICAN ART MUSEUM

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	89	10,239	6	1,367	47	9,820	1	119
FY 2019 ESTIMATE	89	10,389	5	1,320	46	10,659	2	125
FY 2020 REQUEST	89	10,389	5	1,300	48	10,748	2	100

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in vital arts and humanities research	6	680	6	722	0	42
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	8	936	7	849	-1	-87
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	12	1,432	13	1,493	1	61
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	23	2,797	25	2,845	2	48
<i>Education</i>						
Engage and inspire diverse audiences	3	306	2	271	-1	-35
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	19	2,187	19	2,101	0	-86
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	1	102	1	105	0	3
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	14	1,685	13	1,721	-1	36
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	3	264	3	282	0	18
Total	89	10,389	89	10,389	0	0

BACKGROUND AND CONTEXT

The Smithsonian American Art Museum (SAAM) is the nation's Museum dedicated to the art and artists of the United States from colonial times to the present. It is the home of the largest and most inclusive collection of American art in the world, and its holdings of more than 44,000 works, spanning three centuries of the nation's cultural development, tell the story of America through the visual arts. The Museum's programs make the collection available to national audiences and beyond, as well as to those who visit its two historic landmark buildings in Washington, DC: the Donald W. Reynolds Center (DWRC) for American Art and Portraiture (shared by SAAM and the National Portrait Gallery) and the Renwick Gallery, dedicated to American crafts and decorative arts.

To achieve the strategic goal of Enhanced Interdisciplinary Research, SAAM curators and research Fellows-in-residence use the collection and other resources to develop new insights into America's cultural and artistic legacy as well as current themes and explorations. The resulting knowledge informs collections development and serves as the basis for exhibitions, associated award-winning catalogues and scholarly publications, and educational programs. The Fellowship program, which celebrates its 50th anniversary in 2020, cultivates the next generation of professors and curators. SAAM has hosted more than 670 scholars who now work at academic and cultural institutions across the United States, Australia, Asia, the Caribbean, Europe, the Middle East and South America. The Museum's peer-reviewed journal, *American Art*, serves as a primary venue for groundbreaking scholarship in the field. The Museum also hosts international symposia and seminars on topics of relevance in the field of American art and encourages a deeper understanding of American art's global connections.

SAAM will Expand Digital Technologies by offering a constellation of activities to engage users both online and in the galleries. The Museum takes full advantage of the latest technologies, with a focus on mobile-optimized websites and applications, video production, and social media engagement. SAAM also is undertaking significant experiments and pilot projects using new platforms such as virtual reality. Three videoconference centers deliver the Museum's education programs to classrooms around the world. The digitization of SAAM's collections continues apace, allowing the Museum to add new assets and media to support its online resources.

The Museum will Understand and Impact 21st Century Audiences through exhibitions, education, and public programs. An ambitious schedule of exhibitions developed in-house and complemented by shows obtained from other organizations attracts new visitors and encourages repeat visits. At the DWRC, large exhibition spaces, shops, and a restaurant greet visitors with a broad range of activities to maintain their interest. The Lunder Conservation Center provides a window on preservation of the national collections, and the Luce Foundation Center for American Art displays 3,500 collection objects in an inviting, visible storage center. The Renwick Gallery has additional space for exhibitions, public programs, and rotating displays of its permanent collection of American crafts. Multiple traveling exhibitions organized by the Museum are shared with other museums throughout the United States, enriching people's lives by giving them direct access to their nation's artistic and cultural heritage.

National education programs directly reach K–12 teachers and students. These include adoption of the latest technologies where most effective, as well as incorporation of art into social studies, history, and language arts. Resident teacher institutes are supplemented by online/on-demand courses for the K–12 community. The Museum regularly collaborates with private and public organizations to provide teachers with new tools and resources. In addition, students are brought into the Museum as often as possible to provide that unique, direct experience with great art. The MacMillan Education Center, located in the galleries, serves students in classrooms across the nation and U.S. military bases worldwide, as well as school groups touring the Museum, conservators, research Fellows, and educators.

Public programs complement Museum exhibitions and collections with lectures, tours and gallery talks, and craft and sketching workshops. The McEvoy Auditorium is the venue for four of SAAM's five lecture series as well as two of five music series. The others are either at the Renwick Gallery or the Kogod Courtyard. The latter space also hosts programs such as family days, heritage months, and art-themed movies. In FY 2018, SAAM hosted 321 programs and events.

The strategic goal of Preserving Our Natural and Cultural Heritage is achieved through multiple activities. Scholarship and research help set acquisition objectives. Gifts of art and private funds raised through advancement activities pay for additions to the national collection. Conservators research methods and tools to preserve the artwork. The Lunder Conservation Center is an important locus for conservation training and colloquia of interest to the conservation community and the public. Conservation Fellowships ensure that experience and knowledge are shared with the larger community of conservation practitioners.

SAAM also has a pro-active safety program to ensure a safe and healthy environment for Museum staff and visitors.

Cost-Effective and Responsive Administration encompasses many activities. Information Technology (IT) staff implement and maintain the information framework on which so many other efforts depend. This includes exhibition space screens and kiosks that provide access to information available anywhere, on any device. Managers carefully plan, promote, protect, and conserve the Museum's resources.

MEANS AND STRATEGY

Research on the collections and related American art topics by curatorial staff continues in support of exhibitions and the permanent collection, including two new exhibition catalogues scheduled for publication in FY 2020. Endowments and multi-year private support have allowed the Museum to hire a full slate of curators with specialties ranging from sculpture, photography and contemporary crafts to Media Arts. The Museum's award-winning, peer-reviewed journal, *American Art*, will publish three issues of new scholarship. The Museum hosts approximately 20 research Fellows every year from throughout the country and internationally, thereby increasing the number of scholars using the collections. The resulting discoveries and interpretations by staff and Fellows help Americans understand and appreciate their

rich and diverse cultural heritage as well as advance scholarship in American art. Research also feeds into educational programs and provides content for the Web and new media.

The Museum embraces the Web by making as much of its artwork and related data as possible freely available online to the public. Ninety-nine percent of SAAM's collection now is online. The Museum hosts dynamic websites for visitors, researchers, and educators, most notably through the popular website at AmericanArt.si.edu. SAAM participates in collaborative digital initiatives with other organizations, implementing powerful tools such as Linked Open Data (LOD). The publication of SAAM's collections data as LOD has established the Museum as a leader in promoting semantic Web standards in the museum community. SAAM maintains an active social media presence across numerous platforms — including Facebook, Twitter, Instagram, and our blog, *Eye Level* — which focuses on engaging the public in conversations about art-related topics. The Museum produces dozens of educational videos and live streams each year, which are added to its non-profit YouTube channel. These assets are fully accessible and responsive, regardless of the type of device used. Custom-built interactive exhibition components, apps, and videos are used whenever appropriate to provide a richer and more varied learning experience for visitors.

SAAM is planning seven exhibitions for FY 2020. Major exhibitions include *American Cosmos: Humboldt*; *Printing the Revolution (Chicano Graphics)*; *Catlin's Buffalo*; *Chiura Obata: An American Modern*; and a show from our graphic art collection: *Changing New York. After Artists Respond: American Art and the Vietnam War* comes down to tour, part of the permanent collection will be reinstalled in its usual galleries. The Renwick Gallery hosts the *2020 Renwick Invitational* (a biennial favorite) and *Hearts of our People: Native American Women*.

As part of its ongoing effort to make as much material as possible accessible to the public, the Museum regularly rotates artworks in the permanent collection galleries to show the many facets of American art and culture, as well as to encourage return visits. The Luce Foundation Center for American Art displays an additional 3,500 collection objects in densely installed glass cases.

National outreach includes the touring exhibitions *African American Art*, *Burning Man*, *Kara Walker*, and *Artists Respond: American Art and the Vietnam War*. Interactive exhibition components continue evolving to keep pace with proliferating information streams. In addition, whenever possible, SAAM honors requests by other museums for loans from the national collection.

SAAM engages diverse audiences through a range of public programs and online resources. The Museum staff and 200 trained volunteers will continue popular tours, gallery talks, demonstrations and workshops, as well as signed tours for the hearing impaired and *America InSight* for visually impaired visitors. In addition, individuals bring in objects and talk with conservators about the proper care and handling of family heirlooms. Family Days and heritage month programs continue to create and sustain new relationships between the public and their cultural history. The

Chinese New Year celebration, held in conjunction with the Chinese Embassy, remains a visitor favorite. Public programs in the galleries, McEvoy Auditorium, and Kogod Courtyard occur nearly every day. These are supplemented by new Web content, as well as by making all content accessible regardless of the media platform used.

Education initiatives continue to expand as the Museum takes advantage of new online tools and assets. SAAM continues to develop its highly successful distance-learning program with staff and 22 volunteers who create content that reaches classrooms worldwide. Three videoconference centers, including the MacMillan Education Center, enable the Museum to serve more students than ever before. Contracts and partnerships with Government agencies such as the Department of Defense, National Park Service, and the Washington, DC Public Schools expand the Museum's reach to more diverse audiences. The intern program, hosting 36 students in FY 2018 (from 20 states, Washington, DC, and France), helps to prepare the next generation of museum professionals. In addition, the Museum continues to host two teacher training institutes, each lasting a week; in FY 2018, 59 teachers from 25 states and China attended.

The safe storage and display of collection objects remain a top priority. SAAM continues to develop public interest in and awareness of preservation issues through the Luce Foundation Center and the Lunder Conservation Center and their many public and professional programs. The acquisition of new tools and instrumentation will allow more complete monitoring of the collection and application of leading-edge conservation techniques to preserve the collection. Leased cool-storage space ensures that photographic material is preserved in ideal conditions. Artworks will be acquired to fill gaps in the collection identified through the Museum's collections plan. Time-based media (i.e., works that exhibit a changing observable state, such as film, videos or lights) will continue to receive special attention in our Time-based Media Lab. Galleries in the DWRC continue to be converted to Light-emitting diode (LED) lighting, which is less damaging to the collection and more economical in reducing the costs of maintenance and utilities.

Information technology and administrative procedures closely monitor resources and processes, resulting in Cost-Effective and Responsive Administration. Strong partnerships with Smithsonian central offices enable SAAM to provide an end-user perspective on policy changes. Use of the Museum's intranet site keeps staff current on the ever-changing procedural and regulatory environment. Continual reviews of work processes and conditions result in implementation of safer techniques and materials for both staff and the environment.

NONAPPROPRIATED RESOURCES — Nearly all of SAAM's non-personnel costs, including those for exhibitions, educational and public programs, and purchases for the national collection, are paid with funds provided by individuals, foundations, and corporations. Donor/sponsor-designated funds support specific programs and projects. Additionally, trust funds support salaries and benefits for one-third of staff, as well as all fundraising activities and related costs.

OUTREACH

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	64	9,333	32	5,554	22	6,103	1	396
FY 2019 ESTIMATE	64	9,333	35	6,126	20	5,830	1	204
FY 2020 REQUEST	64	9,333	35	6,317	21	4,885	1	151

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	3	1,385	3	1,385	0	0
Engage in vital arts and humanities research	1	845	1	845	0	0
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	3	352	3	352	0	0
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	2	209	2	209	0	0
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	39	4,672	39	4,672	0	0
<i>Education</i>						
Engage and inspire diverse audiences	11	1,428	11	1,428	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	5	442	5	442	0	0
Total	64	9,333	64	9,333	0	0

BACKGROUND AND CONTEXT

All of the Institution's outreach activities link the Smithsonian's national collections, research, and educational resources with Americans from coast to coast. These programs aim to: 1) broaden the audiences who share in the nation's rich cultural heritage; 2) enhance widespread research-based knowledge of science, history, and art; and 3) provide opportunities for educators and scholars to further increase and diffuse knowledge.

Smithsonian outreach programs serve millions of Americans, thousands of communities, and hundreds of institutions in all 50 states, through loans of objects, traveling exhibitions, and sharing of educational resources via publications, lectures and presentations, training programs, and websites. Smithsonian outreach programs work in close cooperation with Smithsonian museums and cultural and research centers, as well as with more than 200 affiliated institutions and others across the nation.

This line item includes the programs which provide the critical mass of Smithsonian Across America outreach activity: the Smithsonian Institution Traveling Exhibition Service (SITES); Smithsonian Affiliations; the Smithsonian Center for Learning and Digital Access (SCLDA); the Office of Fellowships and Internships (OFI); and the Smithsonian Institution Scholarly Press (SISP). Smithsonian Associates and the Smithsonian Science Education Center (SSEC), which receive no direct federal funding, are also part of this national outreach effort.

MEANS AND STRATEGY

Smithsonian Institution Traveling Exhibition Service (39 FTEs and \$4,672,000) — For more than 68 years, SITES has shared Smithsonian exhibitions and educational resources with people and places all across the country. More than 500 communities in all 50 states host SITES shows in formats ranging from large-scale interactive exhibits for mainstream art, history, and natural history museums to exhibitions for mid-size museums and cultural centers, and from small exhibitions for rural America to poster exhibitions tailored to school classrooms. Encompassing subjects that parlay the Smithsonian's vast collections and research, SITES' FY 2020 offerings will address such topics as artistic creativity, scientific exploration, and the mosaic of diverse cultures that have made America the great nation it is today.

SITES is a national leader in exhibitions that honor and celebrate the diversity of cultural heritage in America — African Americans, Latinos, Asian Pacific Americans, Native Americans, and the many other peoples who give our nation its unique vitality. SITES strives to tell the complete American story, in person and online, in all its exhibitions. FY 2020 resources will continue to support and broaden our outreach to these communities, in addition to generating public engagement through exhibition topics related to the Grand Challenges of the American

experience, space exploration, world cultures, our biodiverse planet, and the transformative power of the visual arts. In particular, SITES will continue its national tour of the Apollo 11 command module, a national treasure, in celebration of the 50th anniversary of the first moon landing.

FY 2020 resources will also continue to support SITES' landmark Museum on Main Street (MoMS) initiative, enriching rural America where access to national cultural programs is limited. The MoMS team was awarded the Smithsonian Education Innovation Award in recognition of its outstanding accomplishments exemplifying the Smithsonian's commitment to innovation in education. In FY 2020, MoMS will tour *Crossroads: Change in Rural America*, looking at profound transformations in 20th century small towns and how they are reinventing themselves by creatively focusing on new opportunities for growth and economic development. In addition, MoMS will continue to travel exhibitions examining the cultural and scientific relationships between people and water, and how hometown sports teams energize communities and instill local pride.

With every exhibition, SITES supports host venues so they can develop customized opportunities to engage and inspire people in their communities to learn about the subject of the exhibition. Exhibitions and related education materials are tailored to share local stories and the creativity, innovation and expertise of local residents — whether through school field trips, family festivals, lectures involving academics from local colleges and universities, or programs targeted for underserved youth and adults, such as teen-produced, multi-media community histories.

While most Americans may know the Smithsonian from one-time school trips or family visits, the presence of the Institution's resources in their hometowns has a deeper resonance. SITES exhibitions represent the valuable public impact of the federal dollar. They are a source of immense local pride, bringing together people from diverse ethnic, age, and socio-economic groups to celebrate the common bonds of a shared national heritage at the local level — in communities across the nation.

Smithsonian Affiliations (2 FTEs and \$371,000) — Now in its 23rd year, Smithsonian Affiliations continues to build a strong national network of affiliated museums, educational, and cultural organizations that facilitate the display of Smithsonian artifacts and the dissemination of the Institution's resources and expertise in communities across America. By working with both emerging and well-established museums of varying sizes, subject areas, diverse audiences, and scholarly disciplines, Smithsonian Affiliations creates the framework through which visitors unable to visit the Institution's facilities in Washington, DC can still experience the Smithsonian in their own communities. In addition, the Smithsonian works closely with affiliated organizations to increase their audiences, expand their professional capabilities, and gain greater recognition in their local communities.

There are currently more than 200 Affiliate organizations in 45 states, Puerto Rico, and Panama.

These strategies have resulted in the display of more than 9,000 Smithsonian artifacts in Affiliate locations, including such historic and topical items as U.S. spacecraft, First Ladies' gowns, Civil War arms and uniforms, outdoor sculptures, scientifically significant collections, and many more. Smithsonian scholars have participated in science literacy, American history, cultural diversity, and art education programs at Affiliate locations. Professional development workshops, internships, and visiting professional residencies have given Affiliate staff the opportunity to increase their knowledge and skills in areas such as collections management, exhibition planning, and museum administration. In addition, the Smithsonian Affiliations' annual conference creates a forum for networking, information sharing, and future planning. Current Affiliate projects build on and amplify the core objectives outlined in the Smithsonian's Strategic Plan.

Smithsonian Center for Learning and Digital Access (SCLDA) (13 FTEs and \$1,524,000) — The Smithsonian is creating new digital platforms for scholars and educators to better access Smithsonian collections, research, and education resources. SCLDA's Smithsonian Learning Lab is a digital platform for educators and students, enabling everyone to find and customize resources for educational use and share them with others. Based on continual research and evaluation, the Lab evolves to provide valuable services to its global audiences. SCLDA also develops content and materials for classrooms and provides professional development to teachers. Within the Institution, SCLDA offers many services and technical support to other units. These range from collaborations to create and disseminate content, technical modifications to the Learning Lab in response to unit requests, and outreach to broaden access and engage audiences with the Smithsonian's educational offerings. SCLDA's expertise in research also supports education and access initiatives across the Institution.

Office of Fellowships and Internships (OFI) (6 FTEs and \$1,970,000) — The OFI has the central management and administrative responsibility for the Institution's programs of research, Fellowships, and other scholarly appointments. One of its primary objectives is to facilitate the Smithsonian's academic interactions with students and scholars at universities, museums, and other research institutions around the world. The Office administers Institution-wide research support programs, and assists other Smithsonian museums, research centers, and offices with diversifying and developing additional Fellowships and visiting appointments.

The Smithsonian Institution offers Fellowships to provide opportunities for graduate students, pre-doctoral students, and postdoctoral and senior investigators to conduct independent research in association with members of the Smithsonian professional research staff, and to more effectively use the resources of the Institution.

To achieve the strategic goal of Enhanced Interdisciplinary Research and maintain the Smithsonian's level of expertise in the research community, the Institution must continue attracting the best scholars. The OFI has increased Fellowship stipends to provide awards comparable to other prestigious programs so the Smithsonian can maintain a competitive edge. Since funding for stipends has remained flat, the Smithsonian has increased the value of each award, but has decreased the number of Fellowships awarded. The Smithsonian is trying to raise private funding for the Institution's Fellowships and Scholarly Studies Program to help today's young scientists become the next generation's top researchers. In addition, the OFI continues to provide current staff with the financial support needed to develop new research initiatives, collaborate with other scholars, and determine the scope and feasibility of projects.

Smithsonian Institution Scholarly Press (SISP) (4 FTEs and \$796,000) — Through the Smithsonian Contributions Series program, continually published since 1875, SISP publishes and disseminates research conducted by Smithsonian staff and collaborators. The federal funds support the production of first-class research results in science, art, culture, and history, with widespread distribution to the public and to libraries, universities, and other education and research organizations. SISP publishes open-access series, in digital and print formats, in core subject areas of anthropology, art, botany, history, marine sciences, museum conservation, paleobiology, and zoology, as well as open monographs in other disciplines, and disseminates interdisciplinary research and conference proceedings.

Furthermore, federal resources underwrite the publication of scholarly books closely related to the national collections and SISP administration of the initiative to advance science by increasing public access to peer-reviewed scholarly articles and papers authored by Smithsonian staff. The performance objectives advanced by SISP's scholarly publications and its program to increase public access to Smithsonian research results are Enhanced Interdisciplinary Research and support the strategic goal to Understand and Impact 21st Century Audiences.

NONAPPROPRIATED RESOURCES — General trust funds defray the costs of staff salaries and benefits, fund raising, exhibition design and production, publications, materials, outside specialists, and contractual services. Donor/sponsor-designated funds cover costs related to specific projects and programs.

COMMUNICATIONS

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	23	2,839	26	4,457	0	44	0	0
FY 2019 ESTIMATE	23	2,839	32	4,327	0	20	0	0
FY 2020 REQUEST	23	2,839	34	4,620	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	16	1,867	16	1,867	0	0
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	7	972	7	972	0	0
Total	23	2,839	23	2,839	0	0

BACKGROUND AND CONTEXT

The Office of Communications and External Affairs (OCEA) consists of four departments: the Office of Public Affairs (OPA), the Office of Government Relations (OGR), the Office of Visitor Services (OVS), and the Office of Special Events and Protocol (OSEP).

The OCEA manages the Smithsonian brand strategy, coordinates brand marketing and oversees internal communications. Office resources support the Strategic Plan by training staff about the Institution's priorities and objectives, and informing them about important initiatives, thereby enabling the Institution to better execute its mission. Accordingly, the OCEA is responsible for implementing the Smithsonian brand strategy, both internally and externally, so that the Institution reaches and engages more people with its mission. By improving internal communications to more effectively and efficiently inform staff of Institution-wide policies, initiatives, and events, the OCEA encourages cross-unit collaboration to help the Smithsonian better achieve its strategic goals and core mission.

The OPA coordinates public relations and communications with museums, research centers, cultural resource centers, and offices to present a consistent and positive image of the Institution. The Office supports the Strategic Plan by advancing the Institution's objectives, connecting people with Smithsonian experts, research, exhibitions, and public programs, and by working with conventional media outlets and social media. The OPA connects to online audiences by overseeing content such as Visitor Information, Events, Exhibits, and *Encyclopedia Smithsonian* on the Institution's central website. The Office also administers content on Newsdesk, the Smithsonian's online newsroom, and on central Smithsonian social media accounts. In addition, the OPA works with units throughout the Institution to establish and maintain professional communications guidelines and standards.

The OGR is the liaison between the Smithsonian Institution and the federal Government. This includes members and staff of the U.S. House of Representatives and Senate appropriations and oversight committees and other congressional offices, the White House, the Office of Management and Budget, and various federal agencies. The Office supports the Institution's overall Strategic Plan by explaining the accomplishments, relevance, and wealth of the Smithsonian's offerings to the Congress and the Administration. The OGR also works with other Smithsonian offices, informing them of federal-sector activities, tracking legislation pertinent to them, showcasing their exhibits, programs and discoveries for interested congressional offices, and managing their requests for high-ranking Government officials to participate in official Institution events.

