



Smithsonian

Fiscal Year 2019

Submitted to the Committees on Appropriations
Congress of the United States

Smithsonian Institution

Fiscal Year 2019

Budget Justification to Congress

February 2018

SMITHSONIAN INSTITUTION
Fiscal Year 2019 Budget Request to Congress
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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, 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 172 years. The federal commitment provides the foundation for all we do, and is especially helpful 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 our role in 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 in numerous ways. 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 to provide a nimble, cost-effective, and responsive administrative infrastructure that will 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, the Smithsonian Institution 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 diverse, encompassing art, history, science, education, and culture. We have 19 museums and galleries, 21 libraries, nine research centers, the National Zoo, and 216 Affiliates in 46 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. For the last full fiscal year, our museums had more than 30 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 nearly eight million people. The Smithsonian Channel is distributed by all of the top television cable service providers and is available in more than 30 million households nationwide.

Our collections total 155 million objects, including 145 million scientific specimens, 340,000 works of art, and two million library volumes. We also care for 156,000 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 all these objects in trust for the American people and preserve these priceless national treasures for future generations to enjoy.

In fiscal year (FY) 2017, our visitors enjoyed approximately 100 new exhibitions, including: *Your Community, Your Story: Celebrating Five Decades of the Anacostia Community Museum, 1967–2017* at the Anacostia Community Museum; *Patriot Nations: Native Americans in Our Nation's Armed Forces* at the National Museum of the American Indian; *Akunnittinni: A Kinngait Family Portrait* at the George Gustav Heye Center; *Yayoi Kusama: Infinity Mirrors* at the Hirshhorn Museum and Sculpture Garden; *Kung Fu Wildstyle* at the Arthur M. Sackler Gallery; *The Face of Battle, Americans at War, 9/11 to Now* at the National Portrait Gallery; *Jim Chuchu's Invocations* at the National Museum of African Art; *My Fellow Soldiers: Letters from World War I* at the National Postal Museum; *Artist Soldiers: Artistic Expression in the First World War* at the National Air and Space Museum; *Clouds in a Bag: The Evelyn Way Kendall Ballooning and Early Aviation Collection* at the Udvar-Hazy Center; *Narwhal: Revealing an Arctic Legend* at the National Museum of Natural History; *The Virtue in Vice* at Cooper Hewitt, Smithsonian Design Museum; *Watch This! New Directions in the Art of the Moving Image* at the Smithsonian American Art Museum; *Parallax Gap* at the Renwick Gallery; *Before Internet Cats: Feline Finds from the Archives of American Art* at the Archives of American Art; the four exhibitions at the renovated second-floor West Wing of the National Museum of American History; and the 11 thought-provoking permanent galleries in our National Museum of African American History and Culture.

Digital technology allows us to reach new, diverse audiences more than ever before. In FY 2017, our websites attracted more than 150 million unique visitors. In social media, we currently have 11 million followers on Facebook and Twitter alone, with tens of thousands more engaging with us on other Internet platforms. Our newest podcast, *Sidedoor*, debuted in October 2016, featuring behind-the-scenes stories from the Smithsonian's museums, research centers, and world-renowned experts. The podcast has reached people in all 50 states and more than 146 countries, with more than 1.25 million downloads to date. Last year, the Smithsonian Astrophysical Observatory developed a mobile app that allowed users to have a virtual view in real time of the solar eclipse as it crossed the continental United States on August 21, 2017.

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 2.9 million objects, specimens and books, and electronic records for 28 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 344,000 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 can be scanned in just 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. Our Smithsonian Science Education Center produces science curricula materials for grades K–8 and supplementary resources for all grade levels. More than 2,300 of these learning resources are tied to national standards and are available for free online. 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 a 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 2017, 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 brought 31 exhibitions to 142 communities in all 50 states, the District of Columbia, and Guam, reaching an audience of 4.5 million people. Last year alone, eight poster exhibitions were sent to 5,450 schools, museums, and libraries.

We have numerous dedicated 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 FY 2018, the National Museum of the American Indian's George Gustav Heye Center will open 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 unique 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 six to 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 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.

In addition, we leverage our strengths with our strategic national and international partners for a combined greater impact. For instance, on Earth Day 2017, we convened the *Earth Optimism Summit*, a three-day event featuring more than 150 scientists, thought leaders, philanthropists, conservationists, and civic leaders from across the political spectrum. It explored solutions to global conservation problems and provided a platform to discuss ways to apply findings and replicate successes. Elsewhere, our international efforts are increasingly directed toward cultural heritage protection. Last March, the Smithsonian and the U.S. Department of State announced a project to enable Iraq's State Board of Antiquities and Heritage and others to document and stabilize precious artifacts in the ancient city of Nimrud.

These and other Smithsonian projects foster international collaboration and bring together governments, foundations, and the world's leading thinkers and scientists. We bridge 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 museums and laboratories, our teams are making discoveries, preserving the past, and sharing insights with audiences of all ages. By working with governments and organizations around the world, we amplify our impact. Cross-disciplinary collaboration gets results and produces a shared legacy of progress and discovery.

Our work toward a groundbreaking partnership with the Victoria and Albert (V&A) Museum in London, which we announced in 2016, continues to progress. This collaboration will consist of a combined exhibition space jointly curated by Smithsonian and V&A staff members as well as a separate space for Smithsonian self-curated exhibitions. We expect the new spaces to open in 2023 and that they will help the Smithsonian expand our scope to reach new audiences without the need for federal funding.

With our international partners and 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 10,000 different species) on 63 plots in 24 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, with the goal of determining how to manage these important resources. Six new sites are scheduled to be added to this network in the coming year, 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. These actions, in turn, will prove vital to prevent potential pandemics from occurring.

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 continue to explore the universe's boundless mysteries, from carbon-based planets capable of supporting life to a planet currently forming in an Earth-like orbit around a young star light-years away from our own solar system.

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 a key repository of scientific information about virtually every form of life on Earth. The 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 devoted to developing DNA barcoding as a global standard for the identification of 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 recognized 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 6,700 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, more than 1,700 interns, and more than 10,000 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 eighth year in a row, ranked as one of the best places to work in the federal Government.

Building on our 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 in the future. Significant examples include the renovated West Wing of the National Museum of American History, the recently modernized and reopened Freer and Sackler Galleries, and the National Museum of African American History and Culture that opened to great acclaim in September of 2016 and is still experiencing record attendance. These important museums demonstrate the power of the Smithsonian to educate, inspire, and bring people together.

Today, with our numerous museums, distinguished research and scholars, iconic American treasures, and a vast array of information made accessible from its websites, the Smithsonian remains a resource of extraordinary value for the American people and the world. As such, the Smithsonian will continue to prove its worth as an investment in the future and a steward of our past.

SMITHSONIAN INSTITUTION FY 2019 BUDGET REQUEST SUMMARY

Account	FY 2017 Enacted	FY 2018 CR Level	FY 2019 Request
Salaries and Expenses	\$729,444,000	\$724,490,000	\$737,944,000
Facilities Capital	<u>\$133,903,000</u>	<u>\$132,994,000</u>	<u>\$219,500,000</u>
Total	<u>\$863,347,000</u>	<u>\$857,484,000</u>	<u>\$957,444,000</u>

For fiscal year (FY) 2019, the Smithsonian's request to fund operating expenses and revitalization of the Institution's physical infrastructure is **\$957.4 million**. The total amount includes **\$737.9 million** for Salaries and Expenses (S&E) and **\$219.5 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

RESTORE FY 2018 UNDISTRIBUTED RESCISSION

- **Undistributed Rescission (+\$4,954,000)** — This budget request includes funding to restore the \$4,954,000 undistributed rescission in the FY 2018 Continuing Resolution (CR) Budget. The increase would bring the FY 2018 S&E funding back to the FY 2017 Enacted level.

FIXED COSTS INCREASES

- **Salaries and Related Costs (+\$171,000)** — This request funds the necessary increase for Workers' Compensation.
- **Non-pay Fixed Items (+\$3,329,000)** — 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

- **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 also allow for deferred life-cycle replacement of security equipment, and installation of barrier and bollard systems, and anti-terrorism mitigation systems. The increase will enable the Institution to address the significant maintenance backlog and make progress toward the minimum standards for annual maintenance budgets as endorsed by the Government Accountability Office and the National Research Council.

FACILITIES CAPITAL

The request for the Facilities Capital Program **(\$219,500,000)** is essential to stop 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 2019.

For FY 2019, the requested funds will enable the Institution to begin the major renovation project at the National Air and Space Museum (NASM, at \$127.0 million). The request will also continue major revitalization work at the National Museum of Natural History (\$3.5 million), the National Zoological Park (\$18.5 million), and the National Museum of American History (\$4.0 million). In addition, these funds will allow the Smithsonian to perform critical revitalization work at the NASM Steven F. Udvar-Hazy Center (\$10.0 million); National Museum of the American Indian (\$4.0 million); Cooper Hewitt, Smithsonian Design Museum (\$5.8 million); Smithsonian Environmental Research Center (\$2.0 million); Smithsonian Institution Building (Castle, at \$1.5 million); Smithsonian Tropical Research Institute (\$1.5 million); Smithsonian Astrophysical Observatory (\$0.85 million); Suitland Collections Center (\$4.0 million); and replace fire-alarm systems and upgrade mass-security notification at multiple facilities (\$4.0 million). The request also provides for critical revitalization projects throughout the Institution, program support, and projects costing under \$1 million each (\$15.85 million). Furthermore, this request accounts for planning and design of future projects (\$17.0 million). Details are provided in the Facilities Capital section of this budget request.

**SMITHSONIAN INSTITUTION
FY 2019 BUDGET SUMMARY**

SALARIES AND EXPENSES	FTEs	Amount
FY 2018 Continuing Resolution Level	4,225	\$724,490,000
RESTORE FY 2018 UNDISTRIBUTED RESCISSION		4,954,000
FIXED COSTS INCREASES	0	3,500,000
Salaries and Related Costs (Workers' Compensation)	0	171,000
Utilities, Rent, Communications, and Other	0	3,329,000
PROGRAM INCREASES	8	5,000,000
Facilities Maintenance	8	5,000,000
Total, FY 2019 Salaries and Expenses	4,233	\$737,944,000

FACILITIES CAPITAL	FTEs	Amount
Revitalization	48	202,500,000
National Air and Space Museum		127,000,000
Steven F. Udvar-Hazy Center		10,000,000
National Zoological Park		18,500,000
Cooper Hewitt, Smithsonian Design Museum		5,800,000
National Museum of American History		4,000,000
National Museum of Natural History		3,500,000
National Museum of the American Indian		4,000,000
Smithsonian Institution Building (Castle)		1,500,000
Smithsonian Tropical Research Institute		1,500,000
Smithsonian Astrophysical Observatory		850,000
Smithsonian Environmental Research Center		2,000,000
Suitland Collections Center		4,000,000
Multiple Facilities/Locations Projects		19,850,000
Facilities Planning and Design		17,000,000
Total, FY 2019 Facilities Capital	48	\$219,500,000

FY 2019 REQUEST, ALL ACCOUNTS	4,281	\$957,444,000
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**SMITHSONIAN INSTITUTION
SALARIES AND EXPENSES (S&E)
FY 2019 Request**

	FTEs	Amount
FY 2018 Continuing Resolution Level	4,225	724,490,000
Restore FY 2018 Undistributed Rescission		4,954,000
Fixed Costs Increases		
Salaries and Related Costs (Workers' Compensation)	0	171,000
Utilities, Postage, Rent, Communications, and Other	0	<u>3,329,000</u>
Total Fixed Costs Increases	0	3,500,000
Program Increases		
Facilities Maintenance	8	<u>5,000,000</u>
Total Program Increases	8	5,000,000
Total Increases	8	13,454,000
Total, FY 2019 Salaries and Expenses	4,233	\$737,944,000

SMITHSONIAN INSTITUTION
Salaries and Expenses
Unit Detail of the FY 2017 Enacted, FY 2018 Full-Year CR and the FY 2019 Request
(\$s in Thousands)

FTE = Full-Time Equivalent	FY 2017		FY 2018		FY 2019		ANALYSIS OF CHANGE					
	Enacted		Full-Year CR		Request		(FY 2019 Increases)					
	FTEs	\$000	FTEs	\$000	FTEs	\$000	Pay & Benefits \$000	Rent & Utilities \$000	Fixed Other \$000	Program Change FTEs	\$000	
MUSEUMS AND RESEARCH CENTERS												
25	National Air and Space Museum	151	19,853	151	20,110	151	20,110	0	0	0	0	0
31	Smithsonian Astrophysical Observatory	99	24,393	99	24,593	99	24,593	0	0	0	0	0
36	Major Scientific Instrumentation	0	4,118	0	4,118	0	4,118	0	0	0	0	0
23	Universe Consortium	1	184	1	184	1	184	0	0	0	0	0
42	National Museum of Natural History	335	49,205	335	49,789	335	49,789	0	0	0	0	0
51	National Zoological Park	208	27,252	208	27,566	208	27,566	0	0	0	0	0
59	Smithsonian Environmental Research Center	32	4,171	32	4,227	32	4,227	0	0	0	0	0
63	Smithsonian Tropical Research Institute	191	14,344	191	14,486	191	14,486	0	0	0	0	0
23	Biodiversity Consortium	3	1,530	3	1,543	3	1,543	0	0	0	0	0
71	Arthur M. Sackler Gallery/Freer Gallery of Art	45	6,197	45	6,273	45	6,273	0	0	0	0	0
76	Center for Folklife and Cultural Heritage	17	3,039	17	3,084	17	3,184	0	0	100	0	0
	<i>National Park Service Regulatory Compliance</i>									100		
81	Cooper Hewitt, Smithsonian Design Museum	36	5,005	36	5,061	36	5,086	0	25	0	0	0
	<i>Rent Escalation</i>								25			
85	Hirshhorn Museum and Sculpture Garden	37	4,627	37	4,534	37	4,544	0	10	0	0	0
	<i>Rent Escalation</i>								10			
90	National Museum of African Art	28	4,576	28	4,654	28	4,654	0	0	0	0	0
23	World Culture Consortium	2	792	2	792	2	792	0	0	0	0	0
95	Anacostia Community Museum	19	2,329	19	2,405	19	2,405	0	0	0	0	0
101	Archives of American Art	17	1,909	17	1,933	17	1,933	0	0	0	0	0
105	National Museum of African American History & Culture	165	41,564	145	33,079	145	33,079	0	0	0	0	0
116	National Museum of American History, Behring Center	163	24,916	164	25,373	164	25,373	0	0	0	0	0
124	National Museum of the American Indian	216	32,341	216	32,671	216	33,242	0	571	0	0	0
	<i>Federal Protective Service security in NYC</i>								571			
128	National Portrait Gallery	56	6,460	56	6,556	56	6,556	0	0	0	0	0
134	National Postal Museum	6	1,120	6	1,131	6	1,331	0	200	0	0	0
	<i>Federal Protective Service security in DC</i>								200			
138	Smithsonian American Art Museum	89	10,115	89	10,239	89	10,239	0	0	0	0	0
23	American Experience Consortium	4	596	4	550	4	550	0	0	0	0	0
Total for Museums and Research Centers		1,920	290,636	1,901	284,951	1,901	285,857	0	806	100	0	0

SMITHSONIAN INSTITUTION
Salaries and Expenses
Unit Detail of the FY 2017 Enacted, FY 2018 Full-Year CR and the FY 2019 Request
(\$s in Thousands)

Page #	FTE = Full-Time Equivalent	FY 2017		FY 2018		FY 2019		ANALYSIS OF CHANGE						
		Enacted	Full-Year CR	Request	Request	Pay & Benefits \$000	Rent & Utilities \$000	Fixed Other \$000	Program Change FTEs					
	MISSION ENABLING													
	<i>Program Support and Outreach</i>													
143	Outreach	64	9,214	64	9,333	64	9,333	0	0	0	0	0	0	0
148	Communications	22	2,632	23	2,839	23	2,839	0	0	0	0	0	0	0
151	Institution-wide Programs	0	14,784	0	14,784	0	14,784	0	0	0	0	0	0	0
158	Smithsonian Exhibits	28	3,057	28	3,169	28	3,169	0	0	0	0	0	0	0
161	Museum Support Center	18	1,890	18	1,906	18	1,906	0	0	0	0	0	0	0
163	Museum Conservation Institute	22	3,320	22	3,359	22	3,359	0	0	0	0	0	0	0
168	Smithsonian Institution Archives	20	2,316	20	2,423	20	2,423	0	0	0	0	0	0	0
170	Smithsonian Libraries	86	11,146	86	11,273	86	11,373	0	0	100	0	0	0	0
	<i>Subscriptions inflation</i>									100				
	Subtotal, Program Support and Outreach	260	48,359	261	49,086	261	49,186	0	0	100	0	0	0	0
174	Office of the Chief Information Officer	95	51,371	95	52,009	95	52,509	0	0	500	0	0	0	0
	<i>Communications</i>									500				
177	Administration	181	35,756	182	36,234	182	36,405	171	0	0	0	0	0	0
180	Office of the Inspector General	24	3,499	24	3,538	24	3,538	0	0	0	0	0	0	0
	Facilities Services													
182	Facilities Maintenance	395	76,327	401	77,045	409	82,045	0	0	0	0	8	5,000	5,000
186	Facilities Maintenance increase													
	Facilities Operations, Security, and Support	1,325	223,496	1,361	226,581	1,361	228,404	0	1,823	0	0	0	0	0
	<i>Central Utilities</i>									281				
	<i>Central Rent</i>									1,542				
	Subtotal, Facilities Services	1,720	299,823	1,762	303,626	1,770	310,449	0	1,823	0	1,823	0	8	5,000
	Total for Mission Enabling	2,280	438,808	2,324	444,493	2,332	452,087	171	1,823	600	8	5,000		
	SUBTOTAL, SMITHSONIAN INSTITUTION	4,200	729,444	4,225	729,444	4,233	737,944	171	2,629	700	8	5,000		
	Undistributed Rescission													
	GRAND TOTAL, SMITHSONIAN INSTITUTION	4,200	729,444	4,225	724,490	4,233	737,944	171	2,629	5,654	8	5,000		

-4,954

4,954

SALARIES AND EXPENSES

FY 2017 Enacted	729,444,000
FY 2018 Continuing Resolution Level	724,490,000
FY 2019 Request	737,944,000

For Fiscal Year (FY) 2019, the Institution requests **\$737.94 million** in the Salaries and Expenses (S&E) account. Within the total increase requested, approximately 63 percent is attributable to fixed costs for sustaining base operations (e.g., restore rescission, utilities, rent, etc.), and the remainder is for high-priority facilities maintenance requirements throughout the Institution.