The OVS is the main Office dedicated to designing, orchestrating, and improving visitors' experiences with the Smithsonian. The Office enables the Smithsonian's mission through its activities as the primary point of contact for Smithsonian visitors and volunteers. Office resources support the Strategic Plan by administering products and services that broaden visitor access to Smithsonian public programs and services.

The OSEP participates in strategic decision making for advancing the Institution's goals by identifying event opportunities which will help the Smithsonian achieve its objectives, and also helps plan special events to extend the reach of the Institution and energize its representation.

MEANS AND STRATEGY

The OPA allocates resources for national and international media publicity and to expand minority relationships through targeted media outlets. As the Smithsonian Office with primary responsibility for extending the Institution's communications message to online audiences, the OPA manages content on the Institution's central website, Newsdesk, and on the central Smithsonian social media accounts. The OPA works with units throughout the Institution to establish and maintain professional communications guidelines and standards. The OPA

also produces *Smithsonian Science*, an online blog devoted to scientific research.

In addition, the OPA initiates and responds to all media inquiries in a timely manner with accurate, concise information, and generates story ideas for the media, featuring Smithsonian experts, exhibitions, research, and programs. In terms of new initiatives, the OPA also has a leading role in coordinating the rollout of the Institution's *One Smithsonian: Greater Reach, Greater Relevance, Profound Impact* Strategic Plan and many programs, as well as appeals for private support.

The OVS designs and administers systems that visitors use regularly to plan and enjoy their visits, as well as systems that enable Smithsonian staff to better aid on-site visitors. The OVS administers the Smithsonian Information Center at the Castle Building, the outdoor visitor information kiosks adjacent to all museums and galleries, Web applications, and selected publications. In addition, the OVS oversees a comprehensive visitor feedback system that includes the general Smithsonian email address, a telephone call center, comment cards, and surveys.

The OVS also works with relevant units to deliver products and services which help their staff understand and meet the needs of their specific audiences. The OVS systematically analyzes visitor behavior, trends and insights, and delivers pertinent findings to museum and research center teams whose projects will affect how visitors experience the Smithsonian and get the most out of their time in our facilities. The OVS recruits and trains highly qualified, motivated and diverse volunteers to engage with visitors and help Smithsonian staff conduct research projects. The OVS also increases retention of volunteers by offering personal enrichment, award and recognition opportunities.

NONAPPROPRIATED RESOURCES — General trust funds support salaries and benefits of personnel and other related costs. In addition, these funds support information dissemination, outreach, publications, and general operations.

INSTITUTION-WIDE PROGRAMS

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	0	16,784	0	0	0	0	0	0
FY 2019 ESTIMATE	0	16,784	0	0	0	0	0	0
FY 2020 REQUEST	0	17,784	0	0	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	0	1,200	0	1,500	0	300
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	0	766	0	1,266	0	500
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	0	4,400	0	4,600	0	200
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	0	8,197	0	8,197	0	0
Enable Cost-Effective and Responsive Administration						
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	0	2,221	0	2,221	0	0
Total	0	16,784	0	17,784	0	1,000

BACKGROUND AND CONTEXT

Beginning in 1993, Congress has approved the creation of the following Institution-wide funding programs:

- Research Equipment Pool
- Information Resources Management Pool
- Latino Initiatives Pool
- Collections Care and Preservation Fund
- Asian Pacific American Initiatives Pool
- American Women's History Initiative Pool

In 1993, Congress approved the Smithsonian's reallocation of funds to create two Institution-wide funding programs: the Research Equipment Pool (REP) to support the units' needs for state-of-the-art research equipment, and the Information Resources Management (IRM) Pool to systematically address information technology needs throughout the Institution. The Institution first received funds in FY 1995 to support the development of a third Institution-wide program, this one for Latino initiatives, including research, exhibitions, and educational programming. In FY 1998, Congress approved a \$960,000 increase to the IRM Pool specifically dedicated to collections information systems' needs. The FY 2006 appropriation included an increase of \$1 million to establish the Collections Care and Preservation Fund (CCPF). The CCPF provides resources for the highest priority collections management needs throughout the Institution to improve the overall stewardship of the national collections. The FY 2016 appropriation included an increase of \$879,000 for the Latino Initiatives Pool (LIP) and \$400,000 to establish the Asian Pacific American Initiatives Pool to explore and share the contributions of Asian Pacific Americans to the American Experience. The FY 2017 appropriation included an increase of \$1,500,000 to the CCPF and \$200,000 for the IRM Pool. In FY 2018, Congress approved a \$2,000,000 increase to Institution-wide programs in support of the new American Women's History Initiative (AWHI).

The FY 2020 budget requested increase of \$1,000,000 includes \$300,000 in additional funding for the REP, \$500,000 for the IRM Pool, and \$200,000 for the Asian Pacific American Pool.

MEANS AND STRATEGY — RESEARCH EQUIPMENT POOL (\$1,500,000)

The Smithsonian's ambitious research agenda requires appropriate equipment to achieve its goal of Enhanced Interdisciplinary Research. This basic equipment infrastructure requires regular maintenance, upgrades, and routine replacement. With the current allocation, the Institution will continue striving to prioritize and address the many research needs throughout the Smithsonian community. REP funds have enabled Smithsonian museums and research centers to undertake groundbreaking research in numerous areas. For example, genomics is offering new opportunities for exploring biodiversity. To be successful, biodiversity genomics requires a set of cutting-edge genetic technologies such as next-generation sequencing. Similarly, the Institution's

efforts in materials conservation have been greatly enhanced by using highly specialized equipment that has enabled conservators to better identify the age and provenance of artifacts as well as improve the preservation of fragile materials. Investing in equipment and maintenance contracts will allow the Smithsonian to better leverage its collections and expertise in these important areas of research.

MEANS AND STRATEGY — INFORMATION RESOURCES MANAGEMENT POOL (\$3,487,000)

Digitization funding directly supports the Smithsonian's ambition to serve a national and international audience online, offering access to important collections that are not currently on exhibit, and fulfilling the need to document collections for improved inventory control. Creating a portfolio of rapid-capture prototypes to address some of the Institution's most commonly held collection materials will help establish an infrastructure for standardized high-throughput digitization that brings the Smithsonian one step closer to sharing its vast collections with the world. Therefore, this funding supports the Smithsonian's mission for the "diffusion of knowledge."

The IRM Pool supports network operations and server administration. Specifically, the requested funds are used for:

- upgrades and enhancements to the Smithsonian's information technology infrastructure;
- contractor support in the Network Operations Center;
- services of Active Directory and desktop migration technicians;
- network hardware/software maintenance; and
- delivery of Smithsonian digital assets to the public.

MEANS AND STRATEGY — LATINO INITIATIVES POOL (\$2,000,000)

To achieve the strategic goals of Enhancing Interdisciplinary Research and Understanding and Impacting 21st Century Audiences, the LIP provides funding for projects that support Latino programs and focus on U.S. Latino contributions to science, history, and culture. Pool funds have been used to support exhibition and collections development, public and educational programs, research and publications, digital content, and Fellowships and internships.

Projects are selected on a competitive basis as recommended by a peer review panel from proposals that demonstrate cost-effective deployment of pool funds, as well as coordination with other Smithsonian resources and external funding. Since its creation in 1995, the LIP has provided more than \$27.6 million in funding to more than 500 Smithsonian programs and projects.

In addition, the Latino Curatorial Initiative has supported 10 Latino curators at various Smithsonian units. The Initiative was designed to increase Latino representation and scholarship at the Smithsonian. Furthermore, the expanded funding of the LIP has

broadened the Smithsonian's outreach efforts throughout the country. This includes an increased number of traveling exhibitions, public and educational programs, and institutional partnerships. These funds ensure that Smithsonian content is available to more visitors throughout the country and the world, including audiences using digital platforms.

The LIP funding will continue to be directed to Smithsonian leadership and professional development programs as well. An example of this is the Smithsonian Latino Center's Latino Museum Studies Program (LMSP), which now boasts a national alumni network of more than 300 professionals and scholars, some of whom are currently employed at the Smithsonian. Programs such as the LMSP play an important role in creating an extensive pool of qualified museum professionals and cultural specialists at universities, museums, and cultural centers which also collaborate with the Smithsonian.

MEANS AND STRATEGY — COLLECTIONS CARE AND PRESERVATION FUND (\$8,197,000)

Collections stewardship is a key component and core priority of the Smithsonian's new Strategic Plan. Assembled over 173 years, Smithsonian collections are fundamental to carrying out the Institution's mission and Strategic Plan, serving as the intellectual basis for scholarship, discovery, exhibition, and education.

Currently, Smithsonian collections total 155 million objects and specimens; 162,300 cubic feet of archives; and 2.1 million library volumes that include irreplaceable national icons, examples of everyday life, and scientific material vital to the study of the world's natural and cultural heritage, covering subjects from art to zoology. Through its collections, the Smithsonian presents the astonishing record of American and international artistic, historical, cultural, and scientific achievements, with a scope and depth that no other institution in the world can match. As the steward of the national collections, the Smithsonian has the unique responsibility and historic tradition of preserving and making accessible its collections that are held in trust for the public.

To achieve the strategic goal of Preserving Our Natural and Cultural Resources, the CCPF provides critical resources to make targeted improvements in the accountability, documentation, care, preservation, storage, and accessibility of the Smithsonian's vast and diverse collections. With this funding, the Smithsonian has raised the level of collections stewardship in a pragmatic, strategic, and integrated manner by prioritizing and systematically addressing collections care needs. The Institution has succeeded with an approach that is based on sound collections assessment data, innovative collections care methodologies, economies of scale, and project-driven activities, including collections moves and digitization. Smithsonian senior leadership acknowledges that an effective strategy for addressing our shared collections challenges depends on a coordinated, Institution-wide approach. Holistic collections-level management has enabled comprehensive improvements which benefit

the greatest number of collection items and collecting units in an efficient, practical, and cost-effective way.

Collections Physical and Digitization Assessments

In FY 2010, the Smithsonian conducted an Institution-wide collections physical condition assessment. As part of the assessment, Smithsonian collecting units grouped and evaluated their collections holdings based on their management and use, and characterized the quality of collections' physical condition, housing materials, storage equipment, physical accessibility, and collections space. In FY 2012, the National Collections Program (NCP) and the Digitization Program Office (DPO) developed and implemented an Institution-wide assessment tool — the Collections and Digitization and Reporting System (CDRS) — to annually assess the state of collections' physical condition and their digitization, establish priorities, identify areas where improvements are needed, measure progress, and provide a practical framework for the allocation of resources. Based on the collections' physical assessment results, the Smithsonian has used the centralized CCPF to achieve targeted improvements in the preservation and accessibility of collections, ranging from national icons such as the Jefferson Bible to the preservation and management of biomaterials, in the most efficient and cost-effective manner possible.

The NCP has strategically directed central collections care resources to specific collections across the Institution to improve substandard aspects of collections care to an acceptable level and meet professional standards. Working closely with the Digitization Program Office, the NCP has provided essential resources to support the collections care activities required for the success, efficiency, and completion of numerous DPO-supported, unit mass-digitization projects. In addition, these funds have enabled staff to correct specific collections management deficiencies identified in the Smithsonian's Inspector General audit recommendations; facilitate collections moves from substandard facilities and conditions; replace obsolete, substandard storage equipment; support the management and preservation of the Smithsonian's cryo-collections held by the National Zoological Park (NZIP), National Museum of Natural History (NMNH), and the Smithsonian Tropical Research Institute (STRI); improve the preservation and management of time-based media and digital art across the Institution; and support the Preparedness and Response in Collections Emergencies (PRICE) program to strengthen Institution-wide collections emergency management.

Collections Space Planning

In FY 2015, the Smithsonian completed a multi-year, Institution-wide collections space planning initiative, co-chaired by the NCP and Smithsonian Facilities (SF), culminating in the Collections Space Framework Plan (CSFP). As part of this interdisciplinary planning initiative, the Smithsonian completed a first-of-its-kind survey of existing collections space conditions, representing more than 2.1 million square feet of space, or 18 percent of total Smithsonian building space. The survey provided a snapshot of collections space conditions and rated the quality of collections space,

storage equipment, accessibility, environmental conditions, security, and fire safety. The CSFP includes recommendations and a 30-year implementation plan for addressing current and projected pan-Institutional collections space requirements in a strategic, integrated, and collaborative manner. The plan is a road map to guide short- and long-term facilities, real estate, and collections care project decisions, providing renovation and construction strategies that address unacceptable collections space conditions. The plan also allows for decompression of overcrowded collections to make them more physically accessible, anticipates future collections growth, and reduces reliance on leased space for collections storage.

To address near-term space requirements, the implementation of the CSFP includes: (1) the completion of the decontamination of collections in Garber Buildings 15, 16, and 18, including processing, re-housing, and temporary storage in Building 37; (2) the construction of Pod 6 at the Museum Support Center to relocate at-risk collections from the Paul E. Garber Facility, and several Mall museums, as well as provide essential temporary swing and permanent collections space for the National Museum of American History (NMAH) East Wing public renewal project; (3) the construction of two new storage modules and a hangar adjacent to the Udvar-Hazy Center to support the continued move of the National Air and Space Museum (NASM) collections from substandard conditions at the Garber Facility and the immediate need for temporary collections swing space during the NASM Mall building renovation; and (4) the completion of the Suitland Collections Center master plan to enable a phased redevelopment of the Suitland campus.

The Smithsonian has robust Institution-wide data on the national collections, their physical condition, state of digitization, and current collections space conditions. When combined, this information provides key tools and direction for improving the management, care, and accessibility of Smithsonian collections. In FY 2020, the Smithsonian will continue to build on collections initiatives and strategically address the preservation, digitization, and storage space needs of collections, based on the results of the Institution-wide physical and digitization collections assessments and collections space survey.

MEANS AND STRATEGY — ASIAN PACIFIC AMERICAN INITIATIVES POOL (\$600,000)

To achieve the strategic goals of Enhancing Interdisciplinary Research and Understanding and Impacting 21st Century Audiences, and documenting the full spectrum of the American Experience, the Asian Pacific American Initiatives Pool (APAIP) provides funding to support research, exhibitions, educational programs, collections, digital and media projects, and partnerships with local and regional cultural organizations.

Projects are selected on a competitive basis from proposals that demonstrate effective deployment of the pool funds, coordination with other Smithsonian resources, and successful external fund raising from the private sector. Since its inception in

FY 2016, the APAIP has provided funding to more than 33 Smithsonian programs and projects, and increased the Asian Pacific American presence in the Smithsonian's presentation of and research into the American Experience. In FY 18, the APAIP supported its first curator dedicated to Asian Pacific American History at the National Museum of Natural History. The FY 20 request includes an additional \$200,000 to build upon the expanding pool request to expand collections, exhibitions, and public programs focused on Asian Pacific Americans.

MEANS AND STRATEGY — AMERICAN WOMEN'S HISTORY INITIATIVE POOL (\$2,000,000)

The American Women's History Initiative (AWHI), funded by Congress in FY 2018, will heighten the public's knowledge and appreciation of the transformational role women have played in constructing our national identity and culture. The Smithsonian Institution, through AWHI, will: (1) magnify the contributions of women through exhibitions, programs and educational content; (2) increase the representation of women online by building on the Institution's trusted resources; (3) hire curators committed to amplifying American women's history; and (4) expand the national collection, both online and on site, to better portray how women have shaped this country. The Smithsonian Institution is partnering with public and private entities to secure funding for its outreach and impact. In FY 2019, the Institution will establish a national advisory committee to play a key role in shaping the initiative and securing resources for representing the constituencies and stakeholders of the AWHI.

In FY 2018, the American Women's History Initiative supported the development of two major exhibitions: *Vote for Women: A Portrait of Persistence*, at the National Portrait Gallery, to open in spring 2019; and *Girlhood: It's Complicated*, which is scheduled to open in 2020 at the National Museum of American History. In FY 2019, AWHI funds support the continued development of *Girlhood: It's Complicated*, as well as *Tiffany Chung: Vietnam, Past Is Prologue* at the Smithsonian American Art Museum, and *Reforestation of the Imagination* at the Renwick Gallery. AWHI-funded curators work across the Institution, interns are invited to collaborate with staff, and AWHI teams launched an ambitious digital strategy and identified key tech industry partners to better serve target audiences. This includes outreach to middle-school students, college students, and women and girls of color. In FY 2020, we intend to mature in all these areas, as well as launch a symposia series to complement ongoing efforts. Our goal is to amplify women's history to local, national, and international audiences.

EXPLANATION OF CHANGE

- **Research Equipment Pool — Base: (\$1,200,000); FY 2020 Increase: (+\$300,000)**

The Institution requests an increase (+\$300,000) to the Research Equipment Pool (REP). The Smithsonian's ambitious research agenda requires appropriate equipment to achieve its goal of Excellent Interdisciplinary Research. This basic equipment infrastructure requires regular maintenance, upgrades, and routine replacement. With the current allocation, the Institution cannot effectively address the many research needs throughout the Smithsonian community. REP funds have enabled Smithsonian museums and research centers to undertake groundbreaking research in numerous areas. For example, genomics is offering scientists new opportunities for exploring biodiversity. To be successful, biodiversity genomics requires a set of cutting-edge genetic technologies such as next-generation sequencing (NGS). Similarly, the Institution's efforts in materials conservation have been greatly enhanced by using highly specialized equipment to enable conservators to better identify the age and provenance of artifacts as well as improve the preservation of fragile materials. Continuing to invest in additional equipment and supporting the maintenance contracts will allow the Smithsonian to leverage its collections and expertise in these important areas of research.

- **Asian Pacific American Initiatives Pool — Base: (\$400,000); FY 2020 Increase (+\$200,000)**

The Institution requests an increase (+\$200,000) to the Asian Pacific American Initiatives Pool (APAIP) to \$600,000 annually. Since its inception in 2016, the APAIP has funded 33 projects in 15 units with its original \$400,000 annual federal appropriation. Each year, the pool has received more high-quality proposals than it can afford to fund. In FY 2019, the APAIP received more than \$600,000 in requests and, as a result, many projects received only partial funding and some important requests were not funded at all. By increasing the amount of funds available, the APAIP can continue to expand the Asian Pacific American presence in the Smithsonian's presentation of and research into the American experience. With additional funding, the number of APAIP-supported curatorial positions can be increased, and more projects can be developed.

- **Information Resources Management Pool — Base: (\$2,987,000); FY 2020 Increase (+\$500,000)**

The budget requests an increase (+\$500,000) to support an Institution-wide pool to ensure that the units with the highest priority projects receive the necessary funds. In accordance with Smithsonian Directive (SD) 610, Digitization and Digital Asset Management Policy, Smithsonian units have articulated their implementation of priorities in unit digitization plans (UDPs) and created foundational digital asset

management plans to ensure that the Smithsonian can effectively manage digital content for scientific studies.

In addition, the Smithsonian has strategically invested in creating a standard mass-digitization process that enables replicable, cost-effective, high-throughput projects, and high-quality digitization for all Smithsonian priority collections. Digitization efforts to implement this process have resulted in digital images for more than 400,000 collection objects, doubling the rate of digitization at the Smithsonian. This budget request will accelerate the Institution's digitization progress by turning more time-limited, mass-digitization prototypes into production projects and enable innovative use of these collections in newly emerging fields such as data science and artificial intelligence.

SMITHSONIAN EXHIBITS

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	28	3,169	15	446	0	0	0	0
FY 2019 ESTIMATE	28	3,169	15	276	0	0	0	0
FY 2020 REQUEST	28	3,169	15	276	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Understand and Impact 21st Century Audiences						
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	23	2,385	23	2,385	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	5	784	5	784	0	0
Total	28	3,169	28	3,169	0	0

BACKGROUND AND CONTEXT

The Smithsonian Exhibits (SIE) office is a full-service exhibit planning, design, and production shop supporting Smithsonian public exhibitions that connect the American people and international audiences with the richness of Smithsonian content and collections. SIE is the Smithsonian-wide exhibit resource available to all Smithsonian museums, research centers and Affiliates and, in partnership with colleagues throughout the Institution, delivers the highest quality exhibit design, interpretive writing, editing, project management, graphic production, fabrication, installation, and 3D services.

To achieve the strategic goal to Understand and Impact 21st Century Audiences, the SIE will continue to focus on its core mission of planning, designing, and producing exhibitions for the Institution. Clients with full, limited or no design or production capabilities can use the SIE for complete or partial exhibition services, including design, refurbishing, signage, acrylic casing, cabinetry, model making, crating, and artifact mounting.

The SIE fosters collaboration among units by providing expert consultation, especially in the early stages of exhibition planning. With a broad array of skills, the SIE exhibit specialists network across the Smithsonian, enabling the creation of more compelling exhibits that connect the American people to their history as well as their cultural and scientific heritages.

For clients who seek specialized exhibition-related services, the SIE will continue to develop digital interactive and multi-media services, and expand its expertise in computer-controlled production and automated modeling technologies such as 3D scanning and printing. In addition, the SIE will provide opportunities for Smithsonian colleagues to take advantage of its state-of-the-art facility, allowing trained staff to work with the specialized equipment.

The SIE's Object Storage Facility (OSF) offers secure, climate-controlled storage for artifacts during production. The SIE, in its work to advance the strategic goal to Understand and Impact 21st Century Audiences, and the Smithsonian's expansive collections, will continue to support exhibitions in the S. Dillon Ripley Center concourse, as well as in the Commons, Schermer, and Great Hall galleries in the Smithsonian Castle.

The SIE also conducts forums for exhibit staff throughout the Smithsonian to inspire creativity, innovation, and collaborations which result in cutting-edge exhibitions and technological advances. The SIE is expanding its skills in interpretive master planning and exhibition development services to include prototyping and interactive development for diverse design projects.

MEANS AND STRATEGY

As the Institution's most comprehensive producer of exhibits, the SIE is dedicated to providing its Smithsonian clients with first-class exhibition design, editing, production, and installation services. Each year, the SIE designs and produces approximately 100 projects, large and small, for almost every office and museum in the Smithsonian.

In FY 2020, most SIE resources will stay focused on achieving strategic goals to Understand and Impact 21st Century Audiences and Enable Cost-Effective and Responsive Administration by:

- improving the quality of exhibition design, consultation, production, and installation services;
- increasing and maintaining staff knowledge and expertise in state-of-the-art technology, techniques, and advances in the exhibition field, and upgrading equipment to support emerging trends;
- cross-training staff within SIE to share their expertise and maximize efficiencies;
- demonstrating new exhibition design technologies to Smithsonian units; and

- promoting exhibition excellence, unit sharing of resources, and advancement of exhibitions as an interpretive medium throughout the Smithsonian Institution.