RESTORATION OF FY 2018 UNDISTRIBUTED RESCISSION

- **Undistributed Rescission (+\$4,954,000)** — This budget request includes funding to restore the \$4,954,000 undistributed rescission in the FY 2018 Continuing Resolution (CR) Budget. The increase would bring the FY 2018 S&E funding back to the FY 2017 Enacted level.

FIXED COSTS

SALARY AND PAY-RELATED COSTS (+\$171,000) — The Institution requests an increase of \$171,000 for an increase in the Workers' Compensation program costs, as follows:

<i>Salary and Related Costs:</i>	<u>Request</u>
▪ Workers' Compensation	\$171,000

- **Workers' Compensation (+\$171,000)** — This supports the provisions of Section 8147(b) of Title 5, *United States Code*. The Workers' Compensation bill for FY 2019 is **\$3,191,000**, based on a Department of Labor invoice for costs incurred from July 1, 2016 through June 30, 2017. This represents an increase of \$171,000 from the prior-year cost of \$3,020,000 payable in FY 2018 for Workers' Compensation costs.

UTILITIES, POSTAGE, RENT, COMMUNICATIONS, AND OTHER FIXED COSTS (+\$3,329,000) — For FY 2019, the Institution requests an increase of \$3,329,000 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 FY 2018 and FY 2019 estimates. The details that follow address the specific changes affecting the FY 2019 accounts.

**Federal Utilities, Postage, Rent, Communications, and
Other Fixed Costs
FYs 2018–2019
(Dollars in Thousands)**

	FY 2018 Estimate	FY 2019 Estimate	Change
Utilities:			
Electricity	21,698	21,835	137
Chilled Water	2,947	3,083	136
Steam	8,180	8,607	427
Natural Gas	3,088	3,132	44
DC Gov't Water/Sewer	6,292	5,855	-437
Other Water and Fuel Oil	<u>1,231</u>	<u>1,255</u>	<u>24</u>
Subtotal, Utilities	43,436	43,767	331
Postage	1,511	1,461	-50
Motor Fuel	370	370	0
Rental Space:			
Central	39,988	41,530	1,542
Unit	<u>5,091</u>	<u>5,897</u>	<u>806</u>
Subtotal, Rent	45,079	47,427	2,348
Communications	18,874	19,374	500
Other Support	3,220	3,420	200
Total	\$112,490	\$115,819	\$3,329

UTILITIES (+\$331,000) — Justified here, but included in the Facilities Operations, Security, and Support line item, is a requested increase to cover the costs of energy and water. The request includes the following:

- **Electricity (+\$137,000)** — 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 cost increases in FY 2019 for current services for all accounts (+\$39,000) and a downward adjustment for lower-than-projected use in FY 2017 (-\$66,000). The request also funds electricity costs of the new Udvar-Hazy Dulles Collections Storage Module 1 (+\$59,000); the new Museum Support Center Pod 6 (+\$50,000); and three new facilities at the Smithsonian Tropical Research Institute (STRI) (+\$24,000). In addition, there are decreased reimbursements due to the closure of the National Museum of Natural History's Atrium Cafe for eight months during construction (+\$31,000)
- **Chilled Water (+\$136,000)** — 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. The net increase reflects a rate increase of 2.3 percent in FY 2019 (+\$144,000), as well as anticipated increased reimbursements (-\$8,000).
- **Steam (+\$427,000)** — 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 Energy Savings Performance Contracts (ESPCs) (+\$44,000), FY 2019 increased usage at the National Museum of Natural History due to inefficiencies caused by premature HVAC equipment obsolescence (+\$379,000), and increased reimbursements due to the opening of the new Hirshhorn Museum Cafe (-\$3,000). In addition, there is a projected rate increase (+2.3 percent) for New York City facilities (+\$7,000).
- **Natural Gas (+\$44,000)** — The Smithsonian uses natural gas and propane for heating and generating steam. The request covers cost increases for rates in FY 2019 (+\$21,000). The request also funds natural gas costs of the new Udvar-Hazy Dulles Collections Storage Module 1 (+\$16,000) and decreased reimbursements due to the closure of the National Museum of Natural History's Atrium Cafe for eight months of construction (+\$7,000).
- **DC Water and Sewer (-\$437,000)** — Funds cover the costs of both water and sewer services provided by the District of Columbia Water and Sewer Authority (DCWSA). The net decrease includes rate and billing adjustments transmitted by DCWSA to the Smithsonian in April of 2017 (-\$453,000), as well as anticipated increased reimbursements in FY 2019 due to higher rates (-\$8,000). In addition, there are decreased reimbursements due to the closure of the National Museum of Natural History's Atrium Cafe for eight months of construction (+\$24,000).

- **Other Water and Fuel Oil (+\$24,000)** — 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 (+2.3 percent) in FY 2019 for current services for all water accounts (+\$14,000) and a 4.4 percent payment escalation in the Suitland, Maryland ESPC contract (+\$10,000).

POSTAGE (-\$50,000) — Funds provide for all official domestic and international mail services. The request is a decrease of \$50,000 for postage in FY 2019.

MOTOR FUEL — Funds provide for motor fuel that powers the Smithsonian’s motor vehicle fleet and scientific research vessels. No increases are requested for motor fuel in FY 2019.

RENTAL SPACE (+\$2,348,000) — Funds provide for the long-term rental of office, collections and warehouse storage, and laboratory space. For FY 2019, the Smithsonian requests an increase of \$2,348,000 for centrally funded lease requirements and for unit-funded, programmatic lease requirements, as follows:

- **Central Rent (+\$1,542,000)** — 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 (+\$1,542,000) — 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 2018 estimates.

- **Unit Rent (+\$806,000)** — Justified here, but included in the following museums’ line items, are unit-funded rent and operating cost increases needed to support Smithsonian programs. The increases are as follows:

Escalation (+\$35,000) — Provides funding for the annual escalation of contractual lease costs and lease-related services. The requested increase supports leased space occupied by Cooper Hewitt, Smithsonian Design Museum (+\$25,000) and the Hirshhorn Museum and Sculpture Garden (+\$10,000).

National Postal Museum Operating Expenses (+\$200,000) — This request is a must-fund increase that is paid to the Federal Protective Service for required security protection at the Postal Square Building in Washington, DC. This facility houses many federal agencies and is home to the Smithsonian’s National Postal Museum.

Heye Center Operating Expenses (+\$571,000) — This request is a must-fund increase that is paid to the Federal Protective Service for required security

protection at the U.S. Custom House in New York City. This facility houses the United States Bankruptcy Court and is also home to the Smithsonian's National Museum of the American Indian's George Gustav Heye Center.

COMMUNICATIONS (+\$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.

These systems include Enterprise Resource Planning; 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 at the National Museum of African American History and Culture; and the personnel records management system. The requested increases will enable systems to stay current and cover rising annual maintenance and operating costs, 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 the annual recurring cost for a network connection to the new STRI lab in Gamboa, Panama.

OTHER SUPPORT (+\$200,000) — An additional \$200,000 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 (+\$100,000). This increase will enable the Libraries to cover the extraordinary inflation costs of purchasing journals and electronic databases, which are critical to support the Institution's many research programs and scientists.

In addition, the Institution requests an increase (+\$100,000) to support the Smithsonian Folklife Festival's compliance with new regulations instituted by the National Park Service 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 2019 S&E PROGRAM INCREASES

<u>Category</u>	FY 2019 Program Increase (\$000s)	FY 2019 FTEs Increase
PRESERVE OUR NATURAL AND CULTURAL HERITAGE		
• Facilities Maintenance	+5,000	+8
Total Increase	+\$5,000	+8

Facilities Maintenance — Base: (\$77,045,000); FY 2019 Increase: (+\$5,000,000, +8 FTEs)

For FY 2019, the Smithsonian requests an increase of \$5.0 million and 8 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 2019 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 at the end of FY 2017 was \$8.1 billion. This includes the new National Museum of African American History and Culture. This would equate to a minimum need of \$160 million a year. With this requested increase, the Institution would be at \$82 million, one-half of the required 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 a minimal level of preventive maintenance and building system reliability to ensure that proper environmental conditions are maintained for the national collections and that public expectations are met. The increase will also allow for deferred life-cycle replacement of security equipment, improved barrier and bollard systems, and anti-terrorism mitigation systems.

NO-YEAR FUNDING — The following table provides the FY 2018 and FY 2019 Salaries and Expenses requests for No-Year Funding.

No-Year Funding Request
(Dollars in Thousands)

Salaries and Expenses	FY 2018 CR Level	FY 2019 Request	Change from FY 2018
No-Year Funds			
National Museum of Natural History			
Exhibition Reinstallation	954	954	0
Repatriation Program	1,410	1,410	0
Major Scientific Instrumentation	4,118	4,118	0
Collections Acquisition	435	435	0
Total, No-Year Funds	\$6,917	\$6,917	\$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 2018 CR Level	FY 2019 Request	Change from FY 2018
Salaries and Benefits	443	446	+\$3
Travel and Transportation	7	7	0
Rent, Utilities, Communications, and Other	100	104	+\$4
Other Services	131	137	+\$6
Supplies and Materials	21	22	+\$1
Equipment	19	19	0
Land and Structures	3	3	0
Total, Object-Class Funds	\$724	\$738	+\$14

FEDERAL RESOURCE SUMMARY BY PERFORMANCE OBJECTIVE AND PROGRAM CATEGORY

The Smithsonian has developed its FY 2019 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 2018 and FY 2019 estimates and the proposed changes by strategic goal, performance objective, and program category.

FY 2019 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 2018		FY 2019		Change		Pay	Rent/ Utilities	Other Fixed	Program Increase	Program Realignment		Total Change		
	FTEs	\$000	FTEs	\$000	FTEs	\$000					\$000	\$000	FTEs	\$000	FTEs
Enhanced Research	571	94,708	571	94,385	0	-323	0	0	100	0	0	0	-423	0	-323
Expand Digital Technologies	86	15,507	86	15,511	0	4	0	0	0	0	0	0	4	0	4
Impact 21st Century Audiences	712	101,367	712	99,782	0	-1,585	0	0	100	0	0	0	-1,685	0	-1,585
Preserve Our Cultural Heritage	2,275	383,255	2,283	390,872	8	7,617	0	2,629	0	8	5,000	0	-12	8	7,617
<i>Collections</i>	443	69,815	443	69,838	0	23	0	0	0	0	0	0	23	0	23
<i>Facilities and Safety</i>	1,090	235,920	1,098	243,514	8	7,594	0	2,629	0	8	5,000	0	-35	7	7,594
<i>Security</i>	742	77,520	742	77,520	0	0	0	0	0	0	0	0	0	1	0
Enable Responsive Administration	581	134,607	581	137,394	0	2,787	171	0	500	0	0	0	2,116	0	2,787
<i>Management Operations</i>	479	90,191	479	92,793	0	2,602	171	0	0	0	0	0	2,431	0	2,602
<i>Information Technology</i>	102	44,416	102	44,601	0	185	0	0	500	0	0	0	-315	0	185
TOTAL	4,225	729,444	4,233	737,944	8	8,500	171	2,629	700	8	5,000	0	0	8	8,500

Federal Resources by Performance Objective and Program Category						
Salaries and Expenses (\$s in thousands)						
Performance Objective and Program Category	FY 2018		FY 2019		Change	
	FTEs	\$000	FTEs	\$000	FTEs	\$000
Enhanced Interdisciplinary Research	571	94,708	571	94,385	0	-323
Research						
Engage in impactful scientific research and discovery	436	71,796	436	71,791	0	-5
Engage in vital arts and humanities research	135	22,912	135	22,594	0	-318
Expand Digital Technologies	86	15,507	86	15,511	0	4
Digitization and Web Support						
Provide improved digitization and Web support	86	15,507	86	15,511	0	4
Understand and Impact 21st Century Audiences	712	101,367	712	99,782	0	-1,585
Public Programs						
Provide relevant reference services and disseminate information to the public	128	18,871	128	18,863	0	-8
Exhibitions						
Offer compelling, first-class exhibitions	425	61,900	425	60,321	0	-1,579
Education						
Engage and inspire diverse audiences	159	20,596	159	20,598	0	2
Preserve Our Natural and Cultural Heritage	2,275	383,255	2,283	390,872	8	7,617
Collections						
Improve the stewardship of the national collections	443	69,815	443	69,838	0	23
Facilities and Safety						
Improve Smithsonian facilities operations and provide a safe and healthy environment	689	158,875	689	161,469	0	2,594
Deliver an aggressive and professional maintenance program	401	77,045	409	82,045	8	5,000
Security						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	742	77,520	742	77,520	0	0
Enable Cost-Effective and Responsive Administration	581	134,607	581	137,394	0	2,787
Management Operations						
Enable efficient and responsive administrative infrastructure	479	90,191	479	92,793	0	2,602
Information Technology						
Improve the Institution's information technology systems and infrastructure	102	44,416	102	44,601	0	185
TOTAL	4,225	729,444	4,233	737,944	8	8,500

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 2017 ENACTED	10	3,102	0	0	0	0	0	0
FY 2018 ESTIMATE	10	3,069	0	0	0	0	0	0
FY 2019 REQUEST	10	3,069	0	0	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		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	550	4	550	0	0
Total	10	3,069	10	3,069	0	0

BACKGROUND AND CONTEXT

The Smithsonian's Strategic Plan articulates the five Grand Challenges which provide an overarching strategic 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. The Smithsonian uses the Grand Challenges to present the

high-level view of the Strategic Plan in the budget. 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 2019 budget request includes no increase. Below is a summary of the FY 2019 Grand Challenges budget.

Grand Challenges	FY 2018 CR Base \$000s	FY 2019 Request \$000s
Universe	184	184
Biodiversity	1,543	1,543
World Cultures	792	792
American Experience	550	550
Total	\$3,069	\$3,069

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 2017 ENACTED	151	19,853	55	5,778	37	8,211	5	1,054
FY 2018 ESTIMATE	151	20,110	66	23,192	32	9,147	5	969
FY 2019 REQUEST	151	20,110	72	64,611	32	9,109	5	219

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
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						
Digitization and Web Support						
Provide improved digitization and Web support	2	367	2	367	0	0
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	15	1,714	15	1,714	0	0
Exhibitions						
Offer compelling, first-class exhibitions	28	3,177	28	3,177	0	0
Education						
Engage and inspire diverse audiences	7	1,000	7	1,000	0	0
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	45	4,537	45	4,537	0	0
Facilities and Safety						
Improve Smithsonian facilities operations and provide a safe and healthy environment	2	318	2	318	0	0
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	13	3,036	13	3,036	0	0
Information Technology						
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 research and outreach activities serve multiple audiences within and beyond its walls. The Museum commemorates the past and is committed to educating and inspiring people to appreciate the importance of flight to humanity.

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 Collection Center, adjacent to the UHC, is currently under construction, and when completed in early 2019, will provide state-of-the-art storage for the NASM collections. NASM provides access to the nation's aviation and spaceflight history to an average of nine million on-site guests from all parts of the globe each year, making it one of the most visited museum in the world. In addition, NASM draws tens of millions of virtual guests to its website and broadcast/webcast educational programming.

In FY 2018, NASM is continuing to collect and preserve the nation's aviation and space artifacts, as well as archival material, and to perform original research and provide reference support in aviation and space history and planetary science. These activities support its broad array of exhibitions, programs, publications, and outreach initiatives. 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, 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 its new identity is a seamless visitor experience that takes the on-site encounter and extends its reach beyond the walls of the Museum.

The primary focus for the Museum in FYs 2018-2019 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 move and treat more than 4,000 artifacts. The first of these artifacts have already been moved through the Restoration Hangar and Conservation Lab for treatment, with treatment of 100 completed. To support the revitalization schedule, in late-FY 2018, NASM is on track to close some public areas and begin deinstalling several exhibits located primarily at the west end of the Museum. In addition, the flight simulators will be relocated. A successful, temporary, pop-up Museum shop, introduced at the east end of the Museum, will be enlarged/enhanced to offset the disruption to the main Museum shop during building renovations.

MEANS AND STRATEGY

Public Engagement — NASM continues to reach diverse audiences through exhibitions, educational programming, research reference support, publications, and electronic outreach. In FY 2018, we continue to use our transformation as an opportunity to refine and strengthen NASM’s educational role throughout the Museum and the world. Senior leadership has developed and aligned the staff around a long-term vision and strategy, has identified best practices, and is designing and executing a national museum education strategy that will, in the next 20 years, “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 creating and sharing high-quality education content aligned with national education priorities.