The SIE will accomplish these objectives by focusing exclusively on exhibit-related work, freeing up SIE staff with specialized experience to concentrate on the SIE's core mission: the planning, design, and production of exhibits. Building on well-established, collaborative relationships with other Smithsonian design and production staff, the SIE will continue to play a strong role in sharing its expertise with other Smithsonian units. These initiatives will result in a more informed and expert staff that can do more to maintain the Smithsonian's leadership role in the field of exhibition design and production.

NONAPPROPRIATED RESOURCES — General trust funds support SIE salaries and benefits for project management, design, and exhibit specialists, as well as general operations, equipment services, and maintenance requirements.

MUSEUM SUPPORT CENTER

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	18	1,906	0	3	0	0	0	0
FY 2019 ESTIMATE	18	1,906	0	0	0	0	0	0
FY 2020 REQUEST	18	1,906	0	0	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	18	1,906	18	1,906	0	0
Total	18	1,906	18	1,906	0	0

BACKGROUND AND CONTEXT

The Museum Support Center (MSC) is the Smithsonian's principal off-site collections preservation and research facility. Located in Suitland, Maryland, the facility houses more than 77 million objects, or 55 percent of the Institution's irreplaceable national collections, primarily from the National Museum of Natural History (NMNH). Other Smithsonian museums using the facility include the National Museum of American History, the Hirshhorn Museum and Sculpture Garden, the Freer and Sackler Galleries, the National Museum of African Art, the National Postal Museum, the Smithsonian Environmental Research Center, and the National Zoological Park. External agencies storing collections at the MSC include the Walter Reed Biological Unit (WRBU), and the National Institutes of Health.

The collections at MSC are used to support scientific and cultural research for essential Government functions such as food and transportation safety, border security, criminal investigations, forensics, national defense, the evaluation of environmental disasters, cancer research, and much more.

The MSC accommodates collections with a variety of state-of-the-art equipment: collections in cabinets; mobile shelving for biological specimens preserved in alcohol; meteorites in nitrogen atmosphere; tissues and film in mechanical and nitrogen-vapor freezers; high-bay storage for oversized objects

such as totem poles, boats, and large mounted mammals; and large mobile racks for storing art works.

The facility includes four buildings, including a greenhouse, laboratory and oversized storage area in addition to the main building. These facilities house laboratories for Smithsonian scientists and other federal agencies, such as the WRBU. These laboratories focus on molecular systematics, ancient DNA, conservation, and other specialized research. The MSC supports contracted maintenance services and required calibration for much of the specialty collections preservation, laboratory equipment and safety systems, such as environmental chambers, freezers, nitrogen systems, reverse osmosis water systems, and oxygen-detection systems. The MSC staff provides project planning and construction coordination, collections care, safety and disaster response, access and logistical support, as well as administrative and shipping services.

MEANS AND STRATEGY

To support the Smithsonian strategic goal of Preserving Our Natural and Cultural Heritage, the MSC will work to improve the stewardship of the national collections. The FY 2020 funding will be used to further enhance pest management, improve storage of hazardous collection materials, and assist museum staff in improving storage of collections at MSC. Additionally, with base funding the MSC will focus on increasing staffing to oversee shipping functions. Shipping has become more complex and dynamic with the fast expansion of e-commerce, international sanctions, customs and duties changes, and security threats to the transportation systems. Irreplaceable objects are often received or sent out through loan programs. The additional shipping staff will work closely with collections staff to mitigate risks to the collections and museums by ensuring compliance with both national and international rules and regulations, including oversight of prohibited items.

In FY 2020, MSC staff will continue to support maintenance of the national collections and the research equipment needed to protect staff and collections, including projects to upgrade old environmental control systems for collections spaces. In addition, the MSC will further prepare for the multi-phased master plan renovations at the Center, which will improve and update support systems and laboratory spaces at the facility. Staff will continue to work on space reallocations and collections improvement projects.

MUSEUM CONSERVATION INSTITUTE

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	22	3,359	0	11	3	411	0	0
FY 2019 ESTIMATE	22	3,359	0	70	3	647	0	0
FY 2020 REQUEST	22	3,359	0	5	3	497	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	7	1,113	7	1,104	0	-9
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	1	118	1	118	0	0
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	1	145	1	147	0	2
<i>Education</i>						
Engage and inspire diverse audiences	1	106	1	106	0	0
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	8	1,095	8	1,104	0	9
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	4	782	4	780	0	-2
Total	22	3,359	22	3,359	0	0

BACKGROUND AND CONTEXT

The Smithsonian's Museum Conservation Institute (MCI), located in Suitland, Maryland, is the center for specialized technical collections research and conservation

for all Smithsonian museums and collections. The MCI combines knowledge of materials and the history of technology with state-of-the-art instrumentation and scientific techniques to provide technical research studies and interpretation of artistic, anthropological, biological, and historical objects. Through its Protecting Cultural Heritage and Preventive Conservation Programs, and by participating in the Smithsonian's signature Preparedness and Response in Collections Emergencies (PRICE) program, the MCI responds to the threats facing cultural heritage in multiple and complex ways. This includes: analyzing and consulting on preservation environments; developing less invasive and damaging storage, display, and conservation techniques; and supporting U.S. agencies and the museum community in identifying illicitly trafficked cultural heritage artifacts and objects. For example, the MCI works with the U.S. Department of State on a highly successful training program at the Iraqi Institute for the Conservation of Antiquities and Heritage in Erbil, which supports the rescue and recovery of Iraqi and regional cultural heritage artifacts.

The MCI, as the only Smithsonian resource for technical studies and scientific analyses for most of the Smithsonian's collections, brings unique analytical capabilities to Smithsonian researchers, including a central mass-spectrometry instrument core and advanced technological capabilities for analyzing biomolecules. These services are available to Smithsonian units at no charge. In addition to responding to requests for consultations from within the Smithsonian, the MCI handles requests from affiliates and outside organizations, such as the White House, U.S. Congress, U.S. Department of Homeland Security — Homeland Security Investigations, U.S. Department of State, and many other federal, museum, and academic organizations.

MEANS AND STRATEGY

To achieve the strategic goal of Enhanced Interdisciplinary Research, the MCI will collaborate with the Smithsonian's scientific researchers and research centers and provide increased technical and research assistance to Smithsonian arts and humanities researchers, collections, and museums. The MCI will initiate, facilitate, and support technology transfer for the Smithsonian's collaborative research projects by using biomolecular mass-spectroscopy, including biological isotopes and proteomics (i.e., the large-scale study of proteins; particularly, their structures and functions). The MCI will also conduct fundamental research into mechanisms of degradation and biodeterioration, preserve cultural heritage, and harness new technologies. The MCI's research programs will cross boundaries between Smithsonian units as well as support all of the Institution's signature programs and Institution-wide stakeholders. The MCI will also support the conservation and heritage science fields through publications, hosted symposia, presentations, invitation-only seminars, lectures, and its website, to disseminate the results of its research programs.

In FY 2020, the MCI will continue to develop its biomolecular mass-spectrometry and proteomics capabilities as a part of the Smithsonian's central research infrastructure. Proteomics is an area of rapid growth in biological and medical research that is being driven by advances in molecular separation and mass-spectrometry

technology. Along with genomics, the field has a potential for rapid acquisition of data that speeds the discovery and identification of organisms, the linking of genotypes and phenotypes, and the development of novel biomolecular markers. Proteomics, in tandem with genomics, is expanding our understanding of biological and ecological functions. These capabilities will allow the MCI to gather more information from Smithsonian collections, cultural objects, and biological specimens, and to learn more about their materials, their origins, and the causes of their deterioration.

To achieve the strategic goal of Expanding Digital Technologies, the MCI will provide improved digitization support for making Smithsonian research and collections accessible in ways that broaden public access to collections, exhibitions, and outreach programs. The MCI will conduct advanced research and development into effective and economical digital imaging technologies that are appropriate for Facebook, Twitter, YouTube, Flickr, blogs, mobile applications, and virtual reality. The MCI will respond to the Smithsonian's goal of reaching one billion people by revitalizing the MCI webpages to engage 21st-century audiences and to highlight the Institute's large, visionary, interdisciplinary research and scholarly projects. The MCI will make its own research products and records secure and accessible through network SharePoint workflows and Smithsonian digital research repositories, such as SIdora and Smithsonian Research Online.

To achieve the strategic goal of Understanding and Impacting 21st Century Audiences, the MCI will provide reference services and disseminate information to professionals and the public. The MCI's technical information office will continue serving the museum and cultural heritage management communities, museum studies students, and the public. The technical information office answers direct inquiries and distributes general guidelines in printed and electronic formats, handling more than 800 information requests annually. The MCI will continue to enhance its digital and social media to increase the impact of the Institute's research and outreach programs. The MCI, in collaboration with Smithsonian museums and Affiliates, will offer public programs to present the results of MCI research, heighten awareness of the problems of preserving cultural heritage, and gain information about the nature and scope of problems that the Institute's clients encounter. The MCI will also collaborate with Smithsonian museums and Affiliates to offer media events, printed and Internet materials, presentations, workshops, and demonstrations to reach new audiences, especially those that will be targeted by the Institution's newest museums.

In addition, to achieve the goal of education, the MCI will engage and inspire diverse audiences, focusing on training higher-education students and professionals. The MCI will continue to promote career development for Smithsonian conservators and other collections care providers through colloquia, symposia, and workshops, as well as distance-learning opportunities. The MCI will continue to offer internships and Fellowships for students pursuing careers in conservation and conservation science, as well as support diversity programs inside and outside of the Smithsonian, which are seeking to attract students from a wider variety of backgrounds to pursue conservation and conservation science careers.

In particular, the MCI will participate in initiatives with Historically Black Colleges and Universities (HBCUs) and other local and national partners to highlight cultural heritage and conservation as possible career paths. Through its partnership in Science and Engineering in Arts, Heritage, and Archaeology (SEAHA), housed at the University College, London, the University of Oxford, and the University of Brighton, the MCI is supporting advanced training for museum professionals who want to learn new methods of digital documentation for cultural heritage collections and obtain new tools for evaluating museum storage environments.

In keeping with this goal, the MCI is providing in-kind support and leading a partnership with the Iraqi Institute for the Conservation of Antiquities and Heritage program to train local communities in the rescue and recovery of regional cultural heritage. The crisis caused by ISIS has endangered irreplaceable world cultural heritage, and efforts to recover from the destruction wrought by ISIS have diverted funding previously supplied by Iraqi and Kurdish regional governments, creating a desperate need for outside support until the situation stabilizes. Currently, an interagency agreement with the Department of State and other grants are supporting salvage and recovery at the important archaeological site of Nimrud and other major cultural heritage sites in Iraq. The Smithsonian continues raising additional funds for operations and expanded programs at the Iraqi Institute. Given adequate support, the Institute can become a regional center to educate the local population in the preservation of cultural heritage.

To achieve the strategic goal to preserve Our Natural and Cultural Heritage, the MCI will support Smithsonian museums and research centers in their efforts to improve stewardship and scholarship of the national collections and will disseminate collections information to the larger museum community and the public. The MCI will pursue collaborative conservation treatment projects with other Smithsonian units to provide conservation guidance and analytical technical consultations to the art and history museums for their more challenging and unique objects. The MCI has a proven track record of establishing scientifically-based environmental standards for museum collections, detecting unsafe conditions and materials for museum exhibition and storage, and solving biodeterioration problems — including those that involve buildings and monuments. The MCI is expanding its research in preventive conservation by developing new tools and partnerships that aid in understanding and avoiding deterioration caused by environmental factors. By participating in the PRICE team, the MCI supports the development of best practices in collections care across the Institution. Through development of a new photograph and paper conservation lab, the MCI will support conservation and research for the Smithsonian's fragile and at-risk photographic collections. The MCI will continue its study of the assessment and remediation of collection hazards.

In addition, the MCI will focus on using less invasive and damaging materials and procedures for collections conservation, reflecting the importance of incorporating energy-efficient and "green" materials and practices into the Institute's work. Through continuing communication and interaction with museum conservators, the MCI will

identify special training needs and research projects, and will develop research and symposia to address the most urgent collections preservation needs, such as preventive conservation in museum environments (involving light, temperature, humidity, and pollutants), and museum hazards (such as pests and pesticides).

To achieve the strategic goal of Enabling Cost-Effective and Responsive Administration, the MCI will support an efficient management infrastructure. The MCI will use the Smithsonian's Strategic Plan and its own strategic plan to properly allocate its budgetary and human resources, and to secure additional financial resources for its high-priority programs. Resource allocations will be tracked against performance metrics in each of the strategic areas, and against the needs and goals of the Smithsonian's museums and research centers. The MCI will encourage staff to participate in budget-performance integration, succession management, and leadership development programs. In addition, the MCI will continue to implement and communicate efficient, rational, and creative operational and administrative practices which enable staff to advance the Smithsonian mission in a manner that reflects transparency and the Smithsonian's status as a public trust.

Finally, the MCI will maintain an efficient, collaborative, committed, innovative, and accountable workforce through leadership development, evaluation, and support of staff, and the recruitment, selection, and development of diverse, highly skilled employees. The MCI will promote diversity in all aspects of working with the Institution's employees, Fellows, interns, volunteers, and vendors. In addition, the MCI will continue to improve communications with internal and external stakeholders in both the public and private sectors.

NONAPPROPRIATED RESOURCES — Annually, the MCI receives nonappropriated resources from gifts and endowments, grants and contracts, discretionary income, and business ventures. These sources provide funds for specific programs and projects in research, education, and outreach designated by the donor/sponsor, and for general activities at the discretion of the director of the MCI. The Andrew W. Mellon Foundation challenge grant provides a restricted endowment of \$5 million, with an annual payout of approximately \$250,000. The funds generated by the endowment will remain in the MCI budget to strengthen conservation science research.

SMITHSONIAN INSTITUTION LIBRARIES AND ARCHIVES

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	106	13,696	15	2,285	9	1,721	0	0
FY 2019 ESTIMATE	110	14,258	15	2,478	7	1,398	0	0
FY 2020 REQUEST	110	14,458	16	2,508	7	1,468	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in impactful scientific research and discovery	19	3,249	19	3,298	0	49
Engage in vital arts and humanities research	24	3,207	24	3,253	0	46
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	18	2,117	18	2,151	0	34
Understand and Impact 21st Century Audiences						
Exhibitions						
Offer compelling, first-class exhibitions	1	107	1	109	0	2
Education						
Engage and inspire diverse audiences	1	103	1	105	0	2
Public Programs						
Provide relevant reference services and disseminate information to the public	5	431	5	431	0	0
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	31	3,410	31	3,459	0	49
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	11	1,634	11	1,652	0	18
Total	110	14,258	110	14,458	0	200

BACKGROUND AND CONTEXT

In the interest of operational efficiency, the Institution recommends merging the Smithsonian Libraries and the Smithsonian Archives. The goal is to

improve the Smithsonian's ability to meet new and growing needs in the areas of libraries and archives. The two related fields of library and archival science face similar challenges in terms of access to and preservation of the national collections. The reorganization would help address that through the specialization of existing staff to improve skill sets and knowledge in the areas of collections management, conservation, and digital access; the elevation of the importance of new trends in archival and library sciences; and streamlining senior management.

Smithsonian Institution Libraries — The Smithsonian Institution Libraries (SIL) promotes new ideas through knowledge sharing and plays a dynamic role in both advancing scientific and cultural understanding and preserving America's heritage. Its expert staff and extensive collections are a crucial resource for research and education communities at the Smithsonian, within the United States, and around the world.

Smithsonian Institution Archives — The Smithsonian Institution Archives (SIA) serves as the institutional memory of a unique cultural organization. The SIA is responsible for ensuring institutional accountability, and for enhancing access to the unique and diverse resources in its care. SIA's collections document the history of the Smithsonian from its founding in 1846 to the present. SIA supports the Smithsonian community, scholars, and the public by acquiring, evaluating, and preserving the records of the Institution and related documentary materials, as well as by making them accessible online and on site. SIA manages the care, storage, packing, and retrieval services for the Institution's records. Records include a wide variety of analog and digital formats. These permanent records are stored, safeguarded and preserved in specialized environments in facilities in Washington, DC, Landover, Maryland, and Boyers, Pennsylvania. Digital holdings are stored on SIA-owned servers at the Institution's data center in Herndon, Virginia. SIA develops policies, provides guidance for managing and preserving the Institution's vast archival collections, offers a range of reference, research, and record-keeping services, and creates products that promote understanding of the Smithsonian and its history and mission. SIA provides professional expertise to the Institution, cultural heritage professions, and the public.

The FY 2020 budget request includes an increase of \$200,000 for inflationary increases in library subscriptions, which appears in the Fixed Costs section of this budget submission.

MEANS AND STRATEGY

Smithsonian Institution Libraries — SIL's new strategic plan demonstrates the Libraries' dedication to providing information and creating innovative services and programs for the Institution and the public. SIL offers a variety of information resources, unique collections, research support services, and

discovery tools to establish the Smithsonian as a national leader in each of the five Grand Challenges included in the 2017– 2022 SI Strategic Plan. In FY 2020, SIL will continue to broaden interactive engagement with users by expanding projects that include digital transcription of manuscripts, including new collections like the History of Science Manuscripts collection acquired in 2018. Working with Web-based communities, the SIL will increase collections and other Web content available for use by scholars, students, teachers, researchers, and interested users worldwide.

In addition, SIL will continue to grow its use of social media by making more information and collections available on mobile and tablet devices. The SIL will use blogs, Facebook, Twitter, Tumblr, Instagram, Wikimedia platforms and other emerging social media tools to promote services and expand access to its collections. SIL will continue to expose its collections to a wider educational audience through the educational Smithsonian Libraries Unstacked program on various platforms, including the Smithsonian's Learning Lab.

SIL will achieve the strategic goal of Expanding Digital Technologies by offering valuable collections information on networked resources, which now include Smithsonian Online Virtual Archives (SOVA). These initiatives include Web-based and hosted management and access tools for electronic collections and resources, and the continuing expansion of collections information and data on the Smithsonian Institution Research and Information System (SIRIS). In addition, through the Smithsonian Collections Search Center (SCSC), SIL provides access to research collections covering more than 476,000 pieces of trade literature and commercial catalogues, representing more than 35,000 manufacturers, corporations, and companies, and more than 150,000 files of art ephemera. SIL provides metadata guidance and incorporates, as appropriate, emerging national metadata standards on an Institution-wide basis for the Libraries and Smithsonian digital publications and products.

SIL collaborates with other Smithsonian units and external organizations in many ways. SIL creates and publishes digital research products to give scholars in all fields the documentation they need for their research. These products include republication and distribution of significant out-of-print books and articles, original diaries and manuscripts, collections of archival literature, illustrations, topical exhibitions, and bibliographic guides and databases. With private funding, SIL hosts the Secretariat for the Biodiversity Heritage Library, an international project to improve the research process by digitizing and making easily available the literature of biodiversity, working with partners in the United States, United Kingdom, China, Egypt, the European Union, Australia, Brazil, Singapore, sub-Saharan Africa, and Mexico. SIL supports these efforts by continuing to digitize its own biodiversity literature to contribute to this global digital library. In FY 2020, SIL will continue to increase digitization projects in history, arts, and culture as part of the Smithsonian Libraries' larger digital library. Through these projects, SIL participates with similar institutions such as the

Consortium for the History of Science, Technology, and Medicine, the Digital Public Library of America, the Internet Archive, the Getty Art Portal, and the Global Philatelic Library. SIL's recent contribution of rare/special collection records to the latter's search hub led to wider visibility, and three new Fellows came to the Smithsonian Institution as a result. SIL plans to expand its research audience through similar projects in the fields of arts and history.

SIL collaborates with the Smithsonian Scholarly Press to produce the electronic *SI Contributions* series and other publications (including conference proceedings) and assists the Scholarly Press in meeting the public access mandate for federally funded research. SIL constantly expands and maintains the Smithsonian Research Online (SRO) database (<http://research.si.edu/>), which includes the Smithsonian Digital Repository (SDR), and the Smithsonian Research Bibliography (SRB), to preserve and provide permanent access to the published results of the Institution's scholarly research. Data from SRO serve as one of the Smithsonian's key performance indicators; accordingly, SIL continues to develop additional tools that will provide metrics on the impact, both scholarly and social, of Smithsonian research. As part of its collaborative operations, SIL will continue working with the Institution's art and history museums to expand the content of the SRO system, with the goal of eventually providing a complete record of Smithsonian research productivity. In addition, to give Smithsonian authors, researchers, and scientists more visibility, SIL launched Smithsonian Profiles in FY 2018, a system that links users to additional work related to Smithsonian scholarly output.

SIL continues to provide scholarly, often rare, material in both physical and digital forms. This involves acquiring, preserving, cataloguing, and managing both print and digital collections, with particular attention to Smithsonian research centers and areas of interdisciplinary research. The staff of SIL's Book Conservation Laboratory preserves and stabilizes damaged volumes to ensure their availability for exhibition and future research. Through the Libraries' expert resource-sharing services, SIL shares and provides materials and information directly to individual researchers and members of the public nationwide and in many foreign countries.

As a resource for learners everywhere, SIL responds to staff and on-site visitor needs through reference services, by integrating librarians into the research cycle and redesigning facilities to retain tightly focused, local collections in collaborative, congenial spaces. At the same time, SIL relieves overcrowded libraries by providing environmentally sound off-site shelving and housing at the Institution's Pennsy Drive facility in Maryland.

In FY 2020, planning will continue for renovations to the American Art/Portrait Gallery Library to improve the space for researchers and students. In FY 2019, the National Air and Space Museum (NASM) Library was relocated to

the Udvar-Hazy Center in Chantilly, Virginia. The NASM Special Collections will move to the Udvar-Hazy Center in FY 2020.

By helping to advance the strategic goal of Enhanced Interdisciplinary Research, the SIL Resident Scholar Program builds collaborative partnerships worldwide with scholarly programs and individuals who find the Libraries' collections vital to their research. An active internship program amplifies work experiences for emerging library science professionals and undergraduates in other fields of study, including computer science, and exposes them to the research library environment.

Smithsonian Institution Archives — In FY 2020, SIA will continue to focus on capturing, preserving, and providing access to materials in its collections. SIA will continue to support the needs of thousands of researchers seeking information from the Archives; provide expanding online access to more information in or about the holdings via its reference staff and robust website; continue to collaborate fully with Smithsonian units and broad external audiences (including scholars, educators, peer professionals and the general public); set archival collections-management and digital management standards; and assist all Smithsonian units with the proper disposition of their records.