In FY 2018, NASM is targeting middle-school math and science teachers nationally to improve confidence and capabilities in teaching STEAM topics by developing an education portal. We want to reach out to local and tourist families to create exciting and fun experiences for youth, and build lifelong relationships with adults, via programs and exhibits.

NASM staff and volunteers continue to provide a variety of Museum programs, from daily activities such as docent-led tours, lectures, and science demonstrations which reach hundreds of thousands of guests annually, to big Family Day events that can reach 20,000 to 50,000 diverse visitors at one event. In the past year alone, the Museum has hosted eight Family Days, with a total of more than 107,000 guests, displayed the Mars Rover Prototype, which drew more than 100,000 guests and hosted a live downlink with astronaut Randy Bresnik at the International Space Station, with more than 700 students from Washington, DC, Virginia, and around the nation. Through our *STEM in 30* programming, NASM has reached more than one million viewers. Our astronomy programs, which include the Public Observatory and educational programming in the planetarium, also remain an important component of STEAM education.

NASM 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 follow up on initial online research efforts. In FY 2018, we are developing a digitization roadmap for the Museum, and our photographers will be capturing high-resolution images for the 3,300 artifacts being placed in our new exhibits so that we can use them for public engagement. These will be added to

the thousands of images of NASM artifacts already available online and archival materials not currently on display or otherwise available to the public.

NASM is reimagining itself by establishing an Innovation Lab that is looking at unique ways to provide high-quality experiences for the visitor at the building or at a remote site. The lab's goal is to generate and test new ideas, products, and processes that are experience-driven and guest-centric, while remaining agile in execution. In FY 2018, the Lab successfully launched a *VR Hanger App*, which leverages 3D scanning data from the inside of the Wright Flyer, Bell X-1 and Apollo 11 command capsule, *Columbia*, to give users an immersive virtual reality experience. In 2019, the lab will expand its pursuits, looking at processes for Design Thinking to draw visitors into the exhibit development process.

Exhibitions — In FY 2018, the Museum continues to ensure stewardship of and access to its 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 transformation, nine West-end exhibit teams in the NMB are completing the designs and will award a production contract for the galleries in FY 2019. These include the exhibits: *Early Flight*, *Reinventing Flight*, *A Nation of Speed*, *Exploring the Planets*, *America by Air*, *We All Fly*, *Destination Moon*, *Wright Brothers* and *One World Connected*. In addition, design of exhibits for the East-end galleries will start and the design contract to improve wayfinding and signage in the common areas will be awarded.

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), has 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. The last time the *Columbia* traveled the United States was in 1970. Now, almost 50 years later, the historic spacecraft that helped take us to the moon and back is once again on a nationwide tour. The tour launched on October 14, 2017 at Space Center Houston and will continue to the St. Louis Science Center and the Heinz History Center in 2018. In 2019, *Destination Moon* will head to the Museum of Flight in Seattle, where it will be displayed for the 50th anniversary of the moon landing, before returning to NASM for its permanent display in the new exhibition *Destination Moon*.

NASM recently completed a year-long study of its exhibit maintenance program, refining the levels of service, roles, responsibilities, and future staffing requirements. The Museum identified both efficiencies and some shortcomings that will be addressed to adequately maintain the new post-transformation exhibits.

Collections — NASM plans to enhance collaboration with private collectors and other Smithsonian museums by requesting loans of key artifacts to help share with the public 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.

The proper handling of artifacts will be the biggest challenge throughout revitalization of the NMB and transformation of NASM exhibits. NASM has more than 4,000 artifacts affected during these moves. The reimagined NMB exhibits will require artifact moves from multiple locations such as Garber, UHC, as well as the NMB, and will also include the return of 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 artifacts not currently on display at the NMB. Approximately 2,000 of the artifacts presently in the NMB are not coming back into the building. Some will go into long-term storage in the new Dulles Collections Center Storage Module or be exhibited at UHC. Many of the artifacts will require some type of preservation or conservation efforts, and the collections staff has evaluated 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 dozens of artifacts already moved, treated, or in treatment.

NASM will continue the relocation of artifacts from outdated, inadequate storage facilities at the Garber site to the UHC, including documentation, digital imaging, re-housing, and select conservation as appropriate to the object. In FY 2017, NASM reached the milestone of having moved 50 percent of the artifacts previously stored at Garber, but will soon reach the capacity of available storage at the UHC.

Facilities — The Smithsonian Institution has started construction of a state-of-the-art storage module at the Dulles Collection Center adjacent to UHC, which is expected to be completed in mid-January 2019. This building will serve as swing space for storing artifacts from the NMB as the Museum undertakes construction. In 2024, after completion of the NMB revitalization, this storage module will support the continued move of artifacts from the Garber facilities.

Much of FY 2018 is focused on the final planning, staffing, and mobilization for the NMB Revitalization. The Museum has an ongoing monthly program to clean, scan and pack up offices, which facilitated the relocation of the advancement team to Capital Gallery. The NMB Revitalization design was completed in January 2018. Smithsonian Facilities plans to negotiate the final costs of the construction and issue a Notice-to-Proceed in the summer of 2018.

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 Express, Mars

Reconnaissance Orbiter, Lunar Reconnaissance Orbiter, Mars Science Laboratory, 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 expertise, the archives and curatorial staff will continue to evaluate potential acquisitions for the national collections and respond to 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 engaging in impactful and significant engagement and discussion, producing an average of more than 50 peer-reviewed publications each year.

Management — NASM will pursue the strategic goal of Enabling Cost-Effective and Responsive Administration. In FY 2017, NASM updated its 2015-2025 Strategic Plan to emphasize education and digitization. In FY 2018, leadership is reviewing workload and staffing requirements and human capital capabilities through an update to the FY 2016 strategic workforce planning efforts. Transformation of the Museum includes periodic reviews of NASM's organizational alignment and continued refinement of business processes, and development of analytical tools to assess progress in achieving the Museum'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 at the Museum shops and a reduced number of guests during these activities. Demonstrating a commitment to responsible and sound financial management, NASM paid off the debt in full for the Steven F. Udvar-Hazy Center in FY 2017, a full 14 years ahead of schedule.

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2017 ENACTED	99	24,393	103	21,814	8	5,825	208	77,590
FY 2018 ESTIMATE	99	24,593	108	24,773	10	8,824	216	66,249
FY 2019 REQUEST	99	24,593	108	24,773	10	8,824	216	66,249

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		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	160	0	0
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	24,593	0	0

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 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; the 6.5-meter diameter Multiple Mirror Telescope (MMT); the Very Energetic Radiation Imaging Telescope Array System (VERITAS); and related telescopes at the Fred Lawrence Whipple Observatory in Arizona. 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, and the Solar Dynamics Observatory); 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 Harvard-Smithsonian Center for Astrophysics.

For more than 60 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 recognition that its researchers receive from leading scientific organizations. For instance, senior SAO scientist Dr. Margaret Geller was recognized with an honorary degree by the University of Turin. SAO young scientist Dr. Ilse Cleeves won the American Astronomical Society (AAS) Annie Jump Cannon Award (also won by SAO scientist Dr. Laura Lopez in 2017). Dr. Michael McCarthy has been invited to give one of only six presentations during FY 2018 in the Distinguished Lecture Series in the Directorate for Mathematical and Physical Sciences at the NSF.

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.

In a measure of just how highly regarded the work of the Observatory staff is, the AAS named SAO scientist Christine Jones-Forman as its president for 2016–2018.

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, and NASA's Solar Dynamics Observatory. 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. 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 leading the development of the international Event Horizon Telescope, which will draw 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 hole at the center of the Milky Way Galaxy. SAO is 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 began coming online in 2017. This radio observatory will play a crucial role in operating the Event Horizon Telescope when it turns its attention to the even more massive black hole in the galaxy 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.

In addition, SAO team delivered a major instrument to NASA for launch on the Solar Probe Plus 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 has any previous scientific instrument.

NASA selected SAO's mission proposal Arcus for a Phase A study. Arcus, if it is selected for launch, will study the extremely hot medium between the galaxies that scientists believe contains most of the hydrogen and helium in the universe. SAO also plays a leading role in the competing study, SphereX, led by the Jet Propulsion Laboratory.

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.

SAO will achieve the strategic goal of 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 2017 ENACTED	0	4,118	0	0	0	0	0	0
FY 2018 ESTIMATE	0	4,118	0	0	0	0	0	0
FY 2019 REQUEST	0	4,118	0	0	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		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 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."

To achieve the strategic goal of Enhanced Interdisciplinary Research, 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 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 2019 MSI line item: the Greenland Telescope; the Submillimeter Telescope Array (SMA) on Mauna Kea, Hawaii; and Advanced Telescope Instrumentation for the converted Multiple Mirror Telescope (MMT) at SAO's Fred L. Whipple Observatory at Mt. Hopkins, Arizona.

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 recognition that its researchers receive from leading scientific organizations. For instance, senior SAO scientist Dr. Margaret Geller was recognized with an honorary degree by the University of Turin. SAO scientist Dr. Ildred Cleeves won the American Astronomical Society (AAS) Annie Jump Cannon Award (also won by SAO scientist Dr. Laura Lopez in 2017). Dr.

Michael McCarthy has been invited to give one of only six presentations during FY 2018 in the Distinguished Lecture Series in the Directorate for Mathematical and Physical Sciences at the National Science Foundation (NSF).

In a measure of just how highly regarded the work of the Observatory staff is, the AAS named SAO scientist Christine Jones-Forman as its president for 2016 –2018.

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 and the MMT, and the National Aeronautics and Space Administration's (NASA) space-based facilities, including the Chandra X-ray Observatory, the Spitzer Space Telescope, and the Solar Dynamics Observatory. 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)

SAO, in partnership with the NSF Division of Polar Programs, has identified 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 Division of Polar Programs is redeveloping the Greenland Summit Station to better isolate current clear air and snow research from other activities. The development of astronomical activities at the site is a key element of redevelopment plans. Retrofitting and commissioning of the telescope, which was transferred to SAO from NSF Astronomy, is being undertaken 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.

Significant funding for instrument development for the telescope is being provided by external partners, including the international academic community. 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 will form 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 will connect the antenna with the SMA to make unprecedented observations of the event horizon of the supermassive black hole at the heart of the giant galaxy M87.

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

The SMA is a pathfinder instrument operating between radio and infrared wavelengths, and will have a major impact in exploring the cool universe. In recent years, scientific studies have continued to focus on the study of the distant universe, high-energy phenomena, 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 during the coming year.

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 will join the Event Horizon Telescope once it is established in Thule, and will enable key observations of the black hole at the center of the galaxy M87.

The capacity to conduct a particular scientific observation with the SMA is directly dependent 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 instrumentation 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 enhancements depends on the operational model of the array.) Funds are requested in FY 2019 to enable the array to become 6–12 times more sensitive, a significant step toward the full enhancement.

Advanced Telescope Instrumentation for the Multiple Mirror Telescope (\$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 a series of increasingly sophisticated instruments to exploit the MMT's potential, starting with Megacam in 2003 and most recently with the just-commissioned instrument, Binospec.

SAO expects Binospec to be 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 will enable 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 will help attract 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 the SAO astronomical community 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 soon-to-be-launched 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 has been designed to find and characterize the oldest stars in the Milky Way and nearby galaxies— by detecting fossil residue of the processes that formed the structure of the universe we live in today. G-CLEF will also be used to search for planets orbiting stars other than the sun that are “Earth Twins,” 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 detect breathable diatomic oxygen in exoplanet atmospheres. 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 2019, MSI funds will be used to complete the commissioning of Binospec and enable its transition to full scientific operations. Additionally, MSI funds will 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 & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2017 ENACTED	335	49,205	34	5,665	51	15,721	11	1,841
FY 2018 ESTIMATE	335	49,789	34	5,780	51	16,800	11	1,925
FY 2019 REQUEST	335	49,789	34	5,850	51	16,950	11	1,950

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in impactful scientific research and discovery	111	17,305	111	17,305	0	0
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	4	495	4	495	0	0
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	14	1,743	14	1,743	0	0
Exhibitions						
Offer compelling, first-class exhibitions	50	7,048	50	7,048	0	0
Education						
Engage and inspire diverse audiences	30	3,553	30	3,553	0	0
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	91	14,622	91	14,622	0	0
Facilities and Safety						
Improve Smithsonian facilities operations and provide a safe and healthy environment	4	842	4	842	0	0
Security						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	1	181	1	181	0	0
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	15	1,764	15	1,764	0	0
Information Technology						
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 critical 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 nearly 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 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.

The National Cancer Institute relies upon the NMNH as a trusted repository for plant specimens that must be kept as vouchers for pharmacological and biomolecular research. Similarly, the U.S. Department of the Interior Bureau of Ocean Energy Management relies on the NMNH as a trusted repository for the ecologically significant invertebrate animals it collects in the course of its research. Meteorites collected from Antarctica are deposited at the NMNH by the Johnson Space Center and the National Aeronautics and Space Administration (NASA).

In the area of law enforcement, the Federal Bureau of Investigation benefits from the identifications and analyses conducted by experts in the Department of Anthropology, who consult the human skeletal collections when providing answers about the remains of crime victims. In the area of public health, analyses of the collections have provided vital clues about the spread of H5N1, the Avian Flu virus, the Zika virus, and the etiology of past influenza epidemics.

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 2017, the Museum hosted more than six 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 nearly 15 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.

A combination of federal and private funding will be used in FYs 2018 and 2019 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.

In FY 2019, 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; 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 2019 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 2019 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.

In FYs 2018 and 2019, the *Deep Time* exhibit will continue. The Deep Time Initiative team has made significant progress on inter related goals which include the major exhibition opening on June 8, 2019, a rich array of educational programs and learning opportunities, planning two major scientific symposia, and conducting exciting field research. The renovation of the historic Fossil Halls is essentially complete and ahead of schedule, from the energy-efficient new skylight down to the gleaming terrazzo floors. Exhibit fabrication is fully under way and the first murals and specimens are being installed. 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 effort demonstrates how the Museum is successfully combining federal funding with its own philanthropic fund raising from private sources.

Narwhal, Revealing an Arctic Legend, opened in August of 2017 and will run through FY 2019. It features life-sized narwhal models, real tusk specimens,

hands-on explorations, and traditional knowledge and objects gathered in close cooperation with Inuit tribal elders and hunters.

Outbreak! Epidemics in a Connected World will open in May of 2018, and will examine the ways infectious diseases reveal an intricate interconnectedness of humans, animals, their environments, and microbes. It will explore why infectious diseases emerge where they do, how they spill over from animals to people, why they can amplify and spread so quickly, and where to look for the next outbreak. This exhibit will draw on the combined expertise of Smithsonian biologists, anthropologists, and National Zoo veterinarians. To maximize the global impact of *Outbreak*, the Museum hopes to design a second version of the exhibition that communities can display in hospitals, libraries, train stations, coffee shops and other venues around the world. This smaller exhibition will be distributed free of charge, worldwide, in partnership with respected public health institutions. Finally, in FY 2018, the NMNH opened a new *Garden Lounge* that serves as a welcoming interior garden rest and recharge area for visitors. It features live plants and a relaxing atmosphere with botany content as a theme. Bright sunlight, enhanced seating, and designated outlets for charging mobile devices welcome visitors to the space.

The Museum also has several new exhibits under development, which will be on display in FY 2019. *Sea Monsters Unearthed* opens in November of 2018. The exhibition will focus 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 will display 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 discussion, film series, and/or hands-on workshops.

In FY 2019, 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.

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 2019, 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.

Also, in FY 2019, 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 2019, 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 Scientist Is In” and “The Artist 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, Mount St. Helens Day, Pollinator Week, the Orchids Festival, the Environmental Film Festival, Boy Scout Day, the Innovation Festival, and the Smithsonian-wide National Math Festival.

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 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, development 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 includes securing donations from special events to promote new exhibitions and educational initiatives, and 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 2019, 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. To reach its goals, the GGI is strategically cultivating partnerships to collect, preserve and understand Earth's genomic diversity. This will be completed through the Global Genome Biodiversity Network (GGBN) biorepositories, GGI Gardens (a growing international network of 11 gardens, led by GGI), genome-sequencing projects and initiatives, and Government organizations which share the GGI's mission. The GGI is collaborating with large-scale sequencing initiatives such as i5K, the Earth Biogenome Project, and Genome10K to achieve the GGI's objectives through support of new genome projects. The GGI is also supporting collections projects in collaboration with the Royal Botanic Garden Kew, the Monterey Bay Aquarium Research Institute, the Bureau of Ocean Energy Management, and the Smithsonian's ForestGEO and Tennenbaum Marine Observatories Network. In addition, the GGI will continue to train the next generation of scientists through two new GGI Buck supported Fellowships and the continued mentorship of six GGI interns working on genome or GGI Gardens collections projects. Publication of results from GGI's 16 ongoing genome-scale research projects will begin in FY 2018 and continue through FY 2019.

In FY 2019, 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 2019, grant funding will support collaborative research in studies related to the tropicalization of western Atlantic seagrass beds, the Bird Aircraft Strike Hazard (BASH) Program, and Healthy Reefs for Healthy People.

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 2017 ENACTED	208	27,252	13	8,759	44	9,056	16	2,156
FY 2018 ESTIMATE	208	27,566	25	8,963	35	6,641	11	2,398
FY 2019 REQUEST	208	27,566	32	9,075	40	7,276	8	1,978

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		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	6,396	0	0
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	27,566	0	0

BACKGROUND AND CONTEXT

In FY 2019, the Smithsonian's National Zoological Park and Conservation Biology Institute (NZP/SCBI) will almost fully implement its strategic plan, *Our Plan to Save Species*. With the strategic plan as the roadmap, the focus in FY 2019 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. To date, in FY 2017, there have already been 10 cubs from two litters. 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 also 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 2017, the NZP leveraged increased 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.

FY 2017 saw a slight decrease in collection animals at the National Zoo (from 3,313 to 3,134 collection specimens). The decrease is due in part to the planned reduction of the Bird House collection in preparation for creation of the new exhibit, *Experience Migration*. Significant mammal additions in FY 2017 and expectations for FY 2018 include a male Asian elephant, a baby gorilla, clouded leopards, and cheetahs. 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 welcomes more than two million visitors every year. Beginning in FY 2017, the Zoo expanded its on-site efforts to engage visitors in unexpected ways, using temporary exhibits and art installations. For example, to raise awareness of SCBI's research and conservation work, the Zoo installed an exhibit in its Visitor Center that profiled individual scientists who work to study, care for, and save species and habitats across the globe. The conservation programs are presented in SCBI scientists' own words, sharing their personal stories on species and habitat protection.

Another highlight of FY 2017 was a collaboration with local arts non-profit CulturalDC to install Washington, DC's first mobile art gallery at the Zoo. This temporary gallery, created from a 40-foot shipping container, featured a contemporary art exhibit inspired by the impact of invasive insect species on the North American landscape. This art installation had a direct connection to the work of SCBI ecologists who study how ecosystems and the species within them respond to global changes. As Washington, DC has a rich and diverse artistic and cultural scene off the Mall, collaborating with CulturalDC offered the Zoo a powerful way to reach new audiences in the nation's capital and directly answered Smithsonian Secretary David Skorton's call to strengthen the Smithsonian's connection to its local community. Furthermore, this partnership provided the Zoo with an opportunity to increase visitation during its annual holiday lights festival, ZooLights, with a new audience and leverage the local outreach potential by connecting science and art.

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 2017, the Zoo launched an 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, during FY 2017, NZP/SCBI advanced its digital sign program throughout the Park. Digital signs accomplish multiple goals, one of which is to provide an early warning system for events that need to be communicated quickly, such as adverse weather conditions, an escaped animal, or other security incidents in the Park. 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 is upgrading one of its most popular exhibits and bringing 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. The naked mole rat exhibit at the Small Mammal House has not been renovated since the 1990s, so the Zoo is completely replacing the habitat and interpretation in this exhibit to improve the visitor experience and bring the public "closer" to this amazing species. As part of this upgrade, the Zoo will also install a webcam to allow online visitors to enter the fascinating world of the naked mole rat.

Even more visitors come through NZP/SCBI's new, active website. Since the beginning of FY 2017, the NZP/SCBI website experienced 21 million page views during 10 million sessions — five times the number of in-person visitors in the Park. In FY 2017, NZP webcams were viewed nearly five million times by more than one million people. One year after launching an award-winning new 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 have a more robust webcam program for the public in the near future,

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 1.1 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 2017 includes in-depth videos on key conservation programs, including Asian elephants, scimitar-horned oryx, amphibians 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 four years, volunteers have captured more than two million wildlife images which have been checked by experts and deposited within a Smithsonian digital repository. This program 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.

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. FY 2016 marked the completion of the design phase for this first-of-its-kind Zoo attraction that immerses visitors in birds' miraculous annual journeys. 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. In FY 2017, the Bird House and surrounding area was closed to the public and the collection transferred to various suitable locations so that construction can safely begin in FY 2018.

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.

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 NZP/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 NZP/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 & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2017 ENACTED	32	4,171	10	1,134	15	2,489	41	5,150
FY 2018 ESTIMATE	32	4,227	33	3,750	23	3,800	13	1,950
FY 2019 REQUEST	32	4,227	33	3,750	23	3,800	13	1,950

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		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
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	32	4,227	0	0

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 2018, SERC has been revisiting and updating its 2008 Facilities Master Plan, the goal of which is to address the remaining elements of the 2008 plan and revisit the site priorities. In FY 2018, SERC completed work on its 1.5-mile entrance to the main campus, which was critical for the safe travel of staff and visitors in passenger vehicles and school buses. In addition, in FY 2018, if funds permit, SERC will implement the next phase of the master plan, including design of the Information Commons that will be the Institution's first "Net-zero energy" building. Other projects include developing a campus-wide storm-water management plan (in progress), design of the Green Village to provide more housing for a growing number of visiting and collaborating scientists and students (in progress), and much-needed new support facilities for the Smithsonian Facilities staff (in progress).

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. SERC is a partner site in the National Ecological Observation Network (NEON). To support that research,

SERC provides a home for a sampling tower 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.

During the next few years, 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 is 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 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. In addition to 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 critical infrastructure improvements and allow for controlled and operationally sustainable growth during the next decade. One of the key components of the plan is the focus on reducing energy and water consumption across the campus. The incorporation of sustainable improvements at the campus 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.

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 critical operating support related to specific programs and projects in research, public education, and professional training. Most of SERC's scientific research program of \$5.5 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 2017 ENACTED	191	14,344	45	2,624	26	3,846	21	1,850
FY 2018 ESTIMATE	191	14,486	50	2,500	32	4,000	21	1,251
FY 2019 REQUEST	191	14,486	50	2,500	32	4,000	18	1,251

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	114	9,786	114	9,786	0	0
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	3	183	3	183	0	0
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	5	357	5	357	0	0
<i>Education</i>						
Engage and inspire diverse audiences	2	347	2	347	0	0
Preserve Our Natural and Cultural Heritage						
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	1	127	1	127	0	0
<i>Security</i>						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	18	603	18	603	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	40	2,621	40	2,621	0	0
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	8	462	8	462	0	0
Total	191	14,486	191	14,486	0	0

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 106 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 a critical contribution to the Smithsonian Institution's newly issued Strategic Plan. STRI's soon-to-be-released strategic plan is closely aligned with the Smithsonian 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 a critical 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, formerly CTFS, 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 allows for global comparisons and 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 which include 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. 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, following a recently resolved ownership dispute. The island provides 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.

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 106 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 humankind.

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 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 potential 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 included monitoring 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 2019 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 is launching a new initiative to understand the critical role played by microbes in marine ecosystems, and host a series of postdoctoral Fellows. STRI is also leveraging additional private funding to hire a new staff scientist and begin a new initiative to understand the critical role played by microbes in forest ecosystems.

The chair in paleoecology currently 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 has 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 2017 ENACTED	45	6,197	7	1,286	58	12,634	0	0
FY 2018 ESTIMATE	45	6,273	7	4,154	63	11,822	0	27
FY 2019 REQUEST	45	6,273	7	4,279	63	12,177	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		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, 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.

In FY 2019, the F|S will capitalize on the momentum created by the reopening of the Freer Gallery of Art after a nearly two-year closure to fully renovate its heating, ventilation, and air-conditioning (HVAC) system, and also a brief closure of the Arthur M. Sackler Gallery. Both Museums opened with reinvigorated galleries, an upgraded public auditorium, and enhanced visitor amenities. Innovative exhibitions in the Arthur M. Sackler Gallery and a new interpretive approach in the Freer Gallery of Art serve to contextualize growing permanent collections and integrate their public display. The FY 2019 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 Museums will further the strategic goal of Expanding Digital Technologies by devoting coordinated resources in FY 2019 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 F|S website with a new content management system that will allow linkages between thousands of different types of records and media, and providing a new search tool for online collections. F|S will continue to increase the digitization of its publications, and enhance the visitor experience with new ways to access its research and wealth of assets, such as ensuring an Americans with Disabilities Act (ADA)-compliant website. The new programming effort for the International Gallery in the S. Dillon Ripley Center, managed jointly by F|S and the National Museum of African Art, enters 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.

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

In addition, the F|S will address the strategic goal of Enabling 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.

Two innovative mid-duration exhibitions are on view in the Sackler throughout FY 2019: *Encountering the Buddha: Art and Practice across Asia* expands the understanding of Buddhism in Asian art through both beautiful objects and immersive spaces. Visitors can step into a Tibetan Buddhist shrine, travel the Buddhist world with an 8th-century Korean monk, visit a Sri Lankan stupa, meet teachers and guardians, and discover the ways art and place embody and express the teachings of Buddhism. Related digital content enhances the exhibition experience and makes online connections to the Freer collections. 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. Research by archaeologists, art historians, musicologists, materials scientists, and physicists indicates that the Smithsonian's holdings span the entire length of the Bronze Age and reflect a variety of regional types and a wide range of uses. 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, designed to be informal, experimental, and interactive, will attract new audiences with a contemporary perspective on the exhibition.

Planned presentations in the fall and winter of FY 2019 will focus on recently acquired material that expands our understanding of historical Japan and its artistic contributions through the 20th and 21st centuries. These major acquisitions of Japanese photographs and modern graphic arts further enhance the depth of the F|S Japanese collections, deepen understanding of the various artistic responses to modernity in Japan, and offer a uniquely nuanced context for understanding the development of Japanese photography and its relationship to the other arts. A major exhibition of loan material from the Palace Museum in Beijing will be on view in spring 2019. Organized in collaboration with the Peabody Essex Museum in Salem, Massachusetts, *THE LAST EMPRESSES OF CHINA* is the first exhibition to present the dynamic and increasingly visible role of Qing dynasty empresses in imperial politics, art, religion, and culture. Through the stories of four empresses, the exhibition will offer a fresh perspective on life in the Forbidden City. Additional temporary exhibitions will include a small exhibition of Islamic material in conjunction with F|S's annual Nowruz Persian New Year Festival and an exhibition, devoted to the traditional Chinese stringed instrument, the *qin* (zither), based on newly published research that shares, for the first time, the "biographies" and "personalities" of all six named *qin* zithers in the F|S collections. A new, large-scale work in the Sackler pavilion will crown the last quarter of FY 2019, continuing F|S's attention to the display of contemporary Asian art and its historical linkages.

F|S continues to develop major exhibition projects and long-term exchanges in collaboration with U.S. museums and with international scholars and institutional partners in China, Japan, Korea, India, Sri Lanka, and Italy. 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 2019, F|S will begin planning for thematic refreshes of the Freer Gallery permanent collection displays. While the public experiences new surprises throughout the year because of cyclical small changes in the works of art on show — due to long-term collection preservation requirements — the exhibitions with which the Freer Gallery reopened in the fall of 2017 were never intended to be “permanent.” Rather, the F|S will deploy a rolling calendar of thematic reinstallations of its collections to incorporate important new acquisitions, maintain a broad spectrum of provocative conversations about Asia and America, and compile exhibitions on view in the Sackler. A more comprehensive plan for visitor experience surveys will fully incorporate the Freer Gallery to understand the impact of its displays and how F|S can best integrate the visitor experience across both Museums.

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 outside organizations such as the National Museum in Beijing, the Hermitage Museum in St. Petersburg, Russia, the Uffizi in Florence, Italy, and the British Museum in London.

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 a major Getty Foundation grant, an online publication of the Pulverer Collection of Japanese books was launched. In addition, in the past several years, the F|S has collaborated with Ritsumeikan University to digitize more than 100,000 images of Japanese books of art.

F|S will achieve the Institution’s strategic goal of Enhanced Interdisciplinary Research by coordinating its own collections more vigorously with researchers in universities in the Washington, DC area, as well as internationally, and ensuring that F|S has appropriate distribution, in print and online, of scholarly publications and data resources.

The Museum’s department of public and scholarly engagement, which is responsible for the public-facing activities of the F|S in the areas of public programs, education, visitor experience and research, is continuing the new accessibility initiatives developed for the Museums’ reopening, including large-print labels for major exhibitions, a tactile map for vision-impaired visitors, and piloting programs for disabled audiences. In the area of K–12 education, the number of students visiting the Museums has increased dramatically. A major focus for FY 2019 is the development of new online resources for K–12 educators, based on 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 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.

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 department and laboratory. The department is led by a director who is one of the most respected figures in the field. In FY 2019, 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 heavily involved in several international coalitions to develop public-facing scholarly textile and bronze-casting databases. Additionally, with support from the David Berg Foundation, the F|S collections department continues its research into Nazi-era provenance issues, further strengthening international ties developed in previous years. The Museums will also complete work to record all of their exhibition history for eventual public access. 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 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 Enabling a 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. The F|S strategic plan aligns with the Smithsonian's overall Strategic Plan in terms of both timing and goals. The F|S continues to closely track progress against its strategic plan through the use of a management tracking system that enhances accountability by linking 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 sources of income 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 2017 ENACTED	17	3,039	10	1,668	6	1,712	1	501
FY 2018 ESTIMATE	17	3,084	9	1,442	6	388	3	2,431
FY 2019 REQUEST	17	3,184	9	1,442	7	1,838	1	338

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		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	1,324	8	1,424	0	100
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	100	0	0
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	2	280	2	280	0	0
Total	17	3,084	17	3,184	0	100

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 “promote greater understanding and sustainability of cultural heritage 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 Folkways 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, 30 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 2019 budget request includes an increase of \$100,000 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 half 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 (more than 100 partnerships in the past seven 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 8.14 million visitors on site and online), Smithsonian Folkways Recordings (with more than 273 million listeners via recordings, radio programs, downloads, and audio streams), websites and social media (with 8.12 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 2018 and 2019, 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 2019 Smithsonian Folklife Festival will focus on the social power of music. Organized in partnership with individuals and organizations around the globe, the Festival will explore how communities have used music to create and sustain important social connections. Current plans include program highlights on sacred music from the American South, protest music, hip-hop, and a case study on musical traditions across the African Diaspora with roots in the Republic of Benin. From June 28 to July 8, 2018, 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 creativity and cultural heritage play in their own lives.

Since its inception, the Festival has engaged teachers through workshops both on and off site. As part of continuing efforts to extend the event's impact beyond its annual 10-day run on the National Mall, in 2019, Festival staff will convene an advisory group to help identify goals and strategies for engaging K–6 educators. Additional opportunities to expand the Center's impact and cultural exchanges are presented by "off-cycle" public programming. Conversations, performances, and screenings with partners throughout Washington, DC and around the country, with emphasis on Smithsonian Affiliates, will amplify the missions of the Institution and the Center. In order to execute the above activities as the Festival contends with increasing production costs, a thoughtful reconsideration of fundraising strategies and opportunities to earn revenue will be conducted. The goal is to ensure the long-term fiscal health of this venerable cultural resource that has fostered exploration, exchange, and engagement for more than 50 years.

Also in 2018 and 2019, 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 2017.

In 2018, 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. A multi-disc box set on hip-hop traditions will be publicized in FY 2018 and released in FY 2019; a major crowd-funding campaign raised more than \$360,000 for this effort. Smithsonian Folkways Recordings will also release a major box set to highlight the enduring musical contributions of Pete Seeger to mark the centennial of his birth, and a box set on the social power of music that will leverage the Folklife Festival programming. In addition to these landmark releases, Folkways will release an additional 20 recordings in FY 2019.

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 bolster its million-plus circulation of digital content from non-Smithsonian websites such as iTunes U, now available in more than 67 countries. It will continue to expand its collaboration with private partners to deliver the entire Folkways collection to more than 560 libraries throughout the continent and beyond. The *Musica del Pueblo* virtual exhibition will expand its offerings of American and Latin American content by featuring even more video and audio recordings as well as text from and about Latino roots musical traditions. This mission-critical content will also generate additional revenues through online and retail sales.

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.

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 CHCF 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 13 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 alike. 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 2019 — 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. Central funds from within the Institution will further support the Rinzler Archives' digitization and dissemination efforts.

Through these activities, the CFCH will take major steps to fulfill the Smithsonian Grand Challenges of Understanding the American Experience, Valuing World Cultures, and Magnifying the Transformative Power of the Arts and Design. The CFCH will contribute to the Smithsonian's strategic goals of Expanding Digital Technologies and Enabling Cost-Effective and Responsive Administration by continuing to improve its information technology infrastructure and related project budgeting and planning.

NONAPPROPRIATED RESOURCES — General trust funds support salaries and benefits of approximately one-quarter of the CFCH's personnel, and revenues from Folkways Recordings pay nearly half of 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 2017, 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 2017 ENACTED	36	5,005	25	4,197	25	5,451	0	127
FY 2018 ESTIMATE	36	5,061	30	4,250	22	5,900	1	125
FY 2019 REQUEST	36	5,086	30	4,375	22	6,575	1	125

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		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	2,071	7	2,096	0	25
<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	5,061	36	5,086	0	25

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 2019. 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.

The FY 2019 budget request includes an increase of \$25,000 for rent escalation, which is included in the Fixed Costs section of this budget submission.

MEANS AND STRATEGY

In FY 2019, 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. The Museum will present *Nature — Design Triennial*, as well as several rotations in the galleries that display the Museum's permanent collection. *Nature* will feature approximately 80 innovative projects, from 2016 and later, of architecture, urbanism, product design, landscape design, fashion, visual communication, and materials research which seek to enhance and reimagine our uses of the natural world. Areas of innovation include renewable energy, scenario planning, synthetic biology, biomedical research, data visualization, urban agriculture and additive manufacturing. 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, through beginning, intermediate and advanced programs in design. All programs will focus on using objects in the collection as points of inspiration and reference; with the broad goals of developing creative problem-solving and critical thinking to advance connection building and empathy as skills 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, Educators' Resource Center, and EdX course.