SIA's major challenges include long-term storage solutions for both physical and digital collections. Balancing existing resources with the increased costs associated with maintaining quality storage environments will require coordination with central Smithsonian offices (including Smithsonian Facilities, the Office of Contracting and Personal Property Management, and the Office of Planning, Management and Budget) for analog materials. The challenge for digital materials include the costs of maintaining the necessary information technology and software environments, and maintaining and developing the skill sets required to preserve and provide access to those materials.

NONAPPROPRIATED RESOURCES —

Smithsonian Institution Libraries: General trust funds help defray the costs of providing information services to Smithsonian units, and support publications, public programs, and fundraising efforts. In FY 2020, SIL will continue to raise funds through its own advancement efforts. SIL also continues to build upon its education program, with special emphasis on creating content for K–12 learners, and includes education among its established priorities of acquisitions, conservation, digitization, internships, Fellowships, and exhibitions.

Smithsonian Institution Archives: General trust funds for SIA support the salaries and benefits of 20 percent of the archivists, conservators and social media staff. The funds also support their work to manage and preserve the collections of the Institution and their efforts to provide professional conservation expertise throughout the Smithsonian, to other institutions, and to the public.

OFFICE OF THE CHIEF INFORMATION OFFICER

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	95	52,009	18	3,887	0	390	0	0
FY 2019 ESTIMATE	95	52,509	18	3,681	1	430	0	0
FY 2020 REQUEST	97	55,409	18	3,681	0	400	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	4	1,648	4	1,648	0	0
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	11	4,320	13	4,720	2	400
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	10	2,653	10	2,653	0	0
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	9	1,917	9	1,917	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	21	12,606	21	12,606	0	0
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	40	29,365	40	31,865	0	2,500
Total	95	52,509	97	55,409	2	2,900

BACKGROUND AND CONTEXT

The Office of the Chief Information Officer (OCIO) provides vision, leadership, policy, applications, services, and oversight associated with managing and operating leading-edge information technology (IT) solutions for the Institution's strategic priorities, as well as for the Smithsonian's many museums and research and cultural centers.

The FY 2020 budget request includes an increase of 2 FTEs and \$400,000 for IT security and \$2,500,000 to cover higher communication costs, which are further justified in the Fixed Costs section of this budget submission.

MEANS AND STRATEGY

The OCIO will use best practices in the implementation, management, and operations of information technology to enhance the “increase and diffusion of knowledge” and achieve the Institution’s strategic goals for Enhanced Interdisciplinary Research, Reaching one Billion People a Year with a Digital First Strategy, Understanding and Impacting 21st Century Audiences, and Enabling Cost-Effective and Responsive Administration. The OCIO collaborates with industry partners, cultural organizations, academia, and the public to develop innovative solutions for research and digitization challenges, and to make the Institution’s digital collections available to the world.

The following strategies are cross-cutting and central to the Smithsonian’s strategic plan and mission of connecting Americans to their history and heritage, as well as to promote innovation, research, and discovery in science:

- Leverage commercially available and open-source technologies to provide digital platforms for the Institution to increase public access to digitized collections and research data;
- Use state-of-the-art, secure information systems to modernize financial, human resources, facilities management, collections, education, and research processes;
- Replace network equipment, servers, desktop computers, and scientific workstations on an industry best practice life cycle to increase reliability and improve the security of information systems and the data that they contain;
- Maintain and enhance the Institution’s telecommunications infrastructure to provide reliable, secure, and cost-effective voice and data communications systems that support Smithsonian missions;
- Meet federal requirements for providing timely and accurate financial information;
- Increase the use of data science and artificial intelligence to drive innovation in research and collections management in a cost-effective manner;
- Invest strategically in creating a standard mass-digitization process that enables replicable, cost-effective, high throughput, and high-quality 2D digitization for all Smithsonian priority collections. Digitization efforts to implement this process have resulted in digital images for one million collection objects in 2018 alone, thereby doubling the rate of digitization at the Smithsonian; and
- Develop automation processes to scale up our 3D digitization efforts while ensuring that our 3D data models remain durable over time; and
- Continue to improve and refine the Institution’s IT Security Program.

EXPLANATION OF CHANGE

Information Technology (IT) Security — (+\$400,000, +2 FTEs)

The Institution's security program is independently assessed on an annual basis by our Office of the Inspector General (OIG), using the National Institute of Standards and Technology (NIST) Cybersecurity Framework. Based on our internal assessments, and supported by recommendations from the OIG, additional efforts are required to improve our ability to detect, respond and recover from emerging vulnerabilities and achieve what the Department of Homeland Security (DHS) defines as an “effective” security program.

This request includes funds to support improvements in our Information Security Continuous Monitoring (ISCM) and incident response capabilities to more rapidly detect and respond to incidents as well as emerging vulnerabilities and threats. The funding will also support addressing audit recommendations to bring the Smithsonian Astrophysical Observatory's network and technology into our continuous monitoring program.

NONAPPROPRIATED RESOURCES — General trust funds support salaries and benefits costs of personnel and other related costs of the OCIO. Donor/sponsor-designated funds cover costs related to some 3D digitization projects and a portion of the biennial Digitization Fair that opened to the public for the first time in FY 2017.

ADMINISTRATION

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	182	36,234	208	46,197	5	8,762	0	329
FY 2019 ESTIMATE	182	36,255	214	43,456	15	10,865	2	665
FY 2020 REQUEST	191	37,324	218	43,058	17	13,924	1	585

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in vital arts and humanities research	1	174	1	174	0	0
Education						
Engage and inspire diverse audiences	1	248	1	248	0	0
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	3	494	3	494	0	0
Security						
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	177	35,339	186	36,408	9	1,069
Total	182	36,255	191	37,324	9	1,069

BACKGROUND AND CONTEXT

The Smithsonian Institution Administration program provides vision, leadership, policy, and oversight associated with managing and operating the Institution's museums and research centers. Administration includes executive leadership provided by the offices of the Secretary and Board of Regents; the Provost and Under Secretary for Museums, Education, and Research; and the Chief Operating Officer and Under Secretary for Finance and Administration. Administration also includes the central activities of human resources, diversity, financial and contract management, and legal services.

The FY 2020 budget request includes an increase of nine FTEs and \$1,285,000 for essential support and internal control requirements. The request

also includes a decrease of -\$216,000 for Workers Compensation, which is justified in the Fixed Costs section of this budget submission.

MEANS AND STRATEGY

The Smithsonian will continue to use best practices in management to enhance its mission for the “increase and diffusion of knowledge” and to achieve the Institution’s goals while translating James Smithson’s 19th century vision into a modern 21st century reality. The following strategies are cross-cutting and central to performing the Smithsonian’s mission and also help promote innovation, research, and discovery:

- Ensure the financial strength of the Smithsonian and provide the Institution with effective and efficient financial, contracting, and management support services, including reliable financial evaluation, auditing, and reporting.
- Provide oversight of the Smithsonian budget process as it is developed and executed to support the operating and facilities capital programs of the Institution, establish and enforce budgetary policies and procedures, and ensure that sufficient resources enable the Institution to achieve its goals.
- Conduct a comprehensive enterprise risk-management program to identify, monitor, and mitigate risk at all levels.
- Provide leadership and guidance for Institution-wide collections initiatives, policies, and programs to ensure the proper stewardship of the national collections.
- Support the Institution’s Board of Regents and its committees.
- Develop and implement necessary internal controls as recommended by the Board of Regents’ Governance Committee, which involves strengthening non-collections property management and meeting increased demands for acquisition of goods and services.
- Provide legal counsel to the Board of Regents and the Institution on issues such as museum administration, intellectual and real property, collections management, contracts, privacy and cyber security, finance, employment, ethics, conflicts of interest, international agreements, and requests for information.
- Manage human resources, foster diversity, hire a skilled workforce in a timely manner, and align human capital with the Institution’s goals and performance objectives. Conduct ongoing workforce and performance gap analyses, strengthen training and leadership policies and programs, develop succession planning, and evaluate and improve assessment tools for human resources performance.
- Provide leadership and oversight for all policies, programs, and activities of the Institution’s museums and research centers by attracting, recruiting, and retaining leaders with superior talent.

- Provide leadership, support, and resources to enable educators across the Smithsonian to share the depth and breadth of the Smithsonian's collections and research; connect with diverse audiences; invite dialogue and exchanges; and build on and contribute to best practices in teaching and learning.
- Increase the Latino Center's public and educational outreach in collaboration with Smithsonian units and affiliated institutions by developing exhibitions and programs on Latino history, art, culture, and scientific achievement; support Latino research, collections, exhibitions, publications, online content, and related projects; promote professional development opportunities for Latino youth leaders, emerging scholars, and museum professionals; continue innovation in new media, including the Latino Virtual Museum, social media, mobile applications, and educational games; and continue developing a Smithsonian Latino Gallery at the Arts and Industries Building.
- Support the Smithsonian's commitment to teaching Americans about their rich heritage by increasing the capacity and resources of the Asian Pacific American Center (APAC) to produce exhibitions and programs on Asian Pacific American history, art, and culture; continue innovative online initiatives that provide educational, programmatic, and outreach materials nationwide; and form national partnerships with museums and research centers to enrich the Smithsonian's collections, research, and activities relating to Asian Pacific Americans.
- Establish and maintain partnerships with the various Administration agencies and initiatives related to under-represented groups, such as Asian Americans and Pacific Islanders, Hispanic Serving Institutions, Historically Black Colleges and Universities, the American Association of University Women, and Tribal Colleges and Universities, and perform the necessary public outreach to enhance the Smithsonian presence in these communities.
- Coordinate efforts among the Secretary's executive diversity committee, Office of Human Resources, and Office of Equal Employment and Minority Affairs to ensure compliance with federal Equal Employment Opportunity Commission mandates, promote the Smithsonian's Equal Employment Opportunity (EEO) and workforce diversity policies (in accordance with Smithsonian Directive [SD] 214 Equal Opportunity Program), and advocate for the use of small, disadvantaged, woman- and veteran-owned businesses throughout Smithsonian procurement operations (in compliance with SD 216 Supplier Diversity Program).

EXPLANATION OF CHANGE

The budget request includes a decrease of -\$216,000 for Workers' Compensation costs that is justified in the Fixed Costs section of this budget submission. The request also includes a programmatic increase of 9 FTEs and \$1,285,000 as described below:

- **Latino Center (+\$200,000, +2 FTEs)** — This budget request supports the Smithsonian Latino Center (SLC), specifically at the National Museum of American History (NMAH). The SLC plans to launch a Smithsonian Latino Gallery (SLG) at NMAH beginning in calendar year 2021, as the first space at the Smithsonian dedicated to the Latino experience. The SLC has completed an interpretive master plan, preliminary schematic design, audience research, exhibition content outlines, and is nearing completion of visual identity and branding consultancy for the Latino Gallery. A private naming gift has been secured and the proposed gallery will operate for a minimum of 10 years at the NMAH. The requested positions will play foundational roles in exhibition development and production, and digital immersion, outreach, and correlative educational programs.
- **Contracting Support (+\$292,000, +2 FTEs)** — This funding request supports an Inspector General recommendation to increase strategic assistance to the Office of Contracting's customers and to provide the Office's customers with technical advisory assistance, especially on complex acquisitions. The request will also fund a contract to analyze the Smithsonian's procurement spending patterns to help make determinations for strategic sourcing of goods/commodities. The Institution will rely on this thorough analysis of procurement spending data to leverage purchasing and negotiate better supplier agreements, which will result in the best value for goods and services required by units.
- **Office of the General Counsel Support (+\$200,000, +1 FTE)** — The Office of the General Counsel requests an additional FTE to address the Smithsonian's current need for advice, representation, and education to support internal controls, and to manage the increasing requirements in the areas of cybersecurity, privacy, risk management, ethics, international activities, complex business transactions, and litigation.
- **Diversity Support (+\$140,000, +1 FTE)** — Diversity is one of the expressed values in the Smithsonian Strategic Plan. The Office of Equal Employment and Minority Affairs' (OEEMA) Supplier Diversity Program (SDP) advocates for the use of small disadvantaged businesses in the Smithsonian's procurement and contracting operations. The Institution is requesting permanent funding for an SDP specialist. This position will assist with administrative duties and in advocating for unit managers to achieve their SDP goals.

- **Human Resources Support (+\$453,000, +3 FTEs)** — This request supports Human Resources (HR) staff required to facilitate internal and external strategic change; adequately address hiring timeliness goals; provide quality, timely advice and service to Smithsonian units; minimize risks; and improve the response time for answering requests for guidance or information. This request supports an IT specialist to prepare analytical data and reports for senior management and serve as a liaison to the Office of the Chief Information Officer to support the management of HR systems. The request also provides a lead HR recruitment specialist to provide strategic planning to senior leadership and minimize hiring delays. In addition, this request provides an HR specialist to implement and administer the Workplace Violence Prevention Program and facilitate various Smithsonian-wide initiatives aimed at preventing violence through training.

NONAPPROPRIATED RESOURCES — General trust funds support salaries and benefits of personnel and other related costs. General trust funds are also used to support administrative activities, information dissemination, outreach, publications, and fund raising. Donor/sponsor-designated funds support costs related to programs and projects such as scientific research, family days, and leadership development.

OFFICE OF THE INSPECTOR GENERAL

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	24	3,538	0	0	0	0	0	0
FY 2019 ESTIMATE	24	3,538	0	0	0	0	0	0
FY 2020 REQUEST	27	4,077	0	0	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	24	3,538	27	4,077	3	539
Total	24	3,538	27	4,077	3	539

BACKGROUND AND CONTEXT

The Inspector General Act of 1978, as amended, requires the Office of the Inspector General (OIG) to conduct and supervise audits and investigations relating to programs and operations of the Smithsonian Institution (SI) that are, in the judgment of the Inspector General, necessary or desirable.

The FY 2020 budget request includes an increase of 3 FTEs and \$539,000 for staff to implement internal controls to prevent waste, fraud, and abuse.

MEANS AND STRATEGY

The resources requested will be used to fund salaries, benefits, and support costs for staff engaged in audits, investigations, and other activities necessary to accomplish the OIG's mission.

The Office of Audits conducts audits of the Smithsonian's existing and proposed programs and operations to help improve their efficiency and effectiveness. To align its oversight responsibility with available resources, the office develops an annual audit plan by conducting a comprehensive risk assessment of the Smithsonian's programs and operations and seeking input from its stakeholders at the Smithsonian and in the Congress. The audit plan also includes mandatory audits, such as the annual financial statements audits that the OIG oversees.

The Office of Investigations pursues allegations of waste, fraud, abuse, gross mismanagement, employee and contractor misconduct, and criminal violations of law that have an impact on the Smithsonian's programs and operations. It refers matters to federal, state, and local prosecutors for action whenever the OIG has reasonable grounds to believe there has been a violation of criminal law. The Office of Investigations also presents any evidence of administrative misconduct to Smithsonian senior management for possible disciplinary action.

EXPLANATION OF CHANGE

- This budget request (+\$539,000 and +3 FTES) supports the Office of Inspector General (OIG) requirements. During the past 20 years, the OIG share of funding has decreased in proportion to the growth of the overall Smithsonian Institution budget. The result of this funding erosion is a long-standing backlog in both audit and investigative work. The increased resources will address the additional risks the Smithsonian faces as it undergoes significant expansion with additional museums, fundraising activities, greater reliance on contractors, and an increasing dependence on information technology.
- The requested resources will support the Smithsonian goal of providing a nimble, cost-effective, and responsive administrative infrastructure. The OIG will be able to investigate allegations of wrongdoing in a timely manner, review and make recommendations for improvements to the Smithsonian's programs and operations, and identify funds that could be put to better use.

NONAPPROPRIATED RESOURCES — The OIG does not receive any non-appropriated funds.

FACILITIES MAINTENANCE

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	401	77,045	0	0	0	0	0	0
FY 2019 ESTIMATE	408	79,545	0	0	0	0	0	0
FY 2020 REQUEST	417	84,545	0	0	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Preserve Our Natural and Cultural Heritage						
Facilities and Safety						
Deliver an aggressive and professional maintenance program	402	74,768	411	79,768	9	5,000
Security						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	6	4,777	6	4,777	0	0
Total	408	79,545	417	84,545	9	5,000

BACKGROUND AND CONTEXT

The Facilities Maintenance program is responsible for the maintenance and repair of the infrastructure of more than 13 million square feet of owned and leased buildings and structures, and 43,000 acres. This includes 19 museums, nine research centers, three cultural centers, and the National Zoological Park. The buildings and structures range from the well-known museums to supporting structures such as guard booths, animal shelters, and hay barns. Facilities Maintenance focuses on facility preservation activities and encompasses the upkeep of property and equipment. This work is necessary to realize the originally anticipated useful life of facility assets.

The Facilities Maintenance program maintains systems related to electronic security, screening equipment, radio systems, and perimeter barrier equipment. The program also maintains all building systems (including HVAC, elevators/escalators, electrical, plumbing, roofing, interiors, exteriors, and the building structure), as well as the grounds maintenance associated with upkeep of Smithsonian sites. The mission of Smithsonian Facilities (SF) is to provide world-class services and stewardship by building, operating, maintaining, and ensuring a safe, secure, and healthy environment to enhance the Smithsonian

experience for all visitors. The Smithsonian attracts about 30 million visits annually.

As new and renovated museum and research center spaces open, maintenance requirements rise due to increased square footage, technological advances, and the growing number of infrastructure-supporting systems. For example, with the opening of the National Museum of African American History and Culture and the full renovation of the Renwick Gallery of Art, the total number of assets requiring periodic maintenance increased to more than 22,000. These new assets added new functionality, new technology, and a new, more complex level of maintenance requirements.

SF continues to take a number of initiatives to increase maintenance efficiencies, including auditing services. SF benchmarks its maintenance staffing levels with other museums and professional organizations to ensure that resources are being effectively deployed. These include meeting standards set by the Leadership in Educational Facilities (referred to as APPA), the International Association of Museum Facility Administrators, and the International Facility Management Association. The Smithsonian is a past recipient of the prestigious Award of Excellence from the APPA in recognition of the Institution's excellence in facilities management and its efforts to establish measurable maintenance performance standards and staffing levels. The well-documented goal is to maintain Smithsonian facilities at APPA's Level 1 standard for building maintenance, which is referred to as "Showpiece Facility."

Accordingly, the National Research Council (NRC) recommends an annual maintenance budget in the range of 2 to 4 percent of a physical plant's aggregate current replacement value (CRV) to avoid adding to a deferred maintenance backlog. The CRV for the Smithsonian is currently at \$8.45 billion, including the National Museum of African American History and Culture. With this requested increase, the Institution's maintenance budget would be at \$84.5 million, which is still below the NRC's recommended level.

The FY 2020 budget request includes increases of 9 FTEs and \$5,000,000 to help the maintenance program maintain APPA Level 3 services.

MEANS AND STRATEGY

To support the Institution's strategic goal to Preserve Our Natural and Cultural Heritage, SF continues an aggressive, long-range facilities maintenance and repair program, using the reliability-centered maintenance (RCM) approach, which is a widely accepted industry philosophy that incorporates a cost-effective mix of predictive, proactive, preventive, and reactive maintenance practices. With existing resources, the Smithsonian will operate at the lower end of APPA's maintenance Level 3 "Managed Care," which provides a minimal level of preventive maintenance and building system reliability to ensure that proper

environmental conditions are maintained for collections and public expectations are met.

The Smithsonian's goal is to reduce its maintenance backlog, currently estimated at \$937 million, through the coordinated efforts of its maintenance and Facilities Capital programs. Proper maintenance funding prevents the accelerated degradation of building systems and components that would increase the number and cost of major repairs. Through proper preventive maintenance and by addressing deficiencies in a timely manner, the Institution can realize the originally anticipated useful life of facilities systems and avoid the accelerated degradation of its infrastructure, and the associated costs, mentioned above.

Smithsonian Facilities will continue to identify efficiencies in managing its existing resources to improve its current level of maintenance service in the most cost-effective manner possible. In addition, SF will continue to improve electronic security systems and physical security measures which protect the Institution's facilities, collections, staff, visitors, and volunteers.

EXPLANATION OF CHANGE

The FY 2020 budget request includes programmatic increases of 9 FTEs and \$5,000,000 for the facilities maintenance program. Details concerning this request are as follows:

- **Facilities Maintenance (+\$5,000,000, +9 FTEs)** — The Smithsonian requests \$5,000,000 and 9 FTEs to enable its maintenance program to continue the work of stabilizing and standardizing the overall condition of the Smithsonian's facilities. The long-term, well-documented goal is to maintain Institution facilities at the Leadership in Educational Facilities, or APPA, top rating of Level 1. Progress toward that goal has been made in recent years. With the resources requested in the FY 2020 budget, the Smithsonian will operate at a solid APPA maintenance rating of Level 3 (out of 5), "Managed Care."

The Smithsonian's maintenance requirements have also been validated through the Facility Condition Assessment process and Reliability Centered Maintenance (RCM) analysis. This increase provides some additional preventive maintenance and building system reliability to ensure that proper environmental conditions are maintained for the national collections and that public expectations are met. Additionally, this increase will enable the Institution to begin closing the gap on deferred maintenance and repairs on life-safety systems; elevators and escalators; environmental control and heating, ventilation, and air-conditioning systems; plumbing infrastructure; roofing systems; and miles of fencing. It will enable the Institution to address lead abatement throughout the Smithsonian's aging facilities.

The Smithsonian is challenged to properly care for the nation's treasures. The Smithsonian Institution Building (The Castle), National Museum of Natural History, and National Museum of American History have all suffered numerous water leaks in the recent past due to failing plumbing infrastructure and the lack of resources to maintain or replace corroding pipes. With the funds requested, the Institution can prevent these catastrophic pipe failures and resulting water damage to collections and facilities.

Through diligent maintenance of the Institution's facilities and systems, the Smithsonian can prolong the operational life of the equipment while maintaining reliable output to protect the national collections and the federal investment already made to support our infrastructure. Additionally, the proper maintenance of the equipment reduces the potential for unplanned equipment shutdowns which negatively affect the Institution's visitors, staff, and collections.