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. Cooper Hewitt 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 critical 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 2017 ENACTED	37	4,627	5	2,409	24	7,933	0	0
FY 2018 ESTIMATE	37	4,534	5	2,666	24	6,250	0	0
FY 2019 REQUEST	37	4,544	5	2,666	24	6,250	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in vital arts and humanities research	5	521	5	521	0	0
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	2	140	2	140	0	0
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	2	405	2	405	0	0
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	11	1,278	11	1,278	0	0
<i>Education</i>						
Engage and inspire diverse audiences	2	188	2	188	0	0
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	8	1,132	8	1,142	0	10
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	7	870	7	870	0	0
Total	37	4,534	37	4,544	0	10

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 acquisition, 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 its efforts to pursue the strategic goal of Enhanced Interdisciplinary Research, the Hirshhorn has developed a deep expertise in conserving time-based media works that are at the forefront of contemporary art. This knowledge enables the Museum to sustain 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 a significant portion of its resources to advance the Institution's strategic goal to Understand and Impact 21st Century Audiences, primarily through its presentation of insightful, deeply researched exhibitions of modern and contemporary artists, many of them with novel thematic interpretations that win critical and public acclaim. The Hirshhorn supplements these exhibitions with an active roster of public programs, scholarly publications, and carefully selected images in original catalogues, and through continued progress in digitizing images of every work in the collection and highlighting them on the Museum's website.

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 another substantial portion of its resources to the preservation of its thousands of artworks. These artworks have been highlighted in several collection shows, such as *What Absence Is Made Of*, which opened in October 2017. 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 lends 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 a 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 senior, non-museum education professionals into the Museum to expand on the Hirshhorn's didactic approaches. *ARTLAB+* is a digital media studio for local teenagers, giving them access to professional technology and art, and connecting them to artist mentors who build a community of young creators. *ARTLAB+* has been a signature achievement of the Museum and has received critical acclaim from the broader educational community, as well as support from the Pearson Foundation and the Smithsonian Youth Access

Grant program. 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 FY 2019 budget request includes an increase of \$10,000 for rent escalation, which is included in the Fixed Costs section of this budget submission.

MEANS AND STRATEGY

In FY 2019, 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.

Thanks to the success of our FY 2017 exhibitions, the Hirshhorn saw record visitation and coverage by local and national media outlets. During the successful runs of *Ragnar Kjartansson* and *Yayoi Kusama: Infinity Mirrors*, the Museum experienced a 63 percent increase in visitation above the same period in the prior fiscal year. *Yayoi Kusama: Infinity Mirrors* was the Hirshhorn's first exhibition to require timed-entry tickets. In response to demand that was even more enthusiastic than anticipated, the Museum enabled patrons to visit the exhibition through extended hours and other outreach efforts. The Hirshhorn also built visitor services support systems from the ground up by increasing the use of volunteers, gallery guides and part-time visitor attendants.

FY 2019 exhibitions will remain at the forefront of the Hirshhorn mission to expand access to the arts and, specifically, to increase public understanding of, and engagement with, the international scope of modern and contemporary art. FY 2019 exhibitions will include:

- Mark Bradford's site-specific commission, installed along the full 400-foot circumference of the inner wall, which will continue on view until November 2018. This commission, inspired by artist Paul Philippoteaux's 19th-century cyclorama in Gettysburg National Military Park, Pennsylvania, weaves past and present, illusion and abstraction, inviting visitors to reconsider how narratives about American history are shaped and contested.
- *What Absence Is Made Of*, the major thematic reinstallation of masterworks from the Hirshhorn's collection, and *Sean Scully: Landlines*, a loan show of a recent, comprehensive body of work by the renowned Irish-American artist.
- *Pulse*, a dramatic, new installation of work by Mexican-Canadian artist Rafael Lozano-Hemmer, which will open in October 2018 in the Museum's second-

level galleries. Lozano-Hemmer's room-sized light-works allow visitors to interact with the works, incorporating visitors' fingerprints and pulse rates into compelling walk-through light displays.

- A new exhibition of important works by German-born, American-based painter Charline Von Heyl, which will open in early FY 2019 on the Hirshhorn's Lower Level. The exhibition is organized in partnership with the Deichtorhallen Museum in Hamburg, where it premieres in the summer of 2018 before traveling to Washington, DC. The exhibition will be accompanied by a fully-illustrated catalogue containing an interview with the artist conducted by senior curator Evelyn Hankins.

The major exhibitions presented in FY 2019 will be complemented by smaller exhibitions. Those currently under consideration include a show on interactive environments created by Thai artist Rirkrit Tiravanija and a mid-career survey of multi-media works by Italian artist Enrico David, organized in collaboration with the Museum of Contemporary Art in Chicago. The Hirshhorn's blockbuster exhibition *Yayoi Kusama: Infinity Mirrors* will complete its historic six-venue national tour in FY 2019 at the High Museum in Atlanta. All exhibitions displayed at and organized by the Hirshhorn are augmented with public tours led by gallery guides and invited specialists, lectures and other public programs. Many exhibitions will be accompanied by brochures and online educational resources.

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. Planned content for the website includes audio and video from public programs, interviews with artists and curators, and searchable access to the Museum's collections. The Hirshhorn will also refine its communication procedures to diffuse deep knowledge of contemporary art and culture, whether presented in the Museum or elsewhere, and not merely describe events in superficial terms. The Museum will also continue to publish original catalogues to complement the viewing of its exhibitions as well as other books that examine modern art, design, and cultural shifts of the early 21st century. In addition, based on the popularity of a pilot program rolled out in FY 2017, the Hirshhorn is developing a mobile video guide to further increase interaction between visitors and the digital resources of the Museum.

The Hirshhorn will support the goal to Understand and Impact 21st Century Audiences with a range of programs geared toward people with varying levels of art experience and cultural interests, and by expanding or revising 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

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 “Interpretive 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 2019, we will continue to pilot programs to capture additional audiences such as: pre-school-aged children, through *STORYTIME*, which explores contemporary art through stories and movement; family-focused activities, through *Maker Mornings*; and youth audiences with cognitive and intellectual disabilities, through the *Expanding Pathways to Participation* program.

In FY 2019, the Museum’s main action to achieve the strategic goal to Preserve Our Natural and Cultural Heritage will continue to involve planning and fundraising efforts to reconfigure the office and storage space on the fourth floor, and to move the Conservation Lab from the basement to the fourth floor, where natural light will greatly enhance the Lab’s 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 entire 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 refine its public spaces for visitors who apply mobile technology in every facet of life, and expect access to Web-based knowledge and social media platforms to enliven their interpretive experience as they explore Museum galleries. The Hirshhorn administration will continue to improve long-range program planning reviews to improve 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, development activities, and exhibition and program-related costs. Donor/sponsor-designated funds support development, 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 2017 ENACTED	28	4,576	3	911	5	1,239	0	0
FY 2018 ESTIMATE	28	4,654	6	1,000	8	1,425	0	0
FY 2019 REQUEST	28	4,654	6	1,000	8	1,568	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in vital arts and humanities research	3	578	3	578	0	0
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	1	133	1	133	0	0
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	3	544	3	544	0	0
Exhibitions						
Offer compelling, first-class exhibitions	8	1,532	8	1,532	0	0
Education						
Engage and inspire diverse audiences	4	542	4	542	0	0
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	5	678	5	678	0	0
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	3	432	3	432	0	0
Information Technology						
Improve the Institution's information technology systems and infrastructure	1	215	1	215	0	0
Total	28	4,654	28	4,654	0	0

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.

Substantial selections from the Museum’s large and important permanent collection of traditional and contemporary African art will remain on view in FY 2019, 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. The small *Healing Arts* exhibition, which opened in FY 2017 in the Museum’s pavilion, will remain on view; it brings together selected traditional and contemporary artworks which explore knowledge, creativity, and the arts as they broadly intersect the theme of healing. At the beginning of FY 2018, the Museum opened the exhibition entitled *Visionary: Viewpoints on Africa’s Arts*. The permanent exhibition, with changing elements, 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 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.

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.

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 2019 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.

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's successful implementation of its conservation training Fellowship program, funded by a multi-year Mellon Foundation grant, 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 2019, the Museum will open three new exhibitions. *Good as Gold*, a temporary exhibition that will open in October 2018, features works of Senegalese jewelry donated to NMAfA in 2012 by art historian Marian Johnson. The exhibition will also include the loan of selected objects and archival images borrowed from museums in the United States and Senegal. A second exhibition, *I Am: Women's Voices in the Contemporary*, will open in late spring or summer 2019 in the NMAfA's contemporary galleries. It will feature selected works from the NMAfA's collection made by important modernist and contemporary women artists from Africa. Potential rotations may extend the life of this exhibition into FY 2020. The Museum will also host an important traveling exhibition, *Striking Iron*, a temporary 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* will open in February 2019 in the International Gallery on sublevel 3, a space that is jointly shared by the NMAfA and the Freer and Sackler Galleries. It will remain on view through the beginning of FY 2020.

In FY 2019, the Museum will also devote staff resources to planning exhibitions in FY 2020 and beyond, including the *Caravans of Gold* exhibition, developed by the Block Museum of Art at Northwestern University. It is slated to open in the level 3 International Gallery and run from late January through June

2020. Other possible Museum-developed exhibitions and accompanying scholarly publications include the *Mechanics of Art*, *Visionary Leadership*, *African Minimalism*, and the *Creativity of Work*. The NMAfA will also seek additional loan shows developed by outside institutions. Staff members 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. 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.

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, 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.

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 2017 ENACTED	19	2,329	3	515	0	65	0	30
FY 2018 ESTIMATE	19	2,405	4	581	0	75	0	250
FY 2019 REQUEST	19	2,405	3	490	0	150	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
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						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	3	429	3	429	0	0
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	2	101	2	101	0	0
<i>Education</i>						
Engage and inspire diverse audiences	3	399	3	399	0	0
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	5	414	5	414	0	0
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	1	69	1	69	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
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 celebrated its 50th anniversary in 2017, it embarked on a transitional period. After a series of stakeholder interviews, community forums and strategic retreats, a plan for revitalization emerged. The three-phase plan consisted of market research, development of a business case detailing a new community driven model, revitalized mission and refined areas of focus, and the creation and implementation of a new strategic plan.

With the completion of phases 1 and 2, the ACM used its anniversary as a well-positioned opportunity to reintroduce itself to the Washington, DC metropolitan area and Smithsonian Institution at large. The Museum's new mission explores social issues that impact those living in the metropolitan area through the arts, environment, community history and urban studies. By promoting the coming together of diverse people and perspectives, the ACM seeks to reaffirm its role as a pillar of the community, champion for self-expression and catalyst for social change.

The Museum is currently in phase 3 of its revitalization, the development of a strategic plan. This process will include an in-depth analysis using the strengths, weaknesses, opportunities, and threats (SWOT) approach, internal and external stakeholder buy-in, and reimagining of programmatic offerings to support the ACM's new model.

MEANS AND STRATEGY

The ACM will work with Smithsonian Organization and Audience Research (SOAR) to create a strategic plan that supports the Museum's goals and positions the ACM to achieve priorities outlined in the Institution's new Strategic Plan: engaging and understanding 21st century audiences; catalyzing conversations; collaborating with the Washington, DC public school system; and employing a digital-first strategy.

ACM research, exhibitions, and collections are shaped by the metropolitan community. The Museum explores urban trends through a hyper-local lens, collects artifacts and historical documents about civic leadership, engages with community activism and everyday life, works toward identifying new sustainable methods for environmental conservation, and celebrates all forms of related artistic expression. Mutually beneficial partnerships will strategically expand the Museum's spheres of influence, both locally and nationally. The ACM will partner with other Smithsonian entities, scholars, community organizations and residents to employ a community-driven model. Instead of following the traditional Museum method of selecting and interpreting stories for an audience, the ACM will work to ensure that local community voices are heard.

Enhanced Interdisciplinary Research

In FY 2019, the ACM will enhance its interdisciplinary research with three projects: Urban Waterways; an Urban Waterways website; and a reconfiguration of the Community Documentation Initiative (CDI).

Urban Waterways

For the past eight years, the Smithsonian's ACM has led the Urban Waterways Project, a collaborative research and educational initiative established with the support of the Grand Challenges Consortia. 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 (including Pittsburgh, Baltimore, Spartanburg, Biloxi, Gulfport, Los Angeles, Honolulu, and London) consists of communities with histories similar to Anacostia and other East of River (EOR) communities. These communities, which have traditionally been a place of the "Other," have played an integral role in the economic development of their larger metropolises, regions, and nations.

Urban Waterways Website

The Urban Waterways website aligns with the Museum's greater Web digitization efforts. More than seven years of waterways research will be accessible to millions of visitors. The website will focus specifically on the communities in the ACM's network: Washington, DC; Baltimore; Pittsburgh; Los Angeles; Louisville; O'ahu; the Gulf Coast (including Turkey Creek/Gulfport, Biloxi, Codan, and Moss Point Africatown); London; and Spartanburg. Each community will have a page on the site dedicated to the history of the waterway and the various communities surrounding it; the Web content will include a collection of images, reports, newsletters and audiovisual narratives taken over the course of the ACM's research.

Community Documentation Initiative

The Museum's Community Documentation Initiative researches, records and examines historical and contemporary issues that impact diverse populations within the Washington, DC metropolitan area. The ACM addresses topics such as urban development and renewal, understanding the environment, cultural identity, and creative expression. This research is the basis for issues addressed in exhibitions, programs and publications, and will be made accessible to the general public. The CDI will connect the Museum's research, documentation materials and collections directly to constituents through education and public programs, the Smithsonian Institution's Collection Search Center, The Museum System (TMS) database, online and gallery exhibitions, and Web content.

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 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 will be established in collaboration with local schools and youth organizations. Students will work together to create a signature project (such as short-term exhibition and community archiving) for their peers each semester. They will also be 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 Smithsonian’s Collection Search Center and TMS database. Because collections stewardship is fundamental to the Smithsonian’s mission, there is a vital need for resources to accomplish basic collections management activities for accountability, preservation, storage, digitization, and accessibility.

Enable Cost-Effective and Responsive Administration

Strategic Planning

The development of a revitalized strategic plan is crucial to the survival of ACM. Great attention to detail must be given to properly align Museum operations with the new mission, goals and overarching institutional priorities. This process will include an

in-depth SWOT analysis and four strategic planning sessions. The SWOT analysis will elicit the perceptions of ACM staff and key external stakeholders about the current state of the Museum, its future direction, and what social impact they believe the Museum should accomplish. This analysis will also allow the Museum to assess whether the perceptions of ACM staff and those of external stakeholders are aligned to enable the Museum to achieve its goals. It provides important context for the formulation of goals and strategies. The planning sessions will allow the ACM to assess the findings of the SWOT analysis. This will allow ACM management to review the current mission statement and draft a vision statement detailing where the Museum will be within the next three years, and determine the core competencies it will excel in to realize that vision. Sessions will also examine the signature characteristics of ACM's engagement with audiences and its internal work environment to establish realistic and measurable goals that are directly tied to the Museum's mission and Smithsonian Strategic Plan.

NONAPPROPRIATED RESOURCES — The ACM's financial strength is closely tied to its strategic revitalization. In FY 2019, advancement goals will include planning and developing strategies for grassroots fund raising to support Museum programs and research. Advancement staff will leverage the 50th anniversary year and the Museum's new direction and model to excite current donors while attracting new ones. The ACM will continue to direct resources to establish its visibility throughout the Washington, DC metropolitan area. The Museum will use findings from the SWOT analysis to build a new communications department, which will play a key role in increasing local awareness of the Museum and its mission. The ACM will harness this awareness to better connect it 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 2017 ENACTED	17	1,909	2	692	15	2,036	0	0
FY 2018 ESTIMATE	17	1,933	3	729	18	2,257	0	16
FY 2019 REQUEST	17	1,933	3	708	19	2,442	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	3	343	3	344	0	1
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	1	96	1	97	0	1
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	1	88	1	87	0	-1
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	10	1,052	10	1,053	0	1
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	2	354	2	352	0	-2
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 of Expanding Digital Technologies, 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 Our Natural and Cultural Heritage 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 Enable Cost-Effective and Responsive Administration 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 exhibitions planned for FY 2019 include: *The Temple of Man Is Within You: Robert Alexander and the California Beats*; an exhibition on the feminist art moment; and *Bloom: Flowers from the Archives of American Art*, in collaboration with Smithsonian Gardens.

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 2019, 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 2019, AAA will continue to develop the Terra Foundation Center for Digital Collections with ongoing support from the Terra Foundation for American Art, the Walton Family Foundation, 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, including digitization on demand and use of the Aeon patron request management software launched in FYs 2014 and 2015, 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 fully 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 2019, 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 new shared software and database collections information and management system that will be adopted by all Smithsonian archival units.

In addition, in FY 2019, 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 resulting from processing work 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 aimed at diminishing the current backlog and preventing a new backlog.

Furthermore, in FY 2019, 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, begun in 2004 for manuscript collections, and subsequently expanded to include 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 prioritize and 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, similar to the pan-Institutional assessment of archival audiovisual materials and born-digital holdings. 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.

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 Smithsonian resources.

NONAPPROPRIATED RESOURCES — General trust funds support AAA's development 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 2019, the Archives will 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 three years, AAA has expanded 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 2019, the Archives will continue to develop strategies for sustaining its digitization program by building an endowment to support critical staff and implementing improved rapid-capture technologies and techniques. Funding from the Terra Foundation for American Art and the Walton Family Foundation 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 2017 ENACTED	165	41,564	1	624	10	9,116	0	0
FY 2018 ESTIMATE	145	33,079	4	2,683	47	16,044	0	0
FY 2019 REQUEST	145	33,079	4	1,816	47	16,497	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in vital arts and humanities research	24	5,274	24	4,956	0	-318
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	5,117	11	3,439	0	-1,678
<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	3,598	22	3,484	0	-114
<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	6,898	40	9,323	0	2,425
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	7	5,025	7	4,710	0	-315
Total	145	33,079	145	33,079	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 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 2018 is the NMAAHC’s second 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 2018 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 NMAAHC further disseminated information through four major initiatives: the establishment of a robust visitor services program; 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. In FY 2019, the NMAAHC continues with three of the four major initiatives. Visitor Services in FY 2018 will become well-established and operational. The new initiative is the establishment of two new centers of scholarly studies which will address U.S. Racial History and Equity, and African American Innovation and Entrepreneurship.

MEANS AND STRATEGY

In FY 2019, 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 to establish 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. In 2019, the NMAAHC will concentrate on the start-up of two new centers of scholarly studies revolving around U.S. Racial History and Equity (Center for Diaspora), and 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. The IT program will broaden the Museum's reach and impact by continuing to adopt a digital-first strategy that includes providing tools, technology and platforms to enhance education programs, facilitate research and collaboration, and enable external partnerships. The Museum will also develop the technology to extend and enhance the visitor experience, promote engagement with visitors before, during and after a visit, and provide meaningful interactions 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 Museum-Wide Mobile platform will further extend the Museum'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. Digital content management systems and interfaces continue to be developed 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 NMAAHC's IT department will work with both internal and external partners to develop the next phases of digital offerings for the public and staff.

The fourth priority for the NMAAHC is to continue to fulfill its mission of collecting and documenting African American history and culture, with a new, special emphasis on programs about the African Diaspora, African American innovation and entrepreneurship, and faith. In FY 2019, collections and digitization departments will put in place full operations procedures, policies and guidelines to have the collections fully digitized by FY 2022.

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

In FY 2019, 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 2019 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 development, 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 also sponsor the Museum's participation in a second key interdisciplinary collaboration related to slavery: the Global Curatorial Project. In FY 2019, this will include an expansion into 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 U.S. Racial History and Equity and African American Innovation and Entrepreneurship. Various publication projects under way for FY 2019 will engage and inspire audiences while disseminating information to the public. The *Sweet Home Café Cookbook* will feature recipes based on the food served in the Museum's restaurant, with recipe notes and sidebars discussing different regions and types of food. It will be illustrated with photographs of food and objects relating to African American foodways in the NMAAHC collection.

CHANGE-MAKERS: 50 African American Women will present biographical entries with quotes and an object from the NMAAHC collection. The Museum will also make contributions to the Institution-wide project, Smithsonian Women.

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

Digitization and Web Support —

In FY 2019, 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 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 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,” following the model set by the Many Lenses initiative.

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. In FY 2019, the Robert Frederick Smith Fund for the Digitization and Curation of African American History will enter Year 3 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 partnerships on the World Wide Web, 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. In FY 2019, the Smith Funds 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 the Center 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 2022 by partnering with the OCIO's Digitization Program Office 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. In FY 2019, 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 2019 funding will also support curatorial work to develop *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 continue its ongoing educational initiatives offered off site for students, educators, and the general public.

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. Programs also will elevate the themes of exhibitions mounted by the Museum, including: *The Poor People's Campaign* and

Double Victory: World War I that will be installed at the National Museum of American History (NMAH). In the NMAAHC Changing Exhibition Gallery, *Watching Oprah* will enable the Museum to create public programs to elevate reading and its benefits for all age groups.

The NMAAHC Office of Strategic Partnerships (OSP) continues to empower, connect, and advance the work of national and international professional audiences and peer institutions. The OSP accomplishes this by connecting needs to resources and by supporting programs and initiatives that build organizational sustainability and provide targeted professional development opportunities. Examples of this work planned for FY 2019 include ongoing support for the 40th anniversary initiatives of the Association of African American Museums (AAAM) and participation in the Museums Association of the Caribbean Conference, a key group of African Diaspora peer institutions. The OSP will continue research in Senegal to prepare the University of Dakar to become a key partner site in the Global Slave Wrecks Project. The OSP will also continue to offer regional and national partners opportunities to build professional development and institutional sustainability by collaborating with other Smithsonian and external organizations and experts.

The NMAAHC Office of Curatorial Affairs and the Office of Project Management will produce several new exhibitions in FY 2019, including a new temporary exhibition exploring the history and visual culture of film posters that will open in June in the Earl W. and Amanda Stafford Center for African American Media Arts (CAAMA).

Also, in September of 2019, the Museum will open the temporary exhibition *We Return Fighting: The African American World War I Experience*, which will be shown in the NMAAHC Special Exhibitions Gallery to commemorate the 100th anniversary of African American soldiers returning from France. The exhibition will examine the experiences of African Americans who fought in combat as well as for freedom and democracy on the home front, and explore the social, political, and cultural impact of World War I on African American history and culture.

FY 2019 funding will also support planning and development for a new temporary exhibition on the history and significance of Reconstruction, scheduled to open in 2020.

In April of 2019, the NMAAHC will launch a traveling version of *City of Hope: Resurrection City & the 1968 Poor People's Campaign*, in collaboration with the Smithsonian Institution Traveling Exhibition Service (SITES).

In addition, FY 2019 funding will support planning and development for a future traveling exhibition based on the NMAAHC temporary exhibition *We Return Fighting: The African American World War I Experience*, to be developed in collaboration with SITES. The traveling exhibition will bring the story of this historic national movement for social justice and human rights to venues across the country, and connect audiences with local histories of community activism.

The NMAAHC will also support the strategic goal of Understanding and Impacting 21st Century Audiences by launching traveling versions of the *World War I* and *City of Hope* exhibitions to select venues after those exhibits have closed at their respective Smithsonian museums. In addition, the NMAAHC plans to send two small traveling exhibitions to sites in various African countries and the U.S. Virgin Islands as part of the Museum's work to support the CSGS Slave Wrecks Project.

In the spring of 2019, in conjunction with educational programming for the temporary exhibition *Watching Oprah: The Oprah Winfrey Show and American Culture* (open June 2018–June 2019), the NMAAHC will produce an educational poster exhibition that will be available to public libraries, schools, and other community venues.

Center for African American Media Arts (CAAMA)

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.

Office of Education

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 2019.

To achieve the strategic goal to Preserve Our Natural and Cultural Heritage, the NMAAHC 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 2019 plans to have implemented numerous collection management policies to safely handle, display, and store collections. In particular, new Archives Criteria cataloguing standards improve tracking of Museum collections to improve access and use by internal and external audiences.

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.

The NMAAHC will also continue to expand 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 for

the Collection Donor Oral History Project, which documents stories of individuals who have donated to the NMAAHC's collection, such as former NASA Administrator Charles F. Bolden, Jr., and civil rights activist Joan Mulholland; interviews directly associated with exhibitions, such as the recordings of the Meggett family who were the last occupants of the Edisto Slave Cabin that is featured in the *Slavery and Freedom* inaugural exhibition; and priority interviews with historically and culturally significant African Americans such as William Pickens, III, the grandson of the youngest member of the Niagara Movement and member of an iconic family.

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 2019 will be on 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*" that would extend in FY 2019 and 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, including with external partners, 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 redesign of Sankofa, the Museum's intranet site, for improved information sharing, business process automation, and formalized IT project management and reporting.

In support of Management Operations, Museum staff will begin to use the Dexibit dashboard of operations and visitation data in FY 2019. This dashboard will give staff access to information on distributed versus scanned passes, real-time visitation, dwell times, and scheduled events, and help staff manage Museum facilities and ensure visitor safety. The IT team will implement additional tools, such as Sensource and Lascar Temperature and Humidity Dataloggers, to ensure compliance with safety and security guidelines and processes, as well as enable disaster recovery and continuation of operations.

In FY 2019, the IT team will also complete its procurement of laptops and virtual meeting tools for Museum staff to ensure virtual access for a mobile-enabled workforce.

Public Affairs

The NMAAHC public affairs department 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 first 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, 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 2017 ENACTED	163	24,916	24	4,213	65	19,006	0	47
FY 2018 ESTIMATE	164	25,373	26	4,500	65	19,500	0	75
FY 2019 REQUEST	164	25,373	28	4,750	65	19,500	0	75

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in vital arts and humanities research	22	3,450	22	3,450	0	0
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	11	1,800	11	1,800	0	0
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	13	2,430	13	2,430	0	0
Exhibitions						
Offer compelling, first-class exhibitions	46	6,750	46	6,750	0	0
Education						
Engage and inspire diverse audiences	6	930	6	930	0	0
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	45	6,848	45	6,848	0	0
Facilities and Safety						
Improve Smithsonian facilities operations and provide a safe and healthy environment	3	590	3	590	0	0
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	14	1,735	14	1,735	0	0
Information Technology						
Improve the Institution's information technology systems and infrastructure	4	840	4	840	0	0
Total	164	25,373	164	25,373	0	0

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 seven 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, we plan a phased reopening for the third floor, which will focus on American entertainment history — music, sports, movies, television and theater — and how our culture expresses what it means to be an American.

Through 2019, 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 seven years, the Museum has raised more than \$130 million for the West Wing exhibits, programs, and endowed curatorial positions to leverage the federal investment in the building's renovation.

MEANS AND STRATEGY

The NMAH is most closely aligned with the Smithsonian's Grand Challenge of Understanding the American Experience. 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 through 2018, 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.

For example, in 2018, the Museum will launch the first phase of reopening 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 involves opening two introductory exhibitions on *The Art of Sound* and installing the iconic stained glass image of *Nipper, My Master's Voice*, and a rotating display of musical instruments from our vast collection, including rare Stradivarius violins, in our customized showcases in the Hall of Music. In addition, staff continue to develop our larger exhibitions on *Entertaining America* and a temporary exhibition gallery for a 2020 opening, and to address the question, what does the nation's entertainment history tell us about being American? All of these installations will explore how the entertainment history of the United States reflects American ideals and ideas. The exhibitions will examine how entertainment addresses our national values and identity, in addition to challenges related to race, gender, class, family, innovation and opportunity. The Museum will choose from iconic objects in its large entertainment and culture collection, ranging from Archie Bunker's chair from *All in the Family*, the technicolor camera used to film *The Wizard of Oz*, the ruby red slippers Dorothy wore in the classic movie, Fonzie's jacket from *Happy Days*, Muhammad Ali's boxing robe, and one of Babe Ruth's baseballs.

Also in 2018, the Museum will open the second exhibit in the new changing gallery on the second floor of the West Wing. This exhibition, *The American Revolution: A World War* will focus on the American Revolution as not only a national occurrence but as an international event, which affected every major European power and had worldwide implications. Finally, the Museum will complete design of and launch a major women's history exhibition scheduled to open in 2020 to coincide with the 100th anniversary of the passage 19th Amendment to the Constitution that granted women's suffrage.

In 2019, the NMAH will open an exhibition on medicine and health that 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 that will allow staff 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 approach the complete re-imagination of 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, and expect that these galleries will require additional and enhanced electrical, information technology, audiovisual, and other capacities. 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.

In addition to exhibitions, the NMAH contributes to the discussion of the American Experience through its ongoing scholarship and research.

In FY 2018, highlights of scholarly publications will include:

- Kenneth Cohen. *They Will Have Their Game: Sporting Culture and the Making of the Early American Republic*. Cornell University Press.
- Kirsten Frederick-Frost. "Reading Between the Lines: Deconstructing Moseley's Diagram" in *For Science, King and Country: The Life and Legacy of Henry Moseley*, eds. Roy MacLeod and Russell Egdell.
- Faith Davis Ruffins. "Founders, Founding Directors, and Pioneers: The Origins of the Association of African American Museums" in *The Public Historian* (special issue on Black Museums) Spring.

In FY 2019, highlights of scholarly publications will include:

- Richard Avedon. *Contributions to the Photographic History Collection*: Smithsonian Institution Scholarly Press.
- Kathryn D. Sullivan. *Handprints on Hubble: An Astronaut's Story of Invention*: MIT Press, Lemelson Center Studies in Invention and Innovation.
- Matthew Wisnioski, Eric S. Hintz, and Marie Stettler Kleine (eds.), *The Innovator Imperative*: MIT Press, Lemelson Center Studies in Invention and Innovation.

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, through FY 2019 and beyond, on enhancing the potential and value of its collections through intensive digitization efforts, increased access online, collaboration, and innovative uses of technology.

In FY 2017, the Museum continued its inventory projects, looking to improve the process and focus its efforts. In order to address the challenge of managing collections at scale, with approximately 1.8 million objects in total, the Museum continued to develop and test an accelerated, two-phased approach to its inventory efforts, with the first phase establishing physical and legal control and the second enabling more enhanced intellectual control. 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 FY 2019 and beyond.

The decontamination and re-housing project of some 3,600 objects in Garber Facility, Building 15 was completed in FY 2017. The decontamination and inventory of objects in Garber Facility, Building 18 began, with completion expected in FY 2018. Planning is under way for similar work on the collections in Building 16; work will begin with funding from the Collections Care and Preservation Fund in FY 2019. All of these efforts are planned in the context of looking forward to the development of Pod 6 at the Museum Support Center and the implementation of the Smithsonian's master collections storage plans.

Further digitization and transcription projects in FY 2017 included the digitization of its accession files, supported by collections, care and preservation funds; this work will support the inventory and reconciliation projects, as well as improve the content and functionality of XG, the Museum's collections information system. Given the volume of the files, the project will continue for several years. To increase the amount of digital content available to the public, the Museum will begin a cross-divisional collaboration to digitize images, using infrastructure supported by the Digitization Program Office (DPO) that uses the International Image Interoperability Framework. Funds donated by a private sponsor will support this work. As part of a broader partnership, with the DPO and Google's Cultural Institute, the Museum will digitize approximately 11,000 items in its Princeton Poster collection. It will also explore opportunities to treat digital content from such projects as data, with conversations and possible collaborations planned with the Library of Congress, the University of Maryland, and the National Science Foundation.

In FY 2018, new protocols for review and inclusion will make it possible to add 150,000 more collection records to the Smithsonian Collections Search Center and the Enterprise Digital Asset Network (EDAN). During FY 2017, the Museum added nearly 30,000 new records to its collections information system and exported 19,400 records to the EDAN. The NMAH will continue exporting the remaining 49,000 of 60,000 Numismatics rapid-capture records for transcription.

In accordance with the overall framework for collections stewardship, in FY 2018, the Museum will finish the revision of its collections management policy, as required every five years. 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. Loan functions were integrated in FY 2017 and the integration of conservation functions is under way. As that work is completed, the focus will turn to exhibit functions. Additionally, in FY 2017, the Museum designed and updated inventories for its national treasures and for collections containing hazardous materials. These inventories will now be done annually.

Goal 3: Engage Diverse National and International Audiences

The NMAH engages people of all ages on site and online, encouraging them to explore history through objects as well as programs, ideas, facts, and stories.

In December 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 200,000 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 reinstallation 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 will 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 will inspire our visitors to think about their own role in creating the nation of tomorrow.

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). 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.

To encourage conversation and respectful dialogue about the past, the Museum expands its activities beyond exhibitions and education through public programming and outreach. In 2019, Museum programming will continue to spark conversations that inspire audiences to examine the role of the humanities in civic life. The Museum’s signature programming will explore food history, history on film, jazz and chamber music, and innovation, and will bring history to life for audiences of all backgrounds and all ages. Also, in FY 2019, the NMAH will explore the theme “American Aspirations,” showcasing how Americans have aspired to solve problems to make our democracy and our world stronger, and continue the themes of our West Wing exhibitions, which highlight innovation, entrepreneurship, democracy, and diversity. Activities will include our signature America Now program, the fourth annual Smithsonian Food History Weekend, and the History Film Forum.

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. 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 20 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 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 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 eight million people a year.

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

In 2016, the Museum initiated a multi-phased strategy to rebuild the curatorial staff and scholarly foundation after two decades of staff losses that dramatically reduced the scholarly talent and capability necessary to research and explain the broad sweep of American history to our nation. This strategy successfully established endowed positions with funding from generous donors, combined with new federal funds targeted for the highest priority topical areas. In FY 2017, the Museum hired five new curators with federal funds, and is proposing to hire one more in FY 2018 to focus on women's history. 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 162 interns and 25 Fellows in FY 2017.

NONAPPROPRIATED RESOURCES — General trust funds support salaries and benefits for staff who work in administration, development, 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 2020. 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 2017 ENACTED	216	32,341	3	1,596	22	9,630	0	56
FY 2018 ESTIMATE	216	32,671	4	1,879	28	10,377	0	48
FY 2019 REQUEST	216	33,242	4	1,553	29	9,253	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in vital arts and humanities research	17	2,781	17	2,781	0	0
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	8	1,310	8	1,310	0	0
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	18	2,478	18	2,478	0	0
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	27	5,349	27	5,349	0	0
<i>Education</i>						
Engage and inspire diverse audiences	44	5,511	44	5,511	0	0
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	31	4,339	31	4,339	0	0
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	14	1,880	14	2,451	0	571
<i>Security</i>						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	1	134	1	134	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	42	6,219	42	6,219	0	0
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	14	2,670	14	2,670	0	0
Total	216	32,671	216	33,242	0	571

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.