FACILITIES OPERATIONS, SECURITY, AND SUPPORT

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2018 ENACTED	1,361	226,581	20	2,736	2	411	0	29
FY 2019 ESTIMATE	1,361	230,248	20	2,800	4	425	0	0
FY 2020 REQUEST	1,361	236,673	20	2,830	3	355	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Understand and Impact 21st Century Audiences						
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	4	474	4	474	0	0
Preserve Our Natural and Cultural Heritage						
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	635	151,178	635	152,103	0	925
<i>Security</i>						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	722	78,596	722	84,096	0	5,500
Total	1,361	230,248	1,361	236,673	0	6,425

BACKGROUND AND CONTEXT

The mission of Smithsonian Facilities (SF) is to provide world-class services and stewardship by building, operating, maintaining, and ensuring a safe, secure, and healthy environment to enhance the Smithsonian experience for all visitors. The Smithsonian receives more than 30 million visits annually.

The Facilities Operations, Security, and Support (OSS) program operates, secures, and supports the Smithsonian's physical infrastructure in partnership with Smithsonian program staff. It provides operational security and support services for approximately 13 million square feet of owned and leased facilities, including 19 museums, nine research centers, three cultural centers, and the National Zoological Park.

Resources within OSS support facilities operations, including activities such as custodial work; fire protection; building system operations; grounds care and landscaping; snow removal; pest control; refuse collection and disposal;

motor vehicle fleet operations and maintenance; security services; and safety, environmental, and health services. Resources also support facilities planning, architectural and engineering design, as well as postage, utilities, and central rent costs.

The FY 2020 budget request includes an increase of \$5,500,000 for security requirements, and a net increase of \$925,000 for utilities, postage, and rent, which is justified in the Fixed Costs section of this budget submission.

MEANS AND STRATEGY

SF will pursue the Institution's strategic goal to Understand and Impact 21st Century Audiences by continuing to develop exhibits and public programs for horticulture, architectural history, and historic preservation.

To support the Institution's strategic goal to Preserve Our Natural and Cultural Heritage, OSS base resources will focus on meeting the growing operational requirements of the Institution's facilities. SF will continue to effectively and efficiently use resources to operate and secure facilities and grounds, and to provide safe, attractive, and appealing spaces to meet program needs and public expectations. In addition, SF will continue benchmarking the Institution's custodial staffing and service levels with other museums and professional organizations, including Leadership in Educational Facilities (referred to as APPA). SF is committed to measuring performance and staffing levels to ensure that the highest affordable levels of cleanliness, as well as efficient operations, are maintained.

The Institution is committed to achieving APPA's appearance Level 2 (out of 5) cleaning standard, referred to as "Ordinary Tidiness." This level of appearance will provide an acceptable level of cleanliness that meets public expectations. With current resources, on average, SF achieves appearance Level 3, "Casual Inattention." This level of appearance ensures a generally clean and odorless environment.

In addition to providing the highest level of facilities care, the Smithsonian is equally committed to maintaining the highest levels of security. In support of that goal, the Institution is continuing a strategic security staffing analysis to determine exactly how many security and law-enforcement staff are needed at each of the Smithsonian's major facilities. The ongoing analysis includes pay levels, training/skill requirements, armed versus unarmed coverage, and the appropriate mix of Smithsonian officers versus contract security guards.

SF continues its commitment to ensure that Smithsonian employees have a safe and healthy workplace by creating a culture that embraces and promotes zero injuries; provides professional services promoting a culture of health and

wellness; and ensures that all Smithsonian facilities comply with local building codes, environmental regulations, and management best practices.

EXPLANATION OF CHANGE

The FY 2020 budget request includes programmatic increases of \$5,500,000. The request will support the Institution's security requirements, as detailed below:

- **Security (+\$5,500,000)** — As the physical footprint of the Smithsonian has increased and facilities are revitalized, the Institution's security and law-enforcement needs have also grown. Additionally, recent increases in violent shooter attacks in the United States have highlighted the need to improve the Smithsonian's ability to respond quickly to these types of incidents. The Smithsonian conducted a phased security staffing analysis for each of its major facilities to evaluate the effectiveness of existing security resources versus the current requirements. The facility analyses confirmed that the Smithsonian needs to fill its currently vacant security positions and add contract staff to provide a higher level of security around building perimeters, including visitor screening, as well as in interior public spaces such as galleries.

Consequently, the Smithsonian requests \$5,500,000 and 0 FTEs for existing unfunded security positions and additional contract security guards to continue with full-time magnetometer screening and bag searches at public entrances, conduct exterior patrols, provide additional security in galleries and other public spaces, as well as begin security coverage at the Arts and Industries Building for upcoming public use. These actions will address the essential needs at the Smithsonian's highest risk facilities, which are the National Museum of African American History and Culture, the National Museum of American History, the National Museum of Natural History, the National Air and Space Museum, and the National Museum of the American Indian. Taken together, these museums accounted for more than 18.7 million visitors in FY 2018.

NONAPPROPRIATED RESOURCES — General trust funds support salaries and benefits, and other related costs. Donor/sponsor-designated funds cover costs related to Smithsonian programs, such as horticulture operations, architectural history and historic preservation projects.

FACILITIES CAPITAL

FY 2018 Enacted	\$311,903,000
FY 2019 Enacted	\$303,503,000
FY 2020 Request	\$219,000,000

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		FY 2020	
	FTE	\$000	FTE	\$000	FTE	\$000
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	48	296,603	48	295,003	48	210,500
<i>Security</i>						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors, and volunteers	0	15,300	0	8,500	0	8,500
Total	48	311,903	48	303,503	48	219,000

BACKGROUND AND CONTEXT

The Facilities Capital Program underpins the Smithsonian’s mission and represents an investment in the long-term interest of the nation. It is intended to help the Smithsonian provide modern facilities, often within our country’s national historic and culturally iconic buildings, which satisfy public programming needs, facilitate world-renowned research efforts, and house our priceless national collections.

In the Facilities Capital Program, revitalization involves making major repairs or replacing declining or failed infrastructure to address the problems of advanced deterioration. Once completed, these projects will enable the Smithsonian to avoid the failures in building systems that can create hazardous conditions for visitors and staff, harm animals, damage collections, and cause the loss of precious scientific data.

The Institution uses the National Research Council’s (NRC) Facility Condition Assessments to calculate a Facilities Condition Index (FCI) rating. The FCI is the industry standard for the analysis of the condition of a facility or group of facilities that may vary in terms of age, design, construction methods, and materials. The FCI is

calculated by dividing the sum of the deferred maintenance (based on the assessed condition ratings) of eight building systems (roofs, electrical, plumbing, HVAC, conveyance — i.e., elevators and escalators — interior, exterior, and structure) by the Current Replacement Value (CRV) of the facilities. FCI values of less than 90 percent are considered “poor.” The most recent overall FCI rating for Smithsonian facilities remained at 89.0 percent, the same rating as in FY 2016. This percentage is based on an estimated overall CRV of \$8.45 billion and an estimated \$937 million value of the Smithsonian’s backlog of deferred maintenance and repair.

The individual FCI of eight Smithsonian facilities has declined, with one facility falling from the good to fair category and one facility improving from the poor to fair category. The NRC’s recommended goal is a rating of 95 percent or greater. Accordingly, to reverse a continuing downward trend in the FCI of many essential facilities, reduce the growing backlog of deferred maintenance and capital repairs, and achieve an FCI equal to or greater than 95 percent, so that our national treasures and cultural properties are preserved and enhanced for generations to come, the Smithsonian requests \$219 million for its Facilities Capital Program in FY 2020.

Funding for facilities’ routine maintenance and minor repairs is included in the Institution’s Salaries and Expenses request. These resources are used to realize the intended design life and full economic value of Smithsonian facilities and to protect the Institution’s investment in revitalization.

EXPLANATION OF CHANGE

The Institution requests \$219,000,000 and 48 FTEs for the Facilities Capital Program in FY 2020. The requested funds will enable the Institution to continue the major renovation project at the National Air and Space Museum (NASM). In addition, major revitalization efforts will continue at the National Air and Space Museum’s Steven F. Udvar-Hazy Center in Chantilly, Virginia, the National Zoological Park, and other priority areas, including projects for the Hirshhorn Museum and Sculpture Garden (HMSG) and facilities at the Suitland Collections Center. This request also funds stabilization of failing infrastructure and façade components of the Smithsonian Castle, as well as other priorities such as security and mechanical upgrades at buildings in Washington, DC; infrastructure upgrades at buildings the Smithsonian Tropical Research Institute in Panama; and mitigation of safety and security hazards throughout the Institution.

The following chart summarizes the Institution’s request for the highest priority FY 2020 Facilities Capital projects.

SMITHSONIAN INSTITUTION
Federal Facilities Capital Program Summary
FYs 2018 – 2020

CATEGORY	Federal Received	Trust* Estimate	Federal Estimate	Trust* Estimate	Congress Request	Trust* Estimate
<i>\$Millions</i>						
REVITALIZATION						
Major Projects						
Cooper Hewitt, Smithsonian Design Museum	4.5		2.8			
Donald W. Reynolds Center			1.0		3.5	1.7
Freer Gallery of Art	0.5				2.0	
Hirshhorn Museum and Sculpture Garden	2.0			0.7	8.5	0.8
National Air and Space Museum (NASM)	198.0		210.0	50.0	100.0	53.3
NASM Steven F. Udvar-Hazy Center			10.0		18.4	
National Museum of American History	2.0		4.0		3.0	
National Museum of the American Indian	3.6		4.0			
National Museum of Natural History	18.0		3.5		1.5	
National Zoological Park	20.1		18.5	5.0	25.0	7.8
Quadrangle					2.0	
Smithsonian Astrophysical Observatory	2.2		0.9		0.8	
Smithsonian Environmental Research Center	2.0		2.0	2.0		
Smithsonian Institution Building (Castle)	2.6		1.5	5.0	1.0	5.0
Smithsonian Tropical Research Institute	1.9		1.5		1.7	1.0
Collections Space & Support Program (Multiple Locations)	8.2		7.0	0.5	5.5	0.8
Fire-Alarm Panel Replacement	2.0		4.0		2.0	
Multiple Site Projects and General Capital Support	14.0		15.8		14.5	
Facilities Planning and Design	20.3		17.0		29.6	
SUBTOTAL	301.9	0.0	303.5	63.2	219.0	70.4
CONSTRUCTION						
NASM Udvar-Hazy Collections Storage Module	10.0					
SUBTOTAL	10.0	0.0	0.0	0.0	0.0	0.0
TOTAL PROGRAM	311.9	0.0	303.5	63.2	219.0	70.4

SUMMARY TABLES

REVITALIZATION

Investment in revitalization projects provides for the replacement of failing or failed major building systems and equipment, and for major renovation projects to sustain existing buildings and sites. The Revitalization Program addresses critical deficiencies in the exterior envelope, heating, ventilation, and air-conditioning (HVAC), electrical, and other utility systems at the Smithsonian's older buildings. Projects also ensure compliance with life-safety regulations, the Americans with Disabilities Act (ADA) and other code-compliance requirements, restoration, preservation and repair of historic features, and modernization of the buildings to support current program needs and sustain the viability of the Institution's physical plant. Items listed on the Multiple Locations line are projects that cover multiple facilities or where the total cost of the museum and/or research center projects is less than \$1.0 million. These projects usually involve capital repair or replacement of individual systems or components.

Facility	Project	\$000
National Air and Space Museum (NASM)	Revitalize Building Envelope and Infrastructure	100,000
NASM Udvar-Hazy Center (UHC)	Repair Leaks of Building Envelope and Roof	18,400
National Zoological Park (NZN)	Renew Bird House and Great Flight Cage Upgrade Life-Safety and Infrastructure	20,000 5,000
National Museum of Natural History (NMNH)	Upgrade Fire-Alarm Panel and Mass-Notification Systems	1,500
National Museum of American History (NMAH)	Improve Kitchen Grease Vent System	3,000
Hirshhorn Museum and Sculpture Garden (HMSG)	Revitalization of Building Envelope and Building Systems	2,000
	Vertical Transportation Revitalization	6,500
Quadrangle	Mass Notification with Extension	2,000
Donald W. Reynolds Center (DWRC)	Replace Gallery Lighting	3,500
Smithsonian Institution Building (Castle)	Façade Repair and Stabilization Implementation	1,000

Facility	Project	\$000
Smithsonian Tropical Research Institute (STRI)	Replace and Improve Facilities at Galeta (Phase 1)	1,700
Smithsonian Astrophysical Observatory (SAO)	Repair Roads at Fred L. Whipple Observatory (SAO-AZ)	800
Suitland Collections Center (multiple facilities)	Replace Air-Handling Units (AHUs)	3,900
	Replace Emergency Generator and Chillers	1,600
Freer Gallery of Art	Upgrade Leak-Detection System	2,000
Multiple Facilities	Fire-Alarm Panel Replacements	2,000
Multiple Locations	Building Projects less than \$1,000,000 and Miscellaneous Repairs	7,500
	Construction Supervision Administration	<u>7,000</u>
TOTAL, REVITALIZATION PROJECTS		\$189,400
FACILITIES PLANNING AND DESIGN		<u>\$29,600</u>
FY 2020 TOTAL REQUEST		\$219,000

REVITALIZATION PROJECTS

PROJECT TITLE: Revitalize Building Envelope and Infrastructure
INSTALLATION: National Air and Space Museum (NASM) — National Mall Building
LOCATION: Washington, DC

<u>FY 2020 COST ESTIMATE (Thousands of Dollars):</u>	\$100,000*
<u>PRIOR-YEAR FUNDING</u>	\$408,000*
<u>FUTURE-YEAR FUNDING</u>	<u>\$ 90,000*</u>
Total	\$598,000*

* Does not include funding in Facilities Planning and Design

BUILDING BACKGROUND:

NASM was built in 1976 to commemorate the national development of aviation and space flight. The 747,877-gross-square-foot building (including approximately 161,145 square feet of exhibit galleries) preserves and displays artifacts, aeronautical and space flight equipment, significant historical data, and related technologies. The exhibit galleries hold the largest collection of historic air and spacecraft in the world and, in recent years, the Museum has received an average of more than seven million visitors annually.

PROJECT JUSTIFICATION:

The exterior Tennessee Pink Marble façade of the NASM building is a feature of the original construction and forms the primary exterior weather seal for the envelope on all surfaces other than at the roofs, terraces, skylights, and window walls. The panels are porous, show signs of aging and, in some cases, damage in the form of visible warping and cracks. The current marble primary weather seal does not provide a continuous vapor barrier across the entire façade and the insulation is not consistent with current sustainable best practices and energy conservation. There is no secondary weather seal on the marble walls. This has created additional condensation and energy conservation problems.

NASM’s mechanical systems are original to the 1976 building and designed to support only two million visitors annually. Within six months of opening, five million visitors were recorded. Today, it remains the most visited museum in the United States (and second in the world), with between seven and eight million visitors annually. As a result, decades of strain on these systems have led to frequent breakdowns and failures, increasing costs to repair. They have exceeded their useful lifespans. The mechanical systems are further burdened by the deteriorated condition of the exterior façade, which allows moisture into the building.

PROJECT DESCRIPTION:

The multi-year, multi-phase building systems and envelope renovation project will replace the building’s marble façade, improve blast and earthquake resistance, upgrade the energy efficiency of the exterior envelope, replace the mechanical systems, and provide more secure access and egress. A primary goal for the planned HVAC replacement portion of the project is to provide the collections area and all occupied spaces with appropriate

temperature and humidity controls. The Smithsonian requests \$100.0 million in FY 2020 to fund construction activities, award contract(s) for artifact protection, and move staff to swing space.

PROGRESS TO DATE:

Design work began in June of 2014 with the award of the concept/schematic design contract. The design contract was awarded in March of 2016. Design reached 100 percent completion in August of 2017 and final construction documents were submitted in January of 2018. The Construction Manager as Constructor (CMc) pre-construction services began in January of 2017 with award of contract. Formal value engineering exercises with the CMc were conducted in July of 2017 (at 65 percent design) and November of 2017 (at 100 percent design). With the release of the final construction documents, the CMc submitted a Guaranteed Maximum Price (GMP) in May of 2018, which was followed by a series of value engineering proposals, scope clarifications, and a revised GMP in August of 2018. The construction contract was awarded at the GMP on August 20, 2018 and the notice-to-proceed (NTP) was issued on September 17, 2018. On-site mobilization activities started in the first quarter of FY 2019. To protect against the possibility that the exterior stone panels may fail, the Smithsonian erected a temporary covered walkway around vulnerable portions of the building in January of 2015. The covered walkway will remain in place until the façade replacement work is complete.

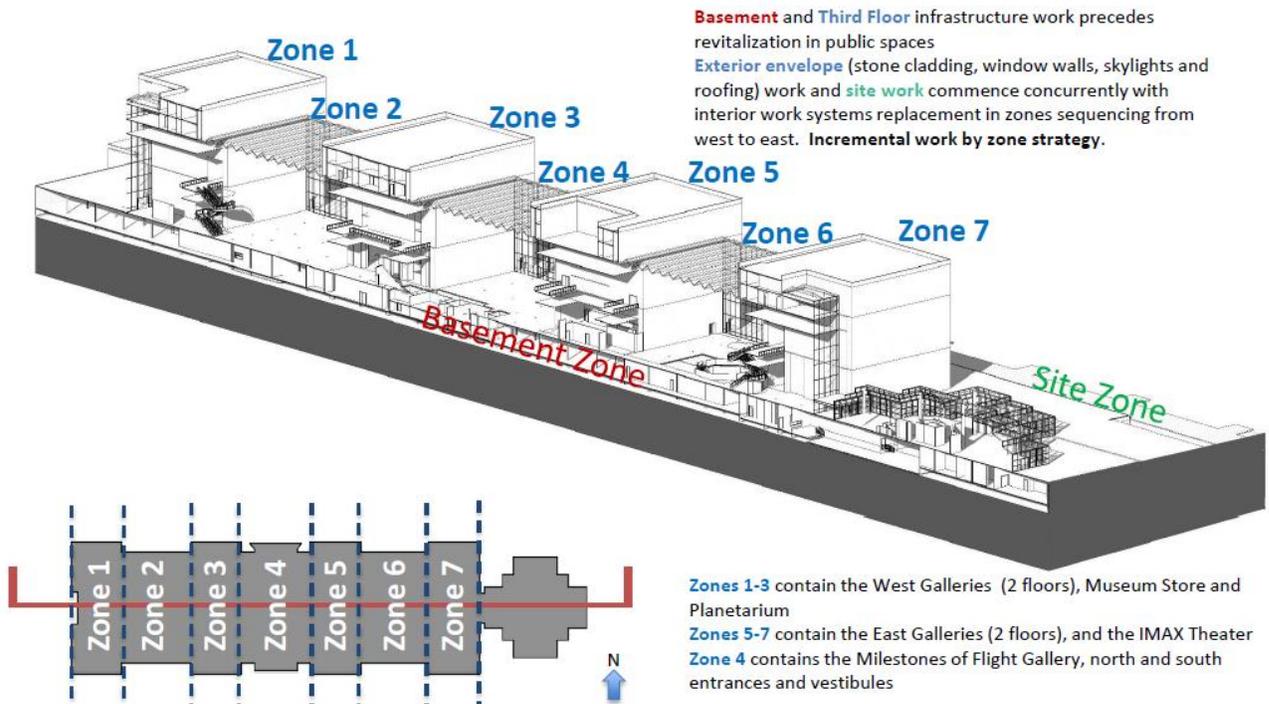
IMPACT OF DELAY:

If funding is delayed, the pace of revitalization work begun in FY 2019 will be slowed. NASM's stone façade and building systems will continue to deteriorate and the environmental conditions needed to safeguard the Museum's collections and the visiting public will not be maintained. Existing building systems in future work zones must remain operational as the revitalization work progresses until their ultimate replacement is accomplished. Building system breakdowns will become more frequent and unpredictable, likely resulting in emergency building closures.

The following diagram provides a high-level view of the incremental sequence approach the Smithsonian will undertake throughout the renovation. The Smithsonian intends to keep approximately half of the Museum open during the project, while working on the exterior and interior projects in parallel by zone, as outlined below.

National Air and Space Museum (NASM) Major Systems / Exterior Envelope Revitalization Project

BUILDING ZONE AND INCREMENTAL WORK SEQUENCE APPROACH



PROJECT TITLE: Repair Leaks of Building Envelope and Roof
INSTALLATION: National Air and Space Museum (NASM) — Udvar-Hazy Center
LOCATION: Chantilly, Virginia

<u>FY 2020 COST ESTIMATE (Thousands of Dollars):</u>	\$18,400*
<u>PRIOR-YEAR FUNDING:</u>	\$10,000*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$0*</u>
Total	\$28,400*

* Does not include funding in Facilities Planning and Design

BUILDING BACKGROUND:

The Udvar-Hazy Center in Chantilly, Virginia is the companion facility to the National Air and Space Museum on the National Mall in Washington, DC. Opened in 2003, the 760,000-square-foot building consists of two large hangers — the Boeing Aviation Hangar and the James S. McDonnell Space Hangar. The facility displays thousands of aviation and space artifacts, including a Lockheed SR-71 Blackbird and the space shuttle *Discovery*, and hosts more than one million visitors a year.

PROJECT JUSTIFICATION:

The Udvar-Hazy Center has experienced water and air infiltration issues since its opening in 2003. Attempts to repair these leaks have not addressed the underlying cause.

PROJECT DESCRIPTION:

The multi-year project will remove and replace select areas of the existing roof experiencing leaks, and overlay the roof with an applied membrane; replace the existing Kalwall glazing; and repair select areas of the exterior metal wall system, terrace, and foundation walls experiencing air and water infiltration. The Smithsonian requests \$18.4 million in FY 2020 to fund construction (leak repair) activities.

PROGRESS TO DATE:

A planning study was completed in July of 2015 and design work began in March of 2016 with award of design contract. A formal value engineering exercise completed in October of 2016 recommended several project scope approaches and associated budget costs. Design was completed in September of 2018. Solicitation for construction is scheduled for the second quarter of FY 2019 with award by the third quarter of FY 2019.

IMPACT OF DELAY:

If funding is delayed, the building roof and envelope will continue to leak, necessitating continued temporary repairs and severely impairing the Institution's ability to maintain the safety and security of the Museum's collections and the visiting public.

PROJECT TITLE: Renew Bird House and Great Flight Cage
INSTALLATION: National Zoological Park (NZN)
LOCATION: Washington, DC

<u>FY 2020 COST ESTIMATE (Thousands of Dollars):</u>	\$20,000*
<u>PRIOR-YEAR FUNDING:</u>	\$24,000*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$0*</u>
Total	\$44,000*

* Does not include funding in Facilities Planning and Design

BUILDING BACKGROUND:

The NZP's Bird House was designed by architect Albert Harris and opened in 1928, with an addition completed in 1938. In 1965, Daniel, Mann, Johnson & Mendenhall renovated and modernized the Bird House by removing the roof, ornate entries and elaborate brick decorative details and replacing them with simple concrete and glass. The flight cage addition was connected to the building with a sleek, modern concrete bridge, in sharp contrast to the Harris design. In the 1970s and beyond, the bird plateau site received multiple exterior animal exhibits, holding facilities, ponds, boardwalks, and asphalt sidewalks.

PROJECT JUSTIFICATION:

With the exception of relatively recent upgrades to fire-suppression systems, the infrastructure is well beyond its useful lifespan and most of the failed and failing equipment and systems date back to the 1960s and 1970s. The 2016 Facilities Condition Index (FCI) for the Bird House is 66.1 percent (FCIs below 90 percent are considered poor), one of the worst in the Smithsonian facility portfolio. This project renews the Bird House and Great Flight Cage, with a new *Marvelous Migrations* exhibit that emphasizes the global importance of migration to species survival by using innovative, conservation-based education. Using \$10 million in leveraged donor funds, along with federal appropriations, and following the approved master plan, facility improvements will include new site utilities, as well as total replacement of failed chillers, beyond-lifespan HVAC equipment, obsolete storm and wastewater management systems, and upgraded animal/human life-safety, life-support, electrical, plumbing, security and data systems. Additionally, the Bird House will get upgrades to its primary and secondary bird containment systems, following recent increases in animal escapes.

PROJECT DESCRIPTION:

The project will renew the deteriorating and failing building systems, equipment, and bird-holding and habitat spaces of the Bird House with a complete, phased building renovation that includes total demolition of the non-historic fabric, a new roof, new life-support systems for the living collections, new HVAC, plumbing, electrical, lighting, life-safety and animal life-support systems, and significant improvements to the Great Flight Cage. During the first phase, interim outdoor and indoor bird-holding swing space is being erected, and highly pathogenic avian influenza (HPAI)-resistant netting is being

provided over the Flamingo Exhibit Yard. Additionally, this project will renew the congressionally established Smithsonian Migratory Bird Center to educate the public and encourage visitors to help save wildlife and habitats worldwide. The Smithsonian requests \$20.0 million in FY 2020 to continue this project.

PROGRESS TO DATE:

With the \$4.0 million appropriated in FY 2017, construction of the bird collections swing space was completed and the animals relocated. The Bird House closed to the public in January of 2017. Construction proposals for the revitalization of the Bird House and Great Flight Cage Aviary project were received in July of 2018, with a best-value construction bid awarded in the amount of \$37.7 million in September of 2018.

IMPACT OF DELAY:

Delaying this project will result in continued increased costs of maintaining and operating the failed and failing systems, excessive energy consumption and costs for water and power, and increased risk to the living collections now housed in temporary swing space, which cannot be safely maintained there indefinitely. Failure to revitalize this facility will require that the building remain closed indefinitely, preventing public access to our nation's living collection of significant birds and hindering the important work of the Smithsonian Migratory Bird Center and the National Zoo's mission of saving endangered species.

PROJECT TITLE: Upgrade Life-Safety System Infrastructure
INSTALLATION: National Zoological Park (NZIP), Rock Creek Park and Front Royal
LOCATION: Washington, DC and Front Royal, Virginia

<u>FY 2020 COST ESTIMATE (Thousands of Dollars):</u>	\$5,000*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$55,100*</u>
Total	\$60,100*

* Does not include funding in Facilities Planning and Design

BUILDING BACKGROUND:

Multiple buildings, at both the Rock Creek and Front Royal locations, have major capital systems renewal needs due to failed and failing infrastructure. The facilities also do not meet current building and life-safety codes. To date, all buildings and animal holding areas have received fire-sprinkler suppression systems, but many buildings still require upgrades to fire-alarm detection systems that will soon be phased out by the systems' manufacturers and parts suppliers. In addition, smoke control and smoke-evacuation systems need to be provided in the Panda House, Bird House, Think Tank, Small Mammal House and Lion/Tiger House. Additionally, infrastructure projects not already completed per the master plan include: stormwater management; upgrading living collections infrastructure at animal habitats and yards; continuing the refurbishment of the NZIP's elevators; upgrades to building HVAC and site utilities such as sewer, power, data and water systems throughout both campuses; site security and safety systems replacement; failed and failing faux rock replacement throughout the Rock Creek campus; and perimeter gates, fencing, animal containment, and utility infrastructure repairs and upgrades at Front Royal.

PROJECT JUSTIFICATION:

This project will provide continued funding for major capital renewal and replacement of failed and/or failing life-safety and infrastructure systems throughout both the Rock Creek and Front Royal campuses.

PROJECT DESCRIPTION:

The Smithsonian requests \$5.0 million in FY 2020 to continue the NZIP's major capital renewal program, per the adopted comprehensive facilities master plan, and to replace failed and failing life-safety and infrastructure systems at both the Rock Creek and Front Royal campuses.

PROGRESS TO DATE:

At Rock Creek, the failed steam lines have been replaced from under the boiler plant to the Think Tank and from the Think Tank to the Police Station, Mane Café and Amazonia building. A new electrical substation was installed across from the bus lot on North Road, and another electrical substation replacement is complete behind the Police Station, serving the Lower Zoo. Phase One of the Police Station Renewal is complete, along with the swing space for the NZIP Police and Health Unit. The North Road retaining wall and structural/life-safety systems were provided at the adjacent General Services Building. Visitor safety and animal containment improvement projects have been

completed at the Lion/Tiger and Great Apes Houses and at the Zebra/Cheetah exhibit areas. The smoke-evacuation and fire-safety system was completed at the Great Ape House. Visitor safety improvements at the Giant Panda House are under construction, and the designs for the Giant Panda smoke-evacuation system and mechanical systems improvements are complete. Multiple projects are in the planning and design stages for the current Five-Year Capital Plan, and designs for the FY 2020 appropriation cycle will be completed in FY 2019. Projects include improved site utilities and living collections infrastructure at both campuses, and Association of Zoos and Aquariums (AZA) required barn and animal holding, fire protection and containment improvements at Front Royal. Other planned projects include security improvements, structural and ADA improvements at the General Services Building, and additional support for office areas at both campuses.

IMPACT OF DELAY:

Failure to upgrade NZP life-safety systems and infrastructure will result in operational emergency responses that are costly, disruptive and preventable. The potential impact of delaying such system replacements and upgrades could result in serious harm to visitors and staff, as well as to the animals in our care, along with the loss of research that is essential to the survival of rare and endangered species.

PROJECT TITLE: Upgrade Electrical Systems and Components
INSTALLATION: National Museum of Natural History (NMNH)
LOCATION: Washington, DC

<u>FY 2020 COST ESTIMATE (Thousands of Dollars):</u>	\$1,500
<u>FUTURE-YEAR FUNDING:</u>	<u>\$8,500</u>
Total	\$10,000

BUILDING BACKGROUND:

The NMNH building opened to the public in 1910. The East and West Wings were added in the early 1960s. Two infill buildings were constructed in the original building's East and West courtyards in the late 1990s. In addition to its wide array of public exhibits, the 1.5-million-square-foot-building houses more than 60 million specimen collections (used by both resident and visiting researchers), and educational, scientific, and administrative facilities serving approximately 1,200 people. The NMNH is one of the most visited museums in the world and hosts between seven and eight million visitors annually.

PROJECT JUSTIFICATION:

Most of the building's electrical systems were installed in the early 1960s and they need major replacement. Breakdowns of the systems are frequent, repair parts are often difficult to find, and the systems are not code-compliant, presenting a safety hazard to visitors and collections. The reliability of the electrical system is compromised by the deteriorated condition of the antiquated switchboards, bus ducts, network protectors, generators, transfer switches, and distribution and branch circuit panel boards.

PROJECT DESCRIPTION:

The Smithsonian requests \$1.5 million in FY 2020 to continue the ongoing renovation process, with a particular focus on upgrading the electrical systems. To that end, specific electrical work includes correcting all inadequate short-circuit rating equipment, replacing obsolete equipment, installing new dedicated life-safety panels, and abating hazardous material encountered during this upgrade.

PROGRESS TO DATE:

As part of ongoing renovations, an exhaustive survey and analysis of current electrical systems was completed to inform a feasibility study. Based on the findings, the architect/engineer (A/E) produced Contract Documents (CDs) to 65 percent complete, at which time it became obvious that numerous life-safety components would also require an upgrade. The main part of the project was placed on hold while the A/E surveys were studied to enable the engineers to relocate life-safety circuits to new panels and coordinate changes with the Building Automated System. The 100 percent CDs are expected by the end of 2019. For each discreet area of the building — Main Building, wings and courts — there is a plan for what needs to be replaced and upgraded, including emergency device coordination. This well-defined infrastructure renovation is essential to maintaining the NMNH's continued service to the public.

IMPACT OF DELAY:

Electrical currents introduce large amounts of destructive energy into a facility in the form of heat and magnetic force. The reliability and safety of an electrical system depend on protective devices and electrical equipment being updated regularly and checked for code compliance. If a building is not properly protected, equipment will be damaged and maintenance personnel will be at risk of injury. An upgrade is required to protect the Museum's collections, staff, and the visiting public. Ultimately, a compromised electrical system would also impede the Museum's regular operations and would delay the exhibit re-installation program.

PROJECT TITLE: Improve Grease Vent System
INSTALLATION: National Museum of American History (NMAH)
LOCATION: Washington, DC

FY 2020 COST ESTIMATE (Thousands of Dollars): \$3,000

BUILDING BACKGROUND:

The National Museum of American History, *Kenneth E. Behring Center* (NMAH), opened to the public in 1964, and is one of the Smithsonian's most visited museums. This classic modern building (752,000 gross square feet) contains a variety of exhibitions that explore America's technological, scientific, cultural, and political history. A 2006 master plan generated a series of public space renewal projects, clarifying circulation, modernizing building systems and finishes, and incorporating innovative black box galleries for exhibit installations. To date, renewal of public floors one, two, and three, totaling approximately 240,000 square feet in the center core and West Wing of the Museum, is complete. The future East Wing public space renewal project will occur in two phases, beginning in FY 2026. An updated master plan, completed in 2018, contains recommendations for continued modernization of building systems, renovations of the spaces on the remaining floors of the building primarily containing workspaces, collections storage and food service, and improvements to the extensive grounds surrounding the Museum, including flood protection.

PROJECT JUSTIFICATION:

This project is necessary to address grease build-up in the ventilation system and grease dripping onto workers in the kitchen, which increases the risk of highly dangerous grease fires, and to stop odors from emanating throughout the building.

PROJECT DESCRIPTION:

The Smithsonian requests \$3.0 million in FY 2020 to upgrade the exhaust ductwork in the kitchen to meet current code requirements, improve the dynamic airflow exiting the system at the roof, and reduce grease build-up on the interior walls of the ducts. This work will involve replacing all of the existing horizontal duct runs and re-balancing the airflow in the kitchen and nearby loading dock area, as well as re-tooling controls to allow the chiller plant to remain under slightly negative pressure, to prevent kitchen odors from emanating throughout the rest of the floor.

PROGRESS TO DATE:

Design began in FY 2017 and will be complete in FY 2019.

IMPACT OF DELAY:

Delaying this project will continue to increase the risk of grease fires due to grease build-up in the kitchen ventilation system.

PROJECT TITLE: Revitalization of Building Envelope and Building Systems
INSTALLATION: Hirshhorn Museum and Sculpture Garden (HMSG)
LOCATION: Washington, DC

<u>FY 2020 COST ESTIMATE (Thousands of Dollars):</u>	\$2,000
<u>FUTURE-YEAR FUNDING:</u>	<u>\$12,000</u>
Total	\$14,000

BUILDING BACKGROUND:

The Hirshhorn Museum and Sculpture Garden (HMSG), the Smithsonian Institution's Museum of modern and contemporary art, was designed by architect Gordon Bunshaft, FAIA, of Skidmore, Owings, and Merrill, and opened to the public in 1974. The Museum is located at the northwest corner of 7th Street and Independence Avenue, SW, and the Sculpture Garden is north of the Museum across Jefferson Drive. The building is cylindrical in shape, 231 feet in diameter, and raised 14 feet above a paved plaza on four concrete piers. The building is clad with precast concrete panels with crushed pink granite aggregate. The center of the drum is a circular courtyard with a large, shallow, bronze fountain. The Museum building has four above-ground stories and a lower level below the plaza that surrounds the building.

PROJECT JUSTIFICATION:

This project is necessary to replace building envelope components which have reached the end of their useful life. The roof is more than 25 years old, and the section located directly above collection storage on the fourth floor occasionally leaks and is in need of replacement. The galvanized steel attachments for the exterior concrete wall panels have deteriorated and are beginning to corrode. The exterior wall lacks insulation and a vapor barrier, which causes problems with condensation and poor thermal performance.

PROJECT DESCRIPTION:

The Smithsonian requests \$2.0 million in FY 2020 to begin repairs and improvements to the building envelope at the Museum. This will include replacing the panel attachment system with new, non-corrosive stainless steel connections, adding insulation and a vapor barrier at the exterior wall, and replacing the roof and balcony windows to ensure continuity of waterproofing.

PROGRESS TO DATE:

A Building Envelope Study was completed in FY 2017, followed by testing to obtain additional information in FY 2018. Design is now under way and will be completed by November of 2019, prior to construction beginning in FY 2020.

IMPACT OF DELAY:

Continued corrosion of the exterior panel attachment system creates the risk of panels becoming detached and falling to the plaza below, causing a public safety hazard. Rain damage to the collections on the fourth floor could result if replacement of the roof is delayed.

PROJECT TITLE: Vertical Transportation Revitalization
INSTALLATION: Hirshhorn Museum and Sculpture Garden (HMSG)
LOCATION: Washington, DC

<u>FY 2020 COST ESTIMATE (Thousands of Dollars):</u>	\$6,500
<u>FUTURE-YEAR FUNDING:</u>	<u>\$1,500</u>
Total	\$8,000

PROJECT JUSTIFICATION:

The vertical transportation system at the HMSG includes the passenger elevator, freight elevator, and levelers at the loading dock. This equipment is original to the building and in need of modernization. The parts are prone to failure and some parts are no longer available. Closure of the elevators and escalator for repairs is becoming more frequent. Full replacement of the escalators and elevators is not necessary, but replacement of major components and upgrades to meet building codes are required.

PROJECT DESCRIPTION:

The Smithsonian requests \$6.5 million in FY 2020 to begin the revitalization of the elevators, escalators, and levelers at the loading dock at the HMSG. An additional \$1.5 million will be required in FY 2021.

PROGRESS TO DATE:

A study was completed in December of 2018, which surveyed the existing conditions of the vertical transportation system and made recommendations. The study concluded that the vertical transportation system has exceeded its life-cycle expectancy by 15 years and needs major repairs, replacement of components, and upgrades to meet current building codes. Design will begin in FY 2019 and will be completed in time to award a construction contract in FY 2020.

IMPACT OF DELAY:

An unplanned shutdown of the Museum is possible if there are failures to the elevators, because there is no redundancy to these systems. The passenger elevator is the only accessible path to the galleries for persons with disabilities or with strollers. The escalator is the primary circulation path for visitors going to the lower level, second and third-floor galleries. When the escalator is not in use, the only path to the galleries is the small, slow passenger elevator, which cannot adequately address the needs of visitors. The freight elevator is used to move art and for operational needs of the Museum. These activities are essential to the functioning of the HMSG. Prolonged failure and closure of any of these systems may require an unplanned closure of the Museum.

PROJECT TITLE: Mass-Notification and Fire-Alarm Upgrades
INSTALLATION: Quadrangle
LOCATION: Washington, DC

<u>FY 2020 COST ESTIMATE (Thousands of Dollars):</u>	\$2,000
<u>PRIOR-YEAR FUNDING:</u>	<u>\$2,000</u>
Total	\$4,000

PROJECT JUSTIFICATION:

The facility does not have a dependable, comprehensive system for notification of occupants in the event of an emergency. Furthermore, manufacture of the existing fire-alarm system has been discontinued and replacement parts are no longer available. The fire-alarm and mass-notification systems at the Freer Gallery, with public and staff areas contiguous with those of the Quad, have recently been replaced and will be completely compatible with the new systems at the Quad.

PROJECT DESCRIPTION:

The Smithsonian requests \$2.0 million in FY 2020 to complete the installation of a new mass-notification and fire-alarm system at the Quadrangle.

PROGRESS TO DATE:

The design of the system is complete. Replacing the old systems has been initiated with \$2.0 million in FY 2019 funding and is approximately 50 percent complete.

IMPACT OF DELAY:

If not funded, the installation of new systems will remain incomplete and the building occupants will face increased security risks.

PROJECT TITLE: Replace Gallery Lighting
INSTALLATION: Donald W. Reynolds Center (DWRC)
LOCATION: Washington, DC

<u>FY 2020 COST ESTIMATE (Thousands of Dollars):</u>	\$3,500
<u>FUTURE-YEAR FUNDING:</u>	<u>\$5,000</u>
Total	\$8,500

BUILDING BACKGROUND:

Originally constructed as the Patent Office Building in 1840, the Donald W. Reynolds Center is an excellent example of a Greek Revival public office building. The South Wing is the original building and is distinguished by a monumental Greek Doric-style portico. The East, West, and North Wings, added between 1852 and 1867, expanded the building to occupy two entire blocks between 7th and 9th Streets and between F and G Streets NW, Washington, DC. The total gross square footage is 669,931 square feet. A major renovation of the building was completed in 2006 by Hartman Cox. In 2007, the center courtyard was enclosed by a glass canopy designed by Norman Foster.

PROJECT JUSTIFICATION:

The track lighting at the Reynolds Center overheats, causing a hazardous situation. Repairing the track requires replacement parts; however, the current type of track lighting used is no longer being manufactured and parts are no longer available for repairs. Track lighting throughout the building must be replaced. The new LED light fixtures will provide greater flexibility and improved energy efficiency.

PROJECT DESCRIPTION:

The Smithsonian requests \$3.5 million in FY 2020 to begin replacing track lighting in the galleries at the Reynolds Center with a new LED track lighting system. Swing space or protection-in-place will be required for the collections that are in the galleries while the lighting system is replaced. The lighting installation will be funded for a three-year period, beginning in FY 2020 and ending in FY 2022.

PROGRESS TO DATE:

Design for the new lighting system has been funded and will be completed by March of 2019. A detailed schedule has been developed for the work in each gallery to coordinate the installation of new lighting with Museum exhibits and programs.

IMPACT OF DELAY:

The impact of delay is potential damage to the collections and the safety of staff and visitors due to fire. Heat sensors have been installed to provide a warning that the light track is overheating, but the risk needs to be eliminated by replacing the track and fixtures.

PROJECT TITLE: Façade Repair and Stabilization Implementation
INSTALLATION: Smithsonian Institution Building (SIB)
LOCATION: Washington, DC

<u>FY 2020 COST ESTIMATE (Thousands of Dollars):</u>	\$1,000
<u>PRIOR-YEAR FUNDING:</u>	\$5,000
<u>FUTURE-YEAR FUNDING:</u>	<u>0</u>
Total	\$6,000

BUILDING BACKGROUND:

The Smithsonian Institution Building (SIB), commonly referred to as the Castle, was the first building of the Smithsonian, completed in 1855. The Castle initially housed all of the Smithsonian's operations, including research and administrative offices, lecture and exhibition halls, a library and reading room, chemical laboratories, storage areas for specimens, and living quarters for the first Secretary of the Institution, Joseph Henry, and his family. The Castle has historic architectural and institutional significance and is the public's doorway to, and the symbol of, the Smithsonian Institution. It is listed by the Department of the Interior as a National Historic Landmark.

PROJECT JUSTIFICATION:

The slow but steadily increasing deterioration of the sandstone façade of the Smithsonian Castle has progressed to the point where water intrusion is causing significant damage to the integrity of the stone itself as well as to the historic plaster finishes inside. The effects of weathering include the loss of mortar between stones, cracking and spalling of stone, and, in some areas, detachment of decorative carved elements. Localized failures of gutters, flashing, and downspouts expose more areas of the façade to soaking rains and resulting freeze-thaw damage. Deferred maintenance of wood windows, caulking, and sealants requires that temporary repairs be made to curtail damage until the windows can be replaced as part of a full building revitalization.

PROJECT DESCRIPTION:

Stones have become detached and/or loose and need to be repaired or removed for reinstallation and/or replacement when the full building revitalization is undertaken. The Smithsonian requests \$1.0 million in FY 2020 to complete the phased close inspection and repair of the stone façade and wood windows to mitigate water intrusion and the resulting interior damage.

PROGRESS TO DATE:

The façade has been surveyed and approximately two-thirds has been repaired.

IMPACT OF DELAY:

Deterioration of the façade will continue, with resultant damage to the interior of the building from water infiltration, and risk to visitors and staff from falling fragments of stone.

PROJECT TITLE: Replace and Improve Facilities at Galeta (Phase 1)
INSTALLATION: Smithsonian Tropical Research Institute (STRI)
LOCATION: Panama

<u>FY 2020 COST ESTIMATE (Thousands of Dollars):</u>	\$1,700
<u>PRIOR-YEAR FUNDING:</u> (Planning and Design not included)	\$0
<u>FUTURE-YEAR FUNDING:</u>	<u>\$4,800</u>
Total	\$6,500

BUILDING BACKGROUND:

The Galeta Marine Station is located near the Caribbean terminal of the Panama Canal and the city of Colon. It serves as a laboratory, marine and wetland environmental monitoring station, as well as an education and outreach center for STRI. The site includes several small dormitories, a laboratory building, a small administration structure, and support buildings.

PROJECT JUSTIFICATION:

The buildings at Galeta Marine Station are located directly on an eroding shoreline and are experiencing seawater infiltration during high tides and windy conditions. In addition, the existing laboratory and dormitories are located in old, outdated buildings that are not compliant with current building codes. Among many deficiencies, they do not have fire-protection sprinklers and the current sanitary and potable water systems are substandard.