The NMAI administers 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 nearly 1.6 million visitors in FY 2017. 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 who 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.

The FY 2019 budget request includes an increase of \$571,000 for required security protection at the George Gustav Heye Center in the U.S. Custom House facility in New York City. This request is a must-fund increase that is paid to the Federal Protective Service as a necessary expense because the building also houses the United States Bankruptcy Court. This increase is included in the Fixed Costs section of this budget submission.

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 today; 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 in FY 2019 include:

- *T.C. Cannon: Remember Me Blues* — One of the most influential, innovative, and talented modern Native American artists, T.C. Cannon's work brings together popular culture, historical imagery, and critical vision. *T.C. Cannon: Remember Me Blues* is the first major, traveling exhibition of his work in the last 25 years. This thematic retrospective will introduce this under-recognized artist to a wider audience. It will feature between 45 and 50 major paintings and works on paper, and will also explore Cannon's poetry and music, an interdisciplinary approach eminently suited to this multi-faceted artist. Organized by the Peabody Essex Museum (March–September 2019, NMAI-NY).
- *Section 14: The Other Palm Springs* — This exhibition chronicles the story of Section 14, a square-mile section of land in downtown Palm Springs, California, that forms the heart of the Agua Caliente Reservation. As Palm Springs evolved from a remote desert outpost into the playground of the rich and famous, Section 14 became more desirable to land developers. Between the 1940s and 1960s, competing interests vied for this valuable land and Section 14 became a battleground over tribal sovereignty, land zoning, leasing, economics, and race. *Section 14: The Other Palm Springs* exposes this land battle at the confluence of indigenous peoples and Western expansion. Organized by the Agua Caliente Cultural Museum (January–December 2019, NMAI-DC).
- *Representation* — A total of 13 objects from the NMAI collection will be displayed as contemporary art selections to illustrate Native self-representation. The proposed selections include visually striking works by 10 artists from different parts of North America and one from Latin America. From strongly contemplative to humorous, the pieces explicate the idea of representation. Interpretive text provides opportunities for discussing how artists from different regions and backgrounds represent themselves and others (Summer 2019, NMAI-NY).

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, and to achieve the goals of the Smithsonian Institution.

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 2017 ENACTED	56	6,460	2	1,193	20	3,490	0	0
FY 2018 ESTIMATE	56	6,556	10	2,352	12	2,611	0	0
FY 2019 REQUEST	56	6,556	9	1,771	10	2,650	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in vital arts and humanities research	3	383	3	383	0	0
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	2	294	2	294	0	0
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	3	516	3	516	0	0
Exhibitions						
Offer compelling, first-class exhibitions	19	1,915	19	1,915	0	0
Education						
Engage and inspire diverse audiences	9	868	9	868	0	0
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	15	1,904	15	1,904	0	0
Facilities and Safety						
Improve Smithsonian facilities operations and provide a safe and healthy environment	0	18	0	18	0	0
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	4	491	4	491	0	0
Information Technology						
Improve the Institution's information technology systems and infrastructure	1	167	1	167	0	0
Total	56	6,556	56	6,556	0	0

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 discussions of contemporary issues, and as a cultural center 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. Highlights of special exhibitions planned for the remainder of FY 2018 include:

- *UnSeen: Our Past in a New Light, Ken Gonzales-Day and Titus Kaphar* — The 2018 iteration of our popular Portraiture Now series will showcase two American contemporary artists — Titus Kaphar and Ken Gonzales-Day — who engage with representation in nation-building and reveal how the omission of certain figures and communities from the genre of portraiture has effectively pre-empted their recognition in national history.
- *Black Out: Silhouettes Then and Now* — Silhouettes have been, and continue to be, a powerful form of portraiture. This exhibition will explore 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. This exhibit will be accompanied by a fully-illustrated catalogue, and a two-venue tour is proposed.
- *One Year: 1968* — Some years acquire an iconic significance in our collective memories. The year 1968 is recalled not because it was notable for a single political event, but because it was a rolling cacophony of crisis and tumult, in which everything seemed to be changing. As we celebrate our 50th anniversary, the Portrait Gallery will reimagine the *One Life* gallery to

illuminate this impactful year — not only in our own institutional history, but also through its political, cultural, scientific and social milestones.

In FY 2018, the NPG will be traveling *The Outwin 2016 American Portraiture Today* exhibit to its final venue as well as launching the four-venue tour of *Yousuf Karsh: American Portraits*. From May to September 2018, the NPG will accept entries for the 2019 Outwin Boochever Portrait Competition. Additional collection-based traveling shows are in development based on self-portraiture and the Mathew Brady/Meserve collection. The NPG is also working with the Smithsonian Institution Traveling Exhibition Service (SITES) to develop an exhibit on Dolores Huerta and the presidents. The NPG will expand bilingual offerings in the permanent installation galleries for *The Struggle for Justice, 20th Century Americans, BRAVO!* and *Champions*. Planning will also begin to refresh the *American Origins* galleries.

The first step in Understanding and Impacting 21st Century Audiences is to combine communications, new media, and education into the Audience Engagement Department. In FY 2018, the combined departments have devised a strategy to define overarching goals in ways that support each goal, and provide actionable tactics for each strategy and key performance indicators to measure success. One of the primary goals within new media and communications includes raising national visibility, especially in five key regions: the San Francisco Bay area; Chicago; New York/New Jersey; Kansas City; and Dallas/Fort Worth. Other goals include highlighting the diversity of the collection to diverse audiences and increasing local visitorship and engagement. The NPG will accomplish these goals with targeted outreach, Web, and social media campaigns. While the Portrait Gallery is currently engaged in making its exhibitions and all printed and digital assets available in both English and Spanish, there will be an even greater push (at least in the digital sphere) to make content available in Mandarin, Russian, French and Arabic. Through this initiative, the NPG will bring our collections and scholarship to a worldwide audience.

Efforts in revitalizing education in FY 2019 include conducting more sophisticated analyses of different audiences, and the identification of and outreach to underserved audiences. The consideration of the latter will include non-native English speakers, and visitors with physical or learning challenges. NPG's education department specialists will establish stronger relationships with visitors from all backgrounds and interests in programs to develop events that are highly tailored to specific audiences. 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 members to extend the educational value of the NPG's collection both programmatically and digitally. The Portrait Gallery will also initiate an Accessibility Task Force to bring NPG staff up to par with accessibility issues and demands. Other popular programs, including after-hours events, curator tours, and Family Days events, will continue to anchor the NPG's educational offerings. In FY 2019, the NPG docent corps will be a vibrant and diverse group well-versed in the collection and trained in inquiry techniques to engage audiences. In addition, the

Portrait Gallery will continue testing a new space (Explore!) designed to help young people explore portraiture as art and history.

The NPG's publication projects in FY 2018 include scholarly exhibition catalogues for *The Sweat of Their Face* and *Black Out: Silhouettes Then and Now*, an updated book on the reinstalled *America's Presidents* exhibition, and a multi-author volume, *Beyond the Face: New Perspectives on Portraiture*. The Portrait Gallery will also work to publish effective content for programming and outreach. While continuing to update the permanent collection labels, NPG will come close to completing its bilingual initiative by ensuring that all permanent collection label texts are translated into Spanish.

The NPG will continue strengthening collections with several projects to produce digital images of its collection items and enhance the study and appreciation of its portraits in all media by researchers and the public around the world. By partnering with the Smithsonian's Digitization Program Office to leverage its rapid-capture digitization equipment, one to two thousand prints, photographs, and works on paper will be digitized and loaded into the Smithsonian Digital Asset Management System (DAMS), complete with object condition reports. The NPG will also begin pilot digitization programs of its sculptural works. These technology-driven collections care efforts will be supplemented by the annual object conservation work, and will include the delicate frames of many painted portraits.

MEANS AND STRATEGY

In FY 2019, 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 goal of offering compelling, first-class exhibitions by making its exhibitions more inclusive in subject and content, more accessible through translated, large-print and braille-accessible texts, and more broadly available through traveling exhibitions. The NPG's exhibition schedule in FY 2019 will feature the following:

- *Eye to I: Self-Portraits from 1900 to Today* — Drawing on NPG's vast collection of self-portraits, this exhibition will explore 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. An expanded companion publication and derivative touring version of this exhibition are planned.
- *Portraits of the World: Korea* — Continuing NPG's new international portrait series, the Portrait Gallery will present the work of featured artist Yun Suk Nam. Korea is acknowledged as 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, it is little known in the United States. This exhibition will introduce her art to American audiences.

- *Votes for Women: An American Awakening, 1840 to 1920* — As the country commemorates the 100th anniversary of the 19th Amendment, 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, and celebrating the many women who led the fight for women’s rights in the 19th and early 20th centuries, as well as exploring anti-suffrage activism, the state-by-state battle for ratification, and the legacy of the suffragists. A scholarly publication will accompany the show.
- *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 from the past.
- *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.

In addition to other permanent collection rotations and continuing traveling exhibitions, in FY 2019 the NPG will begin the three-venue tour of *In the Groove: Jazz Portraits by Herman Leonard* in Denmark, the two-venue domestic tour of *Black Out*, and preparations to refresh *American Origins*.

The Portrait Gallery will continue to revitalize education by offering wall text in all exhibitions, printed and digital assets, and limited public programs in both English and Spanish. The NPG will make progress with additional languages in our digital offerings. The audience engagement team will be collaborating with Smithsonian Enterprises on Gallery-wide audio components 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.

The NPG internship program will better reflect our community and provide opportunities for underserved students from diverse parts of the United States. The Portrait Gallery will accomplish this by providing a small stipend or travel voucher for

interns, and seeking funding for a broadcasting studio to allow for national outreach through podcasts and video production with staff and visiting artists. Students, teachers, families, and teens will continue to be served through diverse interactive programs related to better understanding who we are and our impact on our society. This programming will take place in the building and online. Communications and marketing will continue to advance outreach and recognition throughout the Washington, DC metropolitan area and nationally with targeted strategies in social media and ad placements.

In FY 2019, the NPG's publication projects include the companion publication for *Eye to I: Self-Portraits from 1900 to Today*, a scholarly exhibition catalogue for *Votes for Women: An American Awakening, 1840–1920*, and the fifth book in the series that accompanies the triennial Outwin Boochever Portrait Competition.

The NPG will continue to Preserve Our Natural and Cultural Heritage by providing a fuller picture of the early nation 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 images of contemporary Americans by acquiring portraits of leading figures in the sciences, business, and the arts.

The NPG is a leader among its sister Smithsonian museums in the collection, study, and conservation of artworks created in digital formats — a broad and dynamic art form evolving with every development in technology. The NPG will continue collaborating with the Digitization Program Office until its entire collection of both two- and three-dimensional works has been captured with digital imagery and made accessible to the public and researchers via the Web. Moreover, the NPG will care for the physical conservation needs of the collection, in all media.

Finally, the Portrait Gallery will continue work on the strategic goal of Enabling Cost-Effective and Responsive Administration with vigorous efforts to access diverse applicant pools for emerging recruitment needs. The NPG will also team with central Smithsonian offices of procurement, finance, and human resources to pilot and implement Web-based tools to enhance financial controls and expedite recruitments, as well as adapt procedures to improve contracting and purchasing.

NONAPPROPRIATED RESOURCES — General trust funds support critical 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 essential 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 2017 ENACTED	6	1,120	3	384	2	2,693	18	3,074
FY 2018 ESTIMATE	6	1,131	3	550	3	2,495	21	3,110
FY 2019 REQUEST	6	1,331	2	484	2	2,985	23	3,285

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		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	343	0	543	0	200
Total	6	1,131	6	1,331	0	200

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*.

The FY 2019 budget request includes a must-fund increase of \$200,000 that is paid to the Federal Protective Service for required security protection at the Postal Square Building in Washington, DC. This building houses several federal agencies and is also home to the National Postal Museum. This increase is included in the Fixed Costs section of this budget submission.

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 2019, NPM's Department of Education and Visitor Services (DEVS) will 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 NPM's traditional programs, including *First Class Problem Solvers* and *The Big Draw*.

The Museum is also planning to retrofit five exhibition galleries to incorporate new educational hubs which will provide interactive learning opportunities for children and their families. 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 NPM's collections and the history of philately in America. FY 2019 will also see the continuation of NPM's dedication to the vision of creating *One Smithsonian* by engaging other SI units in collaborative projects that leverage the resources of multiple museums and research centers to produce quality educational products.

FY 2019 will also be the second year of an initiative to improve the Museum's visitor experience by engaging the entire NPM staff in visitor-related activities.

In FY 2019, the Museum will open a large, pan-Institutional exhibition celebrating the 150th anniversary of Major League Baseball. The 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 numerous artifacts on loan from other museums, including various Smithsonian units. This initiative is being undertaken in support of the Institution's Strategic Plan for creating *One Smithsonian*.

The Museum will also open new rotating exhibitions in the *William H. Gross Stamp Gallery* and the Benjamin Franklin Foyer. These exhibitions will focus on topics currently in the news, and are intended to reach new audiences. The Museum will also continue to promote the exhibition on Alexander Hamilton that is scheduled to open in the third quarter of FY 2018.

In FY 2019, the Museum will develop a new online collections information program that will greatly expand the number of collection objects that are available online. The new program will replace the existing online collections program that is now 11 years 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 2019, the Museum will continue to process new acquisitions, which includes digitizing and cataloguing collection items using the automated collections information system (CIS). Enhanced cataloguing and digital records will be created for all new exhibitions and will be posted online for broader access by the general public.

A major initiative to improve accessibility to off-site collections will remain a Museum priority. In both FYs 2018 and 2019, 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 number 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 2019. The Postmaster General's 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 comprehensive 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. Collections frequently requested by researchers will continue to be reorganized and re-housed to improve public access and long-term preservation. Collections 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 nearly 75 percent of the Museum's core functions and operational costs. These costs include salaries and benefits, utilities, facility maintenance, exhibitions, education, and collection management programs. Fundraising initiatives continue to generate increased support from the private sector to develop and support new exhibitions, research opportunities, educational initiatives, 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 2017 ENACTED	89	10,115	9	1,482	39	8,806	1	114
FY 2018 ESTIMATE	89	10,239	5	1,231	45	10,467	2	125
FY 2019 REQUEST	89	10,239	5	1,320	46	10,659	2	125

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in vital arts and humanities research	6	680	6	680	0	0
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	8	936	8	936	0	0
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	12	1,432	12	1,432	0	0
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	23	2,797	23	2,797	0	0
<i>Education</i>						
Engage and inspire diverse audiences	3	306	3	306	0	0
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	19	2,187	19	2,187	0	0
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	1	102	1	102	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	14	1,535	14	1,535	0	0
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	3	264	3	264	0	0
Total	89	10,239	89	10,239	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 43,400 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 20th anniversary in 2020, cultivates the next generation of professors and curators. SAAM has hosted more than 660 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 is also 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 nation 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 2017, SAAM hosted 365 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 development 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 three new exhibition catalogues scheduled for publication in FY 2019. 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 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 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, exploring cutting-edge topics 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 2019. Major exhibitions include *Artists Respond: American Art and the Vietnam War: 1965–1975*; *David Levinthal*; and two shows from our graphic art collection. *Between Worlds: The Art of Bill Traylor* will continue after opening at the very end of 2018. The Renwick Gallery hosts the *2018 Renwick Invitational* (a biennial favorite) while *No Spectators: The Art of Burning Man* continues for much of the year. As *Burning Man* comes down, part of the permanent collection will be reinstalled in its usual galleries.

As part of its ongoing efforts 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 *Irving Penn: Beyond Beauty*; *Pop Art Prints*; *The Art of Romaine Brooks*; *Down these Mean Streets: Community and Place in Urban Photography*; and *Harlem Heroes: Photographs by Carl Van Vechten*. 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 25 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, National Archives and Records Administration, and the U.S. Patent Office expand the Museum's reach to more diverse audiences. The intern program, hosting 35 students in FY 2017 (from 22 states, Washington, DC, Canada, the Netherlands, and England), 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 2017, 62 teachers from 28 states attended. Another 21 returning teachers participated in the advanced institute for alumni.

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 review 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 2017 ENACTED	64	9,214	39	6,668	6	5,995	1	502
FY 2018 ESTIMATE	64	9,333	33	6,217	20	7,248	1	351
FY 2019 REQUEST	64	9,333	33	6,783	20	5,501	1	115

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		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 216 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 67 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 2019 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 2019 resources will 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 2019 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 recently awarded the Smithsonian Education Innovation Award in recognition of its outstanding accomplishments exemplifying the Smithsonian's commitment to innovation in education. Also in FY 2019, 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 pride. In addition, MoMS will launch *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.

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 a shared national heritage at the local level — in communities across the nation.

Smithsonian Affiliations (2 FTEs and \$371,000) — Now in its 22nd 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 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 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 216 Affiliate organizations in 46 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. New videoconferencing capabilities have also extended the reach of Smithsonian Affiliations. 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) — Smithsonian educators work with Smithsonian content experts to develop products and services that strengthen American education and enhance our ability to compete globally. SCLDA focuses on digital products and services that are based on learning research, testing, and evaluation. Its Smithsonian Learning Lab brings together an ever-growing number of digital resources from all of the museums to provide unlimited learning opportunities to anyone who has internet access. The free online Lab enables everyone to find and customize resources for educational use and share them with a Smithsonian learning community. Many site features, such as the tools to create lessons and activities, specifically address the needs of teachers and students in K–12 classrooms and higher education. To demonstrate the benefits to teaching and learning, and to measure its impact, SCLDA is partnering with major universities to study the use of digital museum content in education.