PROJECT DESCRIPTION:

As part of STRI's Facilities Master Plan, the existing dormitories and laboratory will be replaced with code-compliant structures to safely host the research, education and outreach activities at Galeta. A fire-protection system will be installed to provide full sprinkler coverage to new and existing buildings. Additional infrastructure work includes a new wastewater system and upgrades to the existing potable water and main electrical systems. The Smithsonian requests \$1.7 million in FY 2020 for Phase 1 of this project, which includes the installation of a fire-protection system, a water reserve tank for potable water and fire suppression, and upgrades to the main electrical system. Future work will incorporate a new wastewater system (Phase 2), a replacement laboratory/administration building (Phase 3), and a replacement dormitory building (Phase 4).

PROGRESS TO DATE:

Design is currently under way and expected to be completed by the end of FY 2019, in time to award the construction contract for Phase 1 in mid-FY 2020.

IMPACT OF DELAY:

The Galeta Marine Station requires major renovations at many essential facilities, including the laboratory, administration building, and dormitories. Delaying this project will increase maintenance costs, impair STRI's ability to conduct research and educational programs at Galeta, and potentially endanger visitors and staff.

PROJECT TITLE: Repair Roads at Fred L. Whipple Observatory (FLWO)
INSTALLATION: Smithsonian Astrophysical Observatory (SAO)
LOCATION: Tucson, Arizona

<u>FY 2020 COST ESTIMATE (Thousands of Dollars):</u>	\$800
<u>PRIOR-YEAR FUNDING:</u>	\$1,700
<u>FUTURE-YEAR FUNDING:</u>	<u>\$3,200</u>
Total	\$5,700

PROJECT BACKGROUND:

The Smithsonian Astrophysical Observatory (SAO) is located at the summit of Mt. Hopkins, at an elevation of 8,550 feet, reachable only by Mt. Hopkins Road, a 12-mile-long, unimproved single-lane access road. The road was constructed by the Smithsonian more than 50 years ago to accommodate traffic by SAO research faculty, staff and students, as well as contractors and some members of the public. Telescopes are sited on the summit peaks. SAO activities on Mt. Hopkins require access to and from its facilities at the Base Camp (located at 4,500 feet) and the summit to conduct basic operations, research, and educational activities that form its core mission.

PROJECT DESCRIPTION:

The surface of the single-lane road is largely unpaved, outsloped to the canyons 1,300 feet below, and is uneven with numerous switchbacks. Several sections are sloped at a 24-percent grade, which is well outside the anticipated capability of drivers, standard vehicles and pedestrians. Severe weather is commonplace, and the road requires frequent grading and maintenance to provide a minimum level of safety. Most crucially, in addition to ongoing repair and replacement/extension of guardrails, SAO has identified six sections of the road that have been stabilized against collapse by 60–70-year-old landing mats and steel cables. There has been significant movement and rupture of this system that must be corrected immediately. In addition, the road has numerous exiting metal drainage culverts in close proximity to the 13-kilovolt (KV) power line that services the summit. These culverts require frequent clean-out operations, during which the power to the mountain is shut off because of the proximity of the power line to the conductive culverts. The Smithsonian requests \$800,000 in FY 2020 to stabilize the road and replace the metal culverts with concrete culverts to mitigate these life-safety issues.

PROGRESS TO DATE:

Design is complete. Construction for the first two of the prioritized six sections was awarded in FY 2018, and the contract for the third section of six was awarded in FY 2019. The requested funds will start to rectify this significant safety hazard.

IMPACT OF DELAY:

Until funding is available to do necessary road work, SAO staff, visitors, and scientists will continue to face increased life-safety risks when driving to and from the Observatory.

PROJECT TITLE: Replace Air-Handling Units (AHUs)
INSTALLATION: Suitland Collections Center
LOCATION: Suitland, Maryland

<u>FY 2020 COST ESTIMATE (Thousands of Dollars):</u>	\$3,900
<u>PRIOR-YEAR FUNDING:</u>	\$664
<u>FUTURE-YEAR FUNDING:</u>	<u>\$7,000</u>
Total	\$11,564

BUILDING BACKGROUND:

The Museum Support Center (MSC) at the Smithsonian Institution's Suitland Collections Center (SCC) is the Smithsonian's largest collection storage facility. Opened in 1983, the three-story structure has five separate storage areas (Pods), as well as labs and office areas to support the care and analysis of the Institution's valuable collection of objects and documents. The storage pods and offices are separated by an access corridor (the Street) that allows movement of objects within the building.

PROJECT JUSTIFICATION:

Seven of the air-handling units (AHUs) supporting the heating, ventilation, and air-conditioning (HVAC) system in Pods 1, 2, and 4 and the Street are original to the building and have exceeded their useful lives. They urgently require replacement.

PROJECT DESCRIPTION:

The Smithsonian requests \$3.9 million in FY 2020 to begin replacing the Pod AHUs. The AHUs will be replaced one at a time to ensure that the collections environment is maintained in the facility throughout the process. Additional funding in FYs 2021 and 2022 will be used to complete the replacement of the remaining AHUs.

PROGRESS TO DATE:

Design was completed in June of 2017.

IMPACT OF DELAY:

Failure to replace the AHUs in a timely manner will put the facility's collections environment, and the priceless objects contained in the Pods, at risk.

PROJECT TITLE: Replace Emergency Generator and Chillers
INSTALLATION: Suitland Collections Center
LOCATION: Suitland, Maryland

FY 2020 COST ESTIMATE (Thousands of Dollars): \$1,600

FUTURE-YEAR FUNDING: \$0

Total \$1,600

PROJECT DESCRIPTION:

The Smithsonian requests \$1.6 million in FY 2020 to upgrade various building systems in facilities at its Suitland Collections Center. This work includes two projects: 1) The existing emergency generator at the Museum Support Center (MSC) was installed in 1983 and has reached the end of its useful life, so a new generator is needed to provide continued, reliable support for electrical systems in the event of emergencies; and 2) The chillers at the MSC were original to the facility when it was built in 1983 and the Smithsonian needs to replace the last remaining original chiller with two excess chillers obtained from the National Oceanic and Atmospheric Administration (NOAA) in 2013.

PROGRESS TO DATE:

The design work for this project will be performed in FY 2019.

IMPACT OF DELAY:

Failure to replace obsolete equipment with new, reliable systems will result in increased maintenance and operations costs, the real risk of system failure, and danger to building occupants and valuable collections objects in the event of fire.

PROJECT TITLE: Upgrade Leak-Detection System
INSTALLATION: Freer Gallery of Art
LOCATION: Washington, DC

FY 2020 COST ESTIMATE (Thousands of Dollars): \$2,000

FUTURE-YEAR FUNDING: \$0

Total \$2,000

BUILDING BACKGROUND:

The Freer Gallery of Art was constructed between 1916 and 1923 on the National Mall to house the art collections of Charles Lang Freer. It was the first Smithsonian Museum devoted to the fine arts.

PROJECT JUSTIFICATION:

The Museum collections are housed in dedicated storage rooms in both the Freer Gallery and the adjoining Arthur Sackler Gallery. These spaces are not adequately equipped with leak-detection systems.

PROJECT DESCRIPTION:

The Smithsonian requests \$2.0 million in FY 2020 to install a centrally monitored leak-detection system in all art storage areas of the Freer and Sackler Galleries.

PROGRESS TO DATE:

Design will be completed in FY 2019.

IMPACT OF DELAY:

Without the ability to detect leaks in the art storage areas, the collections will continue to be at risk of water damage.

PROJECT TITLE: Fire-Alarm Panel Replacements
INSTALLATION: Multiple Facilities
LOCATION: Institution-wide

<u>FY 2020 COST ESTIMATE (Thousands of Dollars):</u>	\$2,000
<u>PRIOR-YEAR FUNDING:</u>	\$4,000
<u>FUTURE-YEAR FUNDING:</u>	<u>\$4,000</u>
Total	\$10,000

PROJECT DESCRIPTION:

The Smithsonian requests \$2.0 million in FY 2020 to continue the phased replacement of MXL fire-alarm panels with XLS panels in facilities across the Institution, and to replace the inadequate and outdated mass-notification systems. Current MXL fire-alarm panels are being discontinued and the parts will cease to be available once supplies run out. The old MXL panels will be salvaged and used for parts until all panels are upgraded to XLS. As many as 75 panels at various facilities throughout the Smithsonian require eventual replacement. For some facilities, the fire-alarm panel replacements are being incorporated in larger renovation projects. However, for facilities where no large renovation projects are planned in the near future, these funds will be used for stand-alone fire-alarm panel replacement projects. Panels at the Anacostia Community Museum (ACM), the Donald W. Reynolds Center (DWRC), and at various facilities, including the National Zoological Park (NZIP), were replaced with prior-year funding. The program will continue with replacements at the National Air and Space Museum's Udvar-Hazy Center (NASM-UHC), the National Museum of the American Indian on the National Mall (NMAI-DC), in New York (NMAI-NY) and at the Cultural Resources Center (NMAI-CRC), the Cooper Hewitt, Smithsonian Design Museum in New York (CHSDM), and at various facilities at the Suitland Collections Center (SCC-Garber). The new fire-alarm panels will be able to link to future mass-notification systems. Improved mass-notification systems, in turn, will permit specific emergency notification messages about events such as active shooters, fires, and terror attacks in buildings throughout the Institution.

PROJECT TITLE: Building Projects less than \$1,000,000 and Miscellaneous Repairs
INSTALLATION: Multiple Locations
LOCATION: Institution-wide

FY 2020 COST ESTIMATE (Thousands of Dollars): \$7,500

PROJECT DESCRIPTION:

This request includes smaller individual projects of less than \$1 million each, which usually involve replacement of individual systems or components, and miscellaneous capital repairs needed for unplanned emergencies. In addition, this supports other Smithsonian operations, such as copying and library services, security guard services, collections upgrades, electronic security system modernization and upgrades, and conservation studies.

PROJECT TITLE: Construction Supervision and Administration
INSTALLATION: Multiple Locations
LOCATION: Institution-wide

FY 2020 COST ESTIMATE (Thousands of Dollars): \$7,000

PRIOR-YEAR FUNDING: \$7,000

PROJECT DESCRIPTION:

This request includes costs for permanent construction management and cost-engineering staff, program/project managers, five (5) contract specialists, and term and temporary staff required to perform specialized work associated with Facilities Capital Program projects. A total of 48 FTEs will be funded from the \$7.0 million.

Construction management staff supervise and administer construction contracts. They directly supervise construction contractors to ensure quality work is performed safely, resolve issues that arise during construction, negotiate change orders, approve payments, and perform other administrative functions as contracting officers' technical representatives (COTRs). Cost engineers develop independent Government estimates for every stage of project development, as well as analyze consultant-prepared construction cost estimates and contractor cost proposals for construction contract awards and change orders. This request also funds contract specialists who support the procurement process for acquiring the necessary contract services to execute the Facilities Capital Program by providing essential expertise to ensure the timely award of planning, design, and construction contracts.

FACILITIES PLANNING AND DESIGN

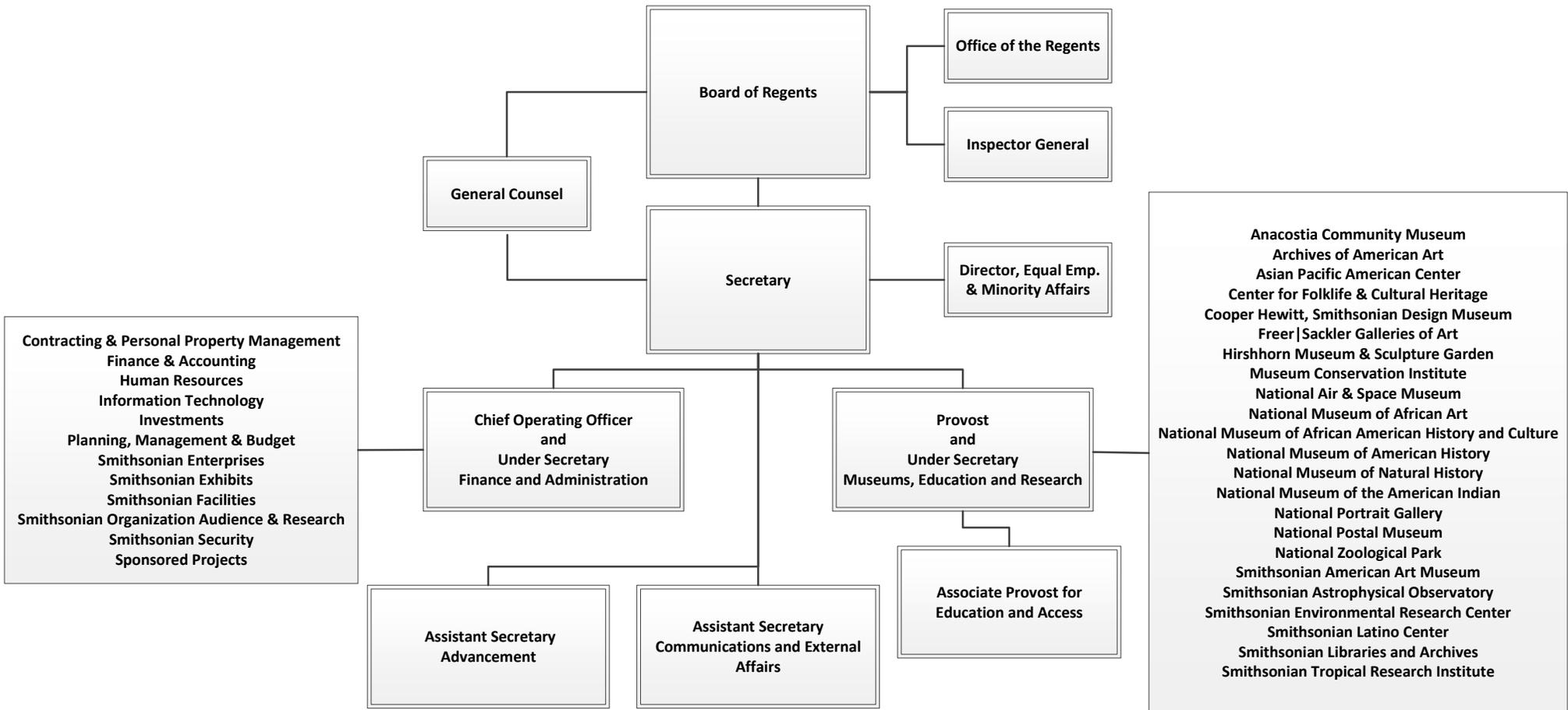
Feasibility studies, needs assessments, and design for capital projects are required before site work can take place. This category includes all costs for contract facility master planning, preliminary and final design for all revitalization and construction projects, special studies, and a small amount for facility engineering, capital leveraging, and research activities, such as those functions performed at the Department of Defense and the National Aeronautics and Space Administration (NASA). The funding will enable development of project baselines, including costs, scope, and schedules, prior to receiving funds to perform the work.

In order to plan and design ahead of Capital Program execution, funding of 10 to 15 percent of the following year's program is required each year. The funding requested for FY 2020 will provide necessary planning and design to the 35 percent stage for most projects included in the planned FY 2021 program, and will complete design for projects planned for FY 2020. This will move the Institution closer to meeting the National Academy of Public Administration's (NAPA) recommendation that firm baselines be established before funding requests to provide more accurate cost estimates and to enable timely award of construction contracts upon receipt of future-year funding.

The Institution requests a total of **\$29,600,000** for planning and design in FY 2020. These funds will be used to continue design development for the new MSC-Suitland Pod 6 collections storage building (\$1.0 million). The Smithsonian is currently finalizing discussions regarding the possibility of partnering with the National Gallery of Art on the Pod 6 project. Other design work for major revitalization projects includes the Smithsonian Institution Building (The Castle) and the Arts and Industries Building (\$16.0 million); National Zoological Park (\$2.5 million); National Museum of Natural History (\$1.5 million); National Museum of American History (\$1.5 million); and the Hirshhorn Museum and Sculpture Garden (\$1.2 million). This request also includes funding to prepare designs for numerous smaller revitalization projects, including security upgrades, space utilization studies, and master planning (\$5.9 million), and will enable the Smithsonian to update comprehensive master planning studies to guide future facilities decisions, as well as other studies to ensure more effective use of existing space.

SMITHSONIAN INSTITUTION

FEBRUARY 2019



**VISITS TO THE SMITHSONIAN
FYs 2014–2018**

<u>MUSEUM</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>
MALL					
SI Castle	1,158,617	1,103,499	1,094,311	1,131,280	1,082,016
A&I Building ¹	0	0	56,427	64,343	18,329
Natural History	7,047,560	7,049,730	6,942,276	6,103,289	5,177,357
Air and Space	6,377,840	6,902,206	7,354,352	7,120,722	6,382,500
American Indian	1,260,756	1,307,568	1,120,359	1,157,460	1,109,424
Freer Gallery ²	357,282	389,113	88,989	0	294,866
Sackler Gallery	192,132	155,998	187,473	195,051	142,548
African Art	180,608	226,743	209,239	165,343	144,175
Ripley Center	140,701	156,318	155,548	164,853	127,850
American History	3,971,987	4,100,718	3,849,115	3,914,493	4,026,325
Hirshhorn	514,922	658,312	647,915	1,097,847	808,498
African American History and Culture ³	0	0	83,802	2,508,403	2,039,364
OFF MALL					
DW Reynolds Center (AA/PG)	1,075,866	1,265,223	1,224,282	1,242,707	2,118,434
Anacostia	37,440	32,983	28,458	31,775	37,562
Cooper Hewitt ⁴	0	218,840	408,846	355,672	316,732
American Indian ⁵ (Heye Center/CRC)	554,063	514,527	472,124	439,325	417,829
Renwick ⁶	17,199	0	829,735	371,201	795,523
National Zoo	2,304,129	2,194,194	2,593,559	2,025,148	1,664,579
Postal	363,802	401,124	359,562	470,723	525,168
Udvar-Hazy Center	<u>1,214,284</u>	<u>1,529,293</u>	<u>1,592,416</u>	<u>1,570,706</u>	<u>1,546,780</u>
TOTAL	26,769,188	28,206,389	29,298,788	30,130,341	28,775,859

¹ The Arts and Industries (A&I) Building closed to the public in January 2004 and hosts special events only.

² The Freer Gallery closed to the public in January 2016 for renovation and reopened in October 2017.

³ The National Museum of African American History and Culture opened in September 2016.

⁴ The Cooper Hewitt, Smithsonian Design Museum closed to the public in October 2011 for phase two of the Carnegie Mansion renovation project and reopened in December 2014.

⁵ Includes the George Gustav Heye Center in New York City and the Cultural Resources Center (CRC) in Suitland, Maryland.

⁶ The Renwick Gallery closed to the public in December 2013 and reopened in November 2015.

TRUST FUNDS

In addition to support provided by federal appropriations, the Smithsonian Institution receives and generates trust funds to expand and enrich its programs. Trust funds are used to leverage the Smithsonian’s research capacity through partnerships with federal agencies, universities, non-Governmental organizations, industry, and other private organizations, both national and international. Trust funds are raised to renovate and modernize exhibits throughout the Institution. The following provides an overview of the current sources of trust funds.

The Institution’s trust funds include general trust funds with limited or no restrictions on their use, funds restricted by the donor or sponsor, and Government grants and contracts. Projections are subject to the uncertainty of the size of donations, grants, and contracts; to fluctuations in visitor attendance; and to the volatility of the economy, which together directly affect the return on the endowment, short-term interest income, and donor giving, as well as restaurant, magazine, catalogue, and museum shop revenues, memberships, and other business activities. The Institution’s gross operating revenue, less the expenses of the auxiliary activities, represents the net operating revenue available for programmatic and related purposes. The following table summarizes the sources of trust operating funds.

(Dollars in Millions)	FY 2017 Actuals	FY 2018 Estimates	FY 2019 Estimates
General Trust	97.9	89.5	76.1
Donor/Sponsor-Designated	247.7	247.3	263.7
Government Grants and Contracts	113.7	117.5	116.9
Total Available for Operations	\$459.3	\$454.3	\$456.7

SOURCE AND APPLICATION OF TRUST FUNDS — The following sections describe the sources of each category of trust funds as well as a general account of how they are used.

General Trust Funds — The sources of general trust funds are investment income; payout from unrestricted endowments; net proceeds from the museum shops, catalogues, and food service concessions; sales of Smithsonian books, records, and other products based on designs and objects in the collections; theater/planetarium operations at the National Air and Space Museum; licensing fees from the Smithsonian Channel and student travel programs; rental of exhibitions of the Smithsonian Institution Traveling Exhibition Service; membership programs (including subscriptions to *Smithsonian* and *Air and Space* magazines); the sale of posters, exhibition brochures, catalogues, and other publications; and admission fees. Projected sources of FY 2019

general trust funds total \$76,100,000. These funds are used to support administrative programs such as central management, legal counsel, accounting, personnel, contracting, and budget, as well as fund raising, education, research and public programs, scholarly studies, and exhibitions.

Donor/Sponsor-Designated Funds — Designated trust funds include gifts, grants, and earnings on endowments from individuals, foundations, organizations, and corporations which specify the purpose of the funds. Designated funds in FY 2019 are projected to total \$263,700,000. Generally, these funds support a particular exhibition or program, or are used to manage the Smithsonian collections and/or support research projects in accordance with the Institution's mission.

Government Grants and Contracts — Various Government agencies and departments provide grants and contracts for specific projects that align with the Smithsonian's expertise in a particular area of science, history, art, or education. For FY 2019, Government grants and contracts are projected to total \$116,900,000. Of this amount, \$93,942,000 is planned for astrophysical research and development programs carried out by the Smithsonian Astrophysical Observatory.

APPROPRIATION LANGUAGE AND CITATIONS

The Act of August 10, 1846, codified within 20 U.S.C. §§ 41–70, established the Smithsonian Institution “for the increase and diffusion of knowledge,” and provided the organizational structure for the Institution’s administration. The mission of the Smithsonian Institution has remained unchanged throughout its 173-year history, although additional authority for many of the Institution’s programs and operations has been enacted over the years. Selected provisions of those statutes, along with selected provisions of the Smithsonian charter and prior-year appropriations acts, are cited below as authority for the Smithsonian Institution’s FY 2019 appropriations language.

Appropriation: Salaries and Expenses

1. For necessary expenses of the Smithsonian Institution, as authorized by law, including research in the fields of art, science, and history;

20 U.S.C. § 50 provides that “...all objects of art and of foreign and curious research, and all objects of natural history, plants, and geological and mineralogical specimens...shall be so arranged and classified...as best to facilitate the examination and study of them...”