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 encourages 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 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 Smithsonian's initiative to increase 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 2017 ENACTED	22	2,632	27	3,948	0	214	0	0
FY 2018 ESTIMATE	23	2,839	32	4,068	0	20	0	0
FY 2019 REQUEST	23	2,839	32	4,327	0	20	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	16	1,867	16	1,867	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
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, 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, 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

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 2017 ENACTED	0	14,784	0	0	0	0	0	0
FY 2018 ESTIMATE	0	14,784	0	0	0	0	0	0
FY 2019 REQUEST	0	14,784	0	0	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	0	1,200	0	1,200	0	0
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	0	766	0	766	0	0
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	0	2,400	0	2,400	0	0
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	14,784	0	14,784	0	0

BACKGROUND AND CONTEXT

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

- Research Equipment Pool
- Latino Initiatives Pool
- Asian Pacific American Initiatives Pool
- Collections Care and Preservation Fund
- Information Resources Management 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 Smithsonian 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.

ADDITIONAL BACKGROUND AND CONTEXT — COLLECTIONS CARE

Collections stewardship is a key component and core priority of the Smithsonian's new Strategic Plan. Assembled over 172 years, Smithsonian collections are fundamental to carrying out the Institution's mission and Strategic Plan, serving as the intellectual base for scholarship, discovery, exhibition, and education. As recognized by the America COMPETES Act reauthorization, the proper management, documentation, preservation, and accessibility of collections are important to the nation's research and education infrastructure. Smithsonian collections have a unique and important role in addressing scientific and societal issues of the 21st century, enabling researchers to address such significant challenges as the effects of global change, the spread of invasive species, and the loss of biological and cultural diversity and its impact on global ecosystems and cultures.

As a result, the Institution must substantially improve collections care to ensure that Smithsonian collections are properly preserved and made accessible for current and future generations to study and enjoy. The volume, characteristics, complexity, and age of Smithsonian collections, as well as the variety of discipline-specific standards that

apply to their care, make their management, preservation, and digitization as unprecedented, challenging, and complex as the collections themselves.

Currently, Smithsonian collections total 155 million objects and specimens; 157,300 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 achievement, 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.

Collections stewardship — the systematic development, documentation, management, preservation, and use of collections — is not a single process or procedure, but a series of components which are interwoven, interdependent, and ongoing. The condition of facilities housing collections, the quality of storage equipment and preservation tools, and the ability to document collections in manual and digital formats directly affect the Smithsonian's ability to make collections available to scholars and the general public worldwide. Collections care, storage, and digitization represent a continuum of activities which support the Smithsonian's strategic goals to preserve our natural and cultural heritage, expand the impact of Smithsonian digital collections assets, support interdisciplinary research, and foster a strategic, integrated and sustainable approach to improved stewardship of collections.

MEANS AND STRATEGY — RESEARCH EQUIPMENT POOL (\$1,200,000)

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. Research Equipment Pool 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 leverage its collections and expertise in these important areas of research.

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 \$25.5 million in funding to more than 500 Smithsonian programs and projects.

In addition to a Latino Curatorial Initiative, launched in 2010 and designed to increase Latino representation and scholarship at the Smithsonian, 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 who are represented in universities, museums, and cultural centers which also collaborate with the Smithsonian.

MEANS AND STRATEGY — ASIAN PACIFIC AMERICAN INITIATIVES POOL (\$400,000)

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 25 Smithsonian programs and projects, and increased the Asian Pacific American presence in the Smithsonian's presentation of and research into the American Experience.

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

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, 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. 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.

The Smithsonian's senior leadership acknowledges that an effective strategy for addressing collections challenges depends on a coordinated, Institution-wide approach. Therefore, the following initiatives inform our strategies, budget request, and allocation of resources throughout the Smithsonian community.

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. 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 address the Institution's highest priority collections management needs.

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, 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 construction, 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 now serves as a road map to guide short- and long-term facilities, real estate, and collections care project decisions, providing renovation and new construction strategies that address unacceptable collections space conditions, allow for decompression of overcrowded collections to make them more physically accessible, anticipate future collections growth, and reduce or eliminate reliance on leased space for collections storage.

To address near-term space requirements, the CSFP and the Smithsonian's Facilities Capital request support the planning and design of Pod 6 at the Museum Support Center (MSC); continued mitigation of collections currently stored in hazardous conditions at, and their removal, from failing facilities in Garber Buildings 15, 16, and 18; and various museum revitalization projects which will vastly improve collections storage, preservation, accessibility, and space efficiency. Construction of Pod 6 will complete the intent of the original 1994 MSC Master Plan and initiate the implementation of the CSFP for relocation of at-risk collections from the Garber Facility and several Mall museums. Completion of Pod 6 is also necessary to maintain the critical path for the National Museum of American History's (NMAH) East Wing public renewal project, which requires both temporary and permanent relocation of a significant volume of collections from the Mall building to complete the renovation.

In addition, near-term projects include the construction of two new storage modules adjacent to the Udvar-Hazy Center. The first of the modules will serve as temporary collections swing space during the National Air and Space Museum (NASM) Mall Building revitalization. Once completed, the space will receive at-risk collections from the Garber Facility, further reducing the amount of unacceptable collections space. The construction of the NASM storage module and Pod 6 will provide essential temporary swing space required during the NASM and NMAH building renovations, reducing lease costs and permanent storage expenses for the relocation of at-risk collections from unacceptable storage spaces at the Garber Facility and on the Mall, as well as enable the phased redevelopment of the Garber campus.

The Smithsonian now has robust Institution-wide data on the national collections, their physical condition, state of digitization, and current collections space conditions as a result of three important pan-Institutional initiatives. When combined, this information

provides key tools and direction for improving the management, care, and accessibility of the national collections. In FY 2019, the Smithsonian will continue to build on these collections initiatives and establish action plans for strategically addressing the preservation 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 — INFORMATION RESOURCES MANAGEMENT POOL
(\$2,987,000)**

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.

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 2017 ENACTED	28	3,057	14	-788	0	0	0	0
FY 2018 ESTIMATE	28	3,169	15	-788	0	0	0	0
FY 2019 REQUEST	28	3,169	15	-788	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Understand and Impact 21st Century Audiences						
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	24	2,579	24	2,579	0	0
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	4	590	4	590	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.

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 2019, 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 operational, equipment service, 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 2017 ENACTED	18	1,890	0	0	0	0	0	0
FY 2018 ESTIMATE	18	1,906	0	0	0	0	0	0
FY 2019 REQUEST	18	1,906	0	0	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		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.

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

The facility also houses laboratories for Smithsonian scientists and other federal agencies, such as the Walter Reed Biological Unit (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 and laboratory equipment, 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 2019 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.

In FY 2019, MSC staff will continue to support maintenance of the national collections and the research equipment needed to protect staff and collections. 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 also assist in laying the groundwork to prepare for Pod 6, including planning the relocation of the Botany greenhouse, and will conduct a comprehensive review of the Suitland Collection Center master plan.

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 2017 ENACTED	22	3,320	0	-6	1	205	0	0
FY 2018 ESTIMATE	22	3,359	0	5	2	423	0	0
FY 2019 REQUEST	22	3,359	0	5	2	371	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	7	1,143	7	1,138	0	-5
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	1	106	1	109	0	3
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	1	154	1	145	0	-9
<i>Education</i>						
Engage and inspire diverse audiences	1	104	1	106	0	2
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	8	1,068	8	1,069	0	1
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	4	784	4	792	0	8
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 2019, 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 important 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 National 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 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 2017 ENACTED	20	2,316	5	508	2	2	0	0
FY 2018 ESTIMATE	20	2,423	5	510	1	1	0	0
FY 2019 REQUEST	20	2,423	5	530	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in vital arts and humanities research	1	220	1	220	0	0
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	5	406	5	406	0	0
Understand and Impact 21st Century Audiences						
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	7	981	7	981	0	0
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	2	385	2	385	0	0
Total	20	2,423	20	2,423	0	0

BACKGROUND AND CONTEXT

The Smithsonian Institution Archives (SIA) serves as the institutional memory of a unique cultural organization. The history of the Smithsonian, in many ways, is the history of scientific enterprise in America, particularly in the 19th century. 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 most of the Institution's records. The permanent records are safeguarded and preserved in leased facilities in Washington, DC and Iron Mountain in Boyers, Pennsylvania. Electronic records are supported on SIA-owned computer servers and at the Institution's data center in Herndon, Virginia. In addition, SIA develops policies and 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.

MEANS AND STRATEGY

In FY 2019, SIA will continue to focus on capturing, preserving, and providing access to research materials on the Smithsonian's history. SIA will continue to support the needs of thousands of researchers seeking information from the Archives; provide online access to ever more information from or about the holdings via its robust website; continue to collaborate fully with Smithsonian units serving broad external audiences (such as Smithsonian Associates and the Smithsonian Affiliations Program); set archival collections-management standards; and assist all Smithsonian units with the proper disposition of their records.

SIA's major challenge is to balance existing resources with the increased costs associated with archiving in a digital world. The costs of maintaining basic operations, such as acquiring up-to-date software, properly running servers, and renewing mass-Web-capture contracting services, have increased significantly in recent years. As the Institution's reach into this ever-expanding realm continues to grow, it is essential that the Archives be equipped with the necessary tools and technologies to continue capturing, preserving, and ensuring access to these digital materials, which are a vital part of the Institution's continuing history.

NONAPPROPRIATED RESOURCES — General trust funds support SIA's basic operational costs, such as office, archival, and conservation supplies; software licenses; and maintenance of high-end equipment. Trust funds also support the salaries and benefits of archivists and conservators, 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. Additionally, general trust funds support SIA's Web and new media outreach program that seeks to expand the awareness, use, and accessibility of the SIA's collections and resources. Greater knowledge about these collections and other resources will support the Smithsonian's catalytic role in preserving American history, world cultures, scientific research, and the arts.

SMITHSONIAN LIBRARIES

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2017 ENACTED	86	11,146	10	1,808	8	1,860	0	0
FY 2018 ESTIMATE	86	11,273	9	1,825	9	1,702	0	0
FY 2019 REQUEST	86	11,373	10	1,937	9	1,787	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in impactful scientific research and discovery	19	2,819	19	2,919	0	100
Engage in vital arts and humanities research	21	2,925	21	2,925	0	0
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	14	1,729	14	1,729	0	0
Understand and Impact 21st Century Audiences						
Exhibitions						
Offer compelling, first-class exhibitions	1	102	1	102	0	0
Education						
Engage and inspire diverse audiences	1	95	1	95	0	0
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	22	2,350	22	2,350	0	0
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	8	1,253	8	1,253	0	0
Total	86	11,273	86	11,373	0	100

BACKGROUND AND CONTEXT

The Smithsonian 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.

The FY 2019 budget request includes an increase of \$100,000 for inflationary increases in library subscriptions, which appears in the Fixed Costs section of this budget submission.

MEANS AND STRATEGY

The Smithsonian Libraries' 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 Grand Challenges. In FY 2019, SIL will continue to broaden interactive engagement with users by expanding projects that include digital transcription of manuscripts and working with Web-based communities — thereby making SIL 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 Libraries 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 I See Wonder 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 SOVA (Smithsonian Online Virtual Archives). 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, SIL provides access to research collections covering more than 467,000 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 SIL and Smithsonian digital publications and products.

SIL collaborates with other Smithsonian units and external organizations in many ways. The Libraries creates and publishes digital research products to give scholars in all fields the documentation they need for their research. These products include republication 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 2019, SIL will continue to increase digitization projects in history, arts, and culture as part of the Smithsonian Libraries initiative — the Cultural Heritage Library. Through these projects, SIL participates with similar institutions such as the Consortium for the History of Science, Technology, and Medicine and the Global Philatelic Library. SIL's contribution of rare/special collections records to the Consortium'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.

In addition, 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. Also, in 2018, to give Smithsonian authors, researchers, and scientists more visibility, SIL launched Smithsonian Profiles, 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 preserve and stabilize 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 suburban Maryland.

In FY 2019, planning will continue for the new Information Commons at the Smithsonian Environmental Research Center (SERC) and for the relocation of the National Air and Space Museum's Library to the Udvar-Hazy Center in Chantilly, Virginia.

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.

In FY 2019, to achieve the strategic goal of Understanding and Impacting 21st Century Audiences, SIL will open an exhibition in the National Museum of Natural History focused on the ivory trade and the growing movement to protect critically endangered species from extinction. In the SIL Gallery in the National Museum of American History, our 50th anniversary exhibition will open in November of 2018. *Magnificent Obsessions* will feature treasures from the Smithsonian Libraries and combine them with stories of book collectors to show how they influenced the Libraries development over 170 years and how SIL will move into the future. All of the Libraries' exhibitions have an online component to reach a larger audience and allow staff to keep the exhibitions updated for future learning. Exhibitions will have new educational content created by SIL's education and outreach office, and will include a unique docent component for teenagers.

NONAPPROPRIATED RESOURCES — General trust funds help defray the costs of providing information services to Smithsonian units, and support publications, public programs, and fundraising efforts. In FY 2019, SIL will continue to raise funds through its own advancement efforts anchored to the occasion of the Libraries' 50th anniversary. SIL 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.

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 2017 ENACTED	95	51,371	17	3,426	0	225	0	0
FY 2018 ESTIMATE	95	52,009	18	3,608	1	330	0	0
FY 2019 REQUEST	95	52,509	18	3,608	1	430	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		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	11	4,320	0	0
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	28,865	40	29,365	0	500
Total	95	52,009	95	52,509	0	500

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 2019 budget request includes an increase of \$500,000 to cover increased communication costs, which is 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, Expanding Digital Technologies, 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 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 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; and
- Increase the use of data science to drive innovation in research in a cost-effective manner.

Digitization Assessment and Planning

The Smithsonian continues to implement a framework of digitization policies; conduct assessments to account for the state and progress of digitization; and clarify digitization priorities to guide resource allocation and planning. Analysis of our FY 2017 Digitization Assessment is now under way but data from our FY 2016 assessment showed that the Smithsonian has prioritized 15 million museum objects/specimens for digitization and has successfully digitized 2.9 million objects/ specimens (or 19 percent)

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 data management plans (DMPs) to ensure that the Smithsonian can effectively manage the digital content created as part of digitization activities as well as for scientific studies.

In addition, the Smithsonian has strategically invested in creating a standard mass-digitization process that enables replicable, cost-effective, high throughput, and high-quality digitization for all Smithsonian priority collections. Digitization efforts to implement this process have resulted in digital images for 800,000 collection objects in 2016 alone, thereby doubling the rate of digitization at the Smithsonian. This budget request will accelerate the Institution's digitization progress by allowing us to complete the entire collections of three more of our museums, and make continued progress in the digitization of other large, important collections in our other museums.

The continued addition of 3D models of our collection on our renowned Smithsonian 3D website continues to showcase the Smithsonian as an international leader in 3D digitization of museum collections. In 2016 we added the 3D model of the Apollo 11 lunar module, the most sophisticated 3D effort undertaken in any museum to date. We also 3D-digitized the exterior of the space shuttle *Discovery*, and began developing automation processes that help us to scale up our 3D digitization efforts while ensuring that our 3D data models remain durable over time. Our 3D digitization effort provides compelling evidence that 3D data enhances the effectiveness of curators, educators, scientists, and conservators in fulfilling the Smithsonian's mission. As a result, the Smithsonian's initiative has captured the imagination of educators, learners, and policy makers around the nation by providing access to 3D printable data on priceless national collection objects.

NONAPPROPRIATED RESOURCES — General trust funds support salaries and benefits costs of personnel and other related costs of the OCIO.

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 2017 ENACTED	181	35,756	210	44,720	4	10,965	2	797
FY 2018 ESTIMATE	182	36,234	217	44,782	6	7,560	2	610
FY 2019 REQUEST	182	36,405	219	44,670	6	7,504	2	665

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in vital arts and humanities research	1	174	1	174	0	0
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	1	196	1	196	0	0
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	2	413	2	413	0	0
Education						
Engage and inspire diverse audiences	0	71	0	71	0	0
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	3	494	3	494	0	0
Security						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	1	205	1	205	0	0
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	174	34,681	174	34,852	0	171
Total	182	36,234	182	36,405	0	171

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 2019 budget request includes an increase of \$171,000 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 exchange; 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, and advocate for the use of small, disadvantaged, woman- and veteran-owned businesses throughout Smithsonian procurement operations.

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 2017 ENACTED	24	3,499	0	0	0	0	0	0
FY 2018 ESTIMATE	24	3,538	0	0	0	0	0	0
FY 2019 REQUEST	24	3,538	0	0	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		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	24	3,538	0	0
Total	24	3,538	24	3,538	0	0

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.

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 to Smithsonian senior management any evidence of administrative misconduct for possible disciplinary action.

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 2017 ENACTED	395	76,327	0	0	0	0	0	0
FY 2018 ESTIMATE	401	77,045	0	0	0	0	0	0
FY 2019 REQUEST	409	82,045	0	0	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Preserve Our Natural and Cultural Heritage						
Facilities and Safety						
Deliver an aggressive and professional maintenance program	395	72,268	402	76,768	7	4,500
Security						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	6	4,777	7	5,277	1	500
Total	401	77,045	409	82,045	8	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. More than 30 million people visit the Smithsonian 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."

To do this, 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 at the end of FY 2016 was \$8.1 billion. This includes the new National Museum of African American History and Culture. However, our current maintenance budget is less than 1 percent of the CRV; therefore, a major increase in the deferred maintenance backlog will continue