20 U.S.C. § 53a provides that “Appropriations are hereby authorized for...the making of solar observations at high altitudes...”

20 U.S.C. § 69 provides that “The Secretary of the Smithsonian Institution is hereby authorized...to continue independently or in cooperation anthropological researches among the American Indians and the natives of lands under the jurisdiction or protection of the United States...”

20 U.S.C. § 75b(b) provides that “The [National Portrait] Gallery shall function as a free public museum for the exhibition and study of portraiture and statuary depicting men and women who have made significant contributions to the history, development, and culture of the people of the United States and of the artists who created such portraiture and statuary.”

20 U.S.C. § 76bb(c) provides that “The Joseph H. Hirshhorn Museum and Sculpture Garden...shall be used for the storage, exhibition, and study of works of art...”

20 U.S.C. § 77a provides that “Said national air and space museum shall...provide educational material for the historical study of aviation and space flight.”

20 U.S.C. § 78 provides that “The Secretary of the Smithsonian Institution is hereby authorized to cooperate with any State, educational institution, or scientific organization in the United States, for continuing paleontological investigations...”

20 U.S.C. § 80m(a)(3) provides that “(a)...the Board [of Regents] may-- ... (3) conduct programs of research and education [in the Museum of African Art]...”

20 U.S.C. §§ 80q-1(b)(1) & (3) provide that “(b)The purposes of the National Museum [of the American Indian] are to-- (1) advance the study of Native Americans, including the study of language, literature, history, art, anthropology, and life;... (3) provide for Native American research and study programs...”

20 U.S.C. § 80r-2(b)(1) provides that “(b) The purpose of the [National] Museum [of African American History and Culture] shall be to provide for-- (1) the collection, study and establishment of programs relating to African American life, art, history and culture that encompass [certain periods of the African American diaspora]...”

2. development, preservation, and documentation of the National Collections;

20 U.S.C. § 50 provides that “...all objects of art and of foreign and curious research, and all objects of natural history, plants, and geological and mineralogical specimens...shall be delivered to such persons as may be authorized by the Board of Regents to receive them, and shall be so arranged and classified...as best to facilitate the examination and study of them...”

20 U.S.C. § 50a provides that “The Smithsonian Institution is . . . authorized to include in its estimates of appropriations such sums as may be needful for the preservation and maintenance of the [John Gellatly art] collection.”

20 U.S.C. § 59 provides that “All collections of rocks, minerals, soils, fossils, and objects of natural history, archaeology, and ethnology...when no longer needed for investigations in progress shall be deposited in the National Museum.”

20 U.S.C. § 69 provides that “The Secretary of the Smithsonian Institution is hereby authorized...to continue independently or in cooperation...the excavation and preservation of archaeological remains.”

20 U.S.C. § 75e(1) provides that “...the Board [of Regents] may-- (1) purchase, accept, borrow, or otherwise acquire portraiture, statuary, and other items for preservation, exhibition, or study.”

20 U.S.C. § 76c(b) provides that “...the Regents are hereby authorized...to acquire (by purchase or otherwise) and sell contemporary works of art or copies thereof...”

20 U.S.C. § 76cc(a) provides that “There is established in the Smithsonian Institution a Board of Trustees...which shall have the sole authority (i) to purchase or otherwise acquire (whether by gift, exchange, or other means) works of art for the Joseph H. Hirshhorn Museum and Sculpture Garden...”

20 U.S.C. § 77a provides that “Said national air and space museum shall...collect, preserve, and display aeronautical and space flight equipment of historical interest and significance...”

20 U.S.C. § 80a(a) provides that “...the Smithsonian Institution shall collect, preserve, and exhibit military objects of historical interest and significance.”

20 U.S.C. §§ 80m(a)(1) & (2) provide that “(a)...the Board [of Regents] may-- (1) purchase, accept, borrow or otherwise acquire additional works of art or any other real or personal property for the Museum [of African Art]; (2) preserve, maintain, restore...or otherwise hold any property of whatsoever nature acquired...”

20 U.S.C. § 80q-1(b)(2) provides that “(b) The purposes of the National Museum [of the American Indian] are to--...(2) collect, preserve, and exhibit Native American objects of artistic, historical, literary, anthropological, and scientific interest...”

20 U.S.C. § 80r-2(b)(3) provides that “(b) The purpose of the [National] Museum [of African American History and Culture] shall be to provide for-- ...(3) the collection and study of artifacts and documents relating to African American life, art, history, and culture...”

20 U.S.C. § 81 provides that “The National Zoological Park is placed under the direction of the Regents of the Smithsonian Institution, who are authorized to transfer to it any living specimens, whether of animals or plants, in their charge, to accept gifts for the park...[and] to make exchanges of specimens...”

3. presentation of public exhibits and performances;

20 U.S.C. § 75b(b) provides that “The [National Portrait] Gallery shall function as a free public museum for the exhibition and study of portraiture and statuary...”

20 U.S.C. § 76c(b) provides that “In order to encourage the development of contemporary art and to effect the widest distribution and cultivation in matters of such art, the Regents are hereby authorized to...conduct exhibitions...”

20 U.S.C. § 76bb(c) provides that “The Joseph H. Hirshhorn Museum and Sculpture Garden...shall be used for the storage, exhibition, and study of works of art...”

20 U.S.C. § 77a provides that “Said national air and space museum shall...collect, preserve, and display aeronautical and space flight equipment of historical interest and significance...”

20 U.S.C. § 80a(a) provides that “...the Smithsonian Institution shall collect, preserve, and exhibit military objects of historical interest and significance.”

20 U.S.C. § 80m(a)(2) provides that “(a)...the Board [of Regents] may--... (2)...display...any property of whatsoever nature acquired [for the Museum of African Art]...”

20 U.S.C. § 80q-1(b)(2) provides that “(b) The purposes of the National Museum [of the American Indian] are to--... (2) collect, preserve, and exhibit Native American objects of artistic, historical, literary, anthropological, and scientific interest...”

20 U.S.C. § 80r-2(b)(3) provides that “(b) The purpose of the [National] Museum [of African American History and Culture] shall be to provide for-- ... (3) the collection and study of artifacts and documents relating to African American life, art, history, and culture...”

4. collection, preparation, dissemination, and exchange of information and publications;

20 U.S.C. § 53a provides that “Appropriations are hereby authorized for...preparation of manuscripts, drawings, and illustrations for publications.”

5. conduct of education, training, and museum assistance programs;

20 U.S.C. §§ 65a(a)(1),(3) & (4) provide that “(a)The Director of the National Museum under the direction of the Secretary of the Smithsonian Institution shall-- (1) cooperate with museums and their professional organizations in a continuing study of museum problems and opportunities, both in the United States and abroad;... (3) prepare and distribute significant museum publications; (4) perform research on, and otherwise contribute to, the [development of] museum techniques....”

20 U.S.C. § 77a provides that “Said national air and space museum shall...provide educational material for the historical study of aviation and space flight.”

20 U.S.C. § 79a provides that “The purpose of setting aside such an area [Barro Colorado Island] is to preserve and conserve its natural features...thus providing a place where duly qualified students can make observations and scientific investigations for increase of knowledge, under such conditions and regulations as may be prescribed by the [Smithsonian Institution].”

20 U.S.C. § 79e provides that “There are authorized to be appropriated annually...such sums as are necessary for the administration of [the Canal Zone Biological Area] ... and for the maintenance of laboratory or other facilities...”

20 U.S.C. § 80m(a)(3) provides that “(a)...the Board [of Regents] may-- ... (3) conduct programs of research and education [in the Museum of African Art]....”

Section 2 of Public Law 114-151 (May 9, 2016), to protect and preserve international cultural property, provides that the Smithsonian Institution should be included in an interagency coordinating committee to...”consult with governmental and nongovernmental organizations, including... museums, educational institutions, and research institutions, and participants in the international art and cultural property market on efforts to protect and preserve international cultural property.”

6. maintenance, alteration, operation, lease agreements of no more than 30 years, and protection of buildings, facilities, and approaches;

20 U.S.C. § 53a provides that “Appropriations are hereby authorized for the maintenance of the Astrophysical Observatory and...for repairs and alterations of buildings and grounds occupied by the Smithsonian Institution in the District of Columbia and elsewhere...”

20 U.S.C. § 76ee provides that “There is authorized to be appropriated...such additional sums as may be necessary for the maintenance and operation of such [Hirshhorn] museum and sculpture garden.”

20 U.S.C. § 79b(c) provides that “The ...[Smithsonian Institution] shall...(c) be responsible for the construction and maintenance of laboratory and other facilities on the area provided for the use of students authorized to carry on studies within the confines of the area...”

20 U.S.C. § 80m(a)(2) provides that “(a)...the Board [of Regents] may--...(2) preserve, maintain...any property of whatsoever nature acquired [for the Museum of African Art]...”

20 U.S.C. § 81 provides that “The National Zoological Park is placed under the direction of the Regents of the Smithsonian Institution, who are authorized...to administer and improve the said Zoological Park for the advancement of science and the instruction and recreation of the people.” Public Law 101-512 making appropriations for the Department of the Interior and Related Agencies for the fiscal year 1991 extended the maximum term for federal leases from ten years to thirty.

7. not to exceed \$_____for services as authorized by 5 U.S.C. 3109;

5 U.S.C. § 3109(b) provides that “When authorized by an appropriation or other statute, the head of an agency may procure by contract the temporary (not in excess of 1 year) or intermittent services of experts or consultants or an organization thereof, including stenographic reporting services.”

8. and purchase, rental, repair, and cleaning of uniforms for employees,

5 U.S.C. § 5901(a) provides that “There is authorized to be appropriated annually to each agency of the Government of the United States...on a showing of necessity or desirability, such sums as may be necessary to carry out this subchapter.

40 U.S.C. § 6306(c) provides that “The employees designated as special police under subsection (a) [covering the Smithsonian Institution] may be provided, without charge, with uniforms and other equipment as may be necessary for the proper performance of their duties...”

9. \$_____, to remain available until September 30, 20___, except as otherwise provided herein;

Wording added by the Congress in Public Law 111-88 making appropriations for the Department of the Interior and Related Agencies

for fiscal year 2010 to extend the availability for the Salaries and Expenses account from one year to two years unless otherwise provided.

10. of which not to exceed \$_____ for the instrumentation program, collections acquisition, exhibition reinstallation, and the repatriation of skeletal remains program shall remain available until expended;

Wording added by the Congress in Public Law 100-446 making appropriations for the Department of the Interior and Related Agencies for fiscal year 1989 to permit the Institution to establish no-year funding within the Salaries and Expenses account for the development of major scientific instrumentation. Public Law 101-512, making appropriations for the Department of the Interior and Related Agencies for fiscal year 1991, allowed no-year funding to be used for the instrumentation program as well as purchases for museum collections; reinstallation of museum exhibitions; and the repatriation of skeletal remains.

31 U.S.C. § 1301(c)(2) provides that “(c) An appropriation in a regular, annual appropriation law may be construed to be permanent or available continuously only if the appropriation--... (2) expressly provides that it is available after the fiscal year covered by the law in which it appears.”

11. and including such funds as may be necessary to support American overseas research centers:

Wording added by the Congress in Public Law 99-190 making appropriations for Other Related Agencies for fiscal year 1986.

12. *Provided*, That funds appropriated herein are available for advance payments to independent contractors performing research services or participating in official Smithsonian presentations.

31 U.S.C. § 3324(b)(1) provides that (b) “An advance of public money may be made only if it is authorized by-- (1) a specific appropriation or other law...”

Appropriation: Facilities Capital

1. For necessary expenses of repair, revitalization, and alteration of facilities owned or occupied by the Smithsonian Institution, by contract or otherwise, as authorized by section 2 of the Act of August 22, 1949 (63 Stat. 623),

20 U.S.C. § 53a provides that “Appropriations are hereby authorized...for repairs and alterations of buildings and grounds occupied by the Smithsonian Institution in the District of Columbia and elsewhere...”

20 U.S.C. § 81 provides that “The National Zoological Park is placed under the direction of the Regents of the Smithsonian Institution, who are authorized...to administer and improve the said Zoological Park for the advancement of science and the instruction and recreation of the people.”

Public Law 108-108, making appropriations for the Department of the Interior and Related Agencies for fiscal year 2004, established the Facilities Capital appropriation. The appropriation includes activities formerly financed through the Repair, Restoration and Alteration of Facilities appropriation and the Construction appropriation.

2. and for construction,

20 U.S.C. § 53a provides that “Appropriations are hereby authorized...for repairs and alterations of buildings and grounds occupied by the Smithsonian Institution in the District of Columbia and elsewhere...”

3. including necessary personnel,

Wording added by Congress for clarification in Public Law 108-7 making appropriations for the Department of Interior and Related Agencies for fiscal year 2003.

4. \$ _____ to remain available until expended,

31 U.S.C. § 1301(c)(2) provides that “(c) An appropriation in a regular, annual appropriation law may be construed to be permanent or available continuously only if the appropriation--... (2) expressly provides that it is available after the fiscal year covered by the law in which it appears.”

5. of which not to exceed \$_____ shall be for services as authorized by 5 U.S.C. 3109.

5 U.S.C. § 3109(b) provides that “When authorized by an appropriation or other statute, the head of an agency may procure by contract the temporary (not in excess of 1 year) or intermittent services of experts or consultants or an organization thereof, including stenographic reporting services.”



Smithsonian Institution

The Board of Regents

November 19, 2018

The Honorable Ken Calvert
Chairman, Subcommittee on Interior, Environment and Related Agencies
Committee on Appropriations
U. S. House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

I am pleased to send you the Smithsonian Institution's Office of the Inspector General's Semiannual Report to Congress for the period of April 1, 2018 to September 30, 2018. The report highlights the audit and investigation activities of the Office of the Inspector General for this six-month period and fulfills the Institution's requirements under Section 5(a) of the Inspector General Act of 1978. Also included is the Smithsonian's response as required by Section 5(b) of the Act.

Sincerely,

John W. McCarter, Jr.
Chair, Audit and Review Committee of the Board of Regents
Smithsonian Institution

Enclosures



Smithsonian Institution

David J. Skorton
Secretary

November 15, 2018

The Honorable Ken Calvert
Chairman, Subcommittee on Interior, Environment and Related Agencies
Committee on Appropriations
U.S. House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

This letter serves as the Smithsonian's management response to the enclosed Smithsonian Office of Inspector General's (OIG) Semiannual Report to Congress for the period of April 1, 2018 to September 30, 2018.

The period began with 11 open audit recommendations and the OIG issued 29 audit recommendations during the period for a total of 40. Our staff was able to close 6 recommendations leaving 34 open recommendations at the end of the period.

Table 1 (enclosed) provides an update on the status of incomplete corrective actions from previous semiannual reporting periods, reflected on page 13 of the Inspector General's semiannual report, regarding the Smithsonian Institution's privacy program and the information security program.

We are committed to working with the Inspector General to ensure that the Institution's operations are economical, efficient, and effective, as well as free from fraud and abuse. We will continue to cooperate with the OIG to ensure that all Smithsonian Institution programs and operations meet the highest standards.

Sincerely,

A handwritten signature in black ink that reads "David J. Skorton".

Enclosures

MANAGEMENT RESPONSE

**TABLE 1
CORRECTIVE ACTIONS ON RECOMMENDATIONS MADE IN PREVIOUS SEMIANNUAL REPORTING PERIODS**

Audit Report Date	Title of Audit	Progress on Actions
3/14/2016	<p>Audit of the Smithsonian Institution’s Privacy Program (OIG-A-16-04)</p> <p>The Smithsonian Privacy Officer (SPO):</p> <p>(1) should strengthen management of the Smithsonian’s PII holdings by developing a formal process to periodically conduct and document a comprehensive inventory of PII used by the Smithsonian;</p> <p>(2) develop and implement a plan to reduce PII holdings where possible;</p>	<p>(1) CLOSED, effective 11/8/18. The Privacy Office completed the first ever Smithsonian-wide inventory of PII in both electronic and paper formats. This Inventory has been documented, reviewed and analyzed, and identified trends relating to the collection and use of PII within the Smithsonian.</p> <p>(2) CLOSED, effective 11/8/18. On 3/6/2017, the Privacy Office submitted to the OIG its plan to reduce PII holdings. On 11/15/2017, the Smithsonian hired a contractor to assist it in implementing the plan and conducting the PII Inventory. Through the inventory process, Management reduced the Smithsonian's PII holdings by ensuring that all units appropriately considered data mitigation when conducting the inventory of PII within their respective units. All units completed and submitted their respective surveys, and the PII Inventory Team conducted the requisite data analysis and developed and submitted the completed PII Inventory on August 31, 2018.</p>

(3) strengthen policies and procedures to identify systems requiring a PIA;

(3) **In process and on track.** The Privacy Office implemented and continues to utilize sound policies and procedures to identify and assess risk of all systems and initiatives that collect, use, store, or disseminate PII or sPII. The Smithsonian's risk assessment process was augmented by the implementation of an automated governance, risk, and compliance tool. Upon conclusion of the PII Inventory and review of the findings, Management concluded the risk assessment tools, associated processes, and procedures are robust and identify systems requiring an assessment. The Privacy Office is on track to update the Privacy Program policy handbook guidance to include information about periodic inventories and conducting risk assessments through the new tool. Target date for completion is 11/30/18.

(4) ensure a PIA is completed for all systems containing PII;

(4) **In process and on track.** During the PII inventory process, the Privacy Office identified approximately 289 paper records and 132 IT Electronic Systems requiring privacy risk assessments, and is in the process of completing the requisite assessment. Management submitted an extension request and is on track for completion by 11/30/2019.

9/27/2017

**Fiscal Year 2016 Independent Evaluation of the
Smithsonian Institution's Information Security
Program
(OIG-A-18-02)**

The Chief Information Officer:

(1) should develop and implement an enterprise information security architecture that aligns with SI's strategic plan and mission objectives;

(2) should update SI Technical Standard & Guidelines IT-960-02 Disaster Recovery Planning to reflect Current NIST guidance. The CIO also should ensure that current disaster recovery plans and information system contingency plans reflect the changes in guidance.

(1) **In process and on track.** The Office of the Chief Information Officer documented an IT Security Continuous Monitoring architecture and drafted requirements for a comprehensive architecture for the IT Security Program. Once the requirements are finalized, a planned target architecture and roadmap will be implemented. Target date for completion is 12/30/18.

(2) **In process and on track.** The Office of the Chief Information Officer implemented a new Disaster Recovery infrastructure and is in the process of updating Disaster Recovery policies, procedures, and plans based on the new solution. Target date for completion is 6/30/19.

**Adjustments for FY 2019
(Dollars in Thousands)**

Unit	FY 2019 Enacted	Reorganizations and Reprogrammings	FY 2019 Revised Estimate
	\$000s	\$000s	\$000s
MUSEUMS AND RESEARCH CENTERS			
<i>Unlocking the Mysteries of the Universe</i>			
National Air and Space Museum	20,110	0	20,110
Smithsonian Astrophysical Observatory	24,593	0	24,593
Major Scientific Instrumentation	4,118	0	4,118
Universe Consortium	184	0	184
<i>Subtotal, Unlocking the Mysteries of the Universe</i>	49,005	0	49,005
<i>Understanding and Sustaining a Biodiverse Planet</i>			
National Museum of Natural History	49,789	0	49,789
National Zoological Park	27,566	0	27,566
Smithsonian Environmental Research Center	4,227	0	4,227
Smithsonian Tropical Research Institute	14,486	0	14,486
Biodiversity Consortium	1,543	0	1,543
<i>Subtotal, Understanding and Sustaining a Biodiverse Planet</i>	97,611	0	97,611
<i>Valuing World Cultures</i>			
Arthur M. Sackler Gallery/Freer Gallery of Art	6,273	0	6,273
Center for Folklife and Cultural Heritage	3,184	0	3,184
Cooper Hewitt, Smithsonian Design Museum	5,086	0	5,086
Hirshhorn Museum and Sculpture Garden	4,544	0	4,544
National Museum of African Art	4,654	0	4,654
World Cultures Consortium	792	0	792
<i>Subtotal, Valuing World Cultures</i>	24,533	0	24,533
<i>Understanding the American Experience</i>			
Anacostia Community Museum	2,405	0	2,405
Archives of American Art	1,933	0	1,933
National Museum of African American History & Culture	33,079	-462 1	32,617
National Museum of American History, Behring Center	25,373	0	25,373
National Museum of the American Indian	33,242	406 2	33,648
National Portrait Gallery	6,556	0	6,556
National Postal Museum	1,331	250 3	1,581
Smithsonian American Art Museum	10,239	150 4	10,389
American Experience Consortium	600	0	600
<i>Subtotal, Understanding the American Experience</i>	114,758	94	115,102
TOTAL, MUSEUMS AND RESEARCH CENTERS	285,907	344	286,251

**Adjustments for FY 2019
(Dollars in Thousands)**

Unit	FY 2019 Enacted \$000s	Reorganizations and Reprogrammings \$000s	FY 2019 Revised Estimate \$000s
MISSION ENABLING			
Program Support and Outreach			
Outreach	9,333	0	9,333
Communications	2,839	0	2,839
Institution-wide Programs	16,784	0	16,784
Smithsonian Exhibits	3,169	0	3,169
Museum Support Center	1,906	0	1,906
Museum Conservation Institute	3,359	0	3,359
Smithsonian Institution Archives	2,423	0	2,423
Smithsonian Libraries	11,373	462 ¹	11,835
Subtotal, Program Support and Outreach	51,186	462	51,648
Office of the Chief Information Officer	52,509	0	52,509
Administration	36,405	-150 ⁴	36,255
Office of the Inspector General	3,538	0	3,538
Facilities Services			
Facilities Maintenance	79,545	0	79,545
Facilities Operations, Security, and Support	230,904	-656 ^{2,3}	230,248
TOTAL, MISSION ENABLING	454,087	-344	453,743
Undistributed Rescission			
GRAND TOTAL, SMITHSONIAN INSTITUTION	739,994	0	739,994

Footnotes for FY 2019 Estimate:

- \1 Transfer of \$462,000 from National Museum of African American History and Culture to Smithsonian Libraries for library staff and support costs.
- \2 Transfer of \$406,000 from Smithsonian Facilities, Operations, Security and Support to National Museum of the American Indian for security support at the Heye Center.
- \3 Transfer of \$250,000 from Smithsonian Facilities, Operations, Security and Support to National Postal Museum for security support.
- \4 Transfer of \$150,000 from Administration to Smithsonian American Art Museum for operational requirements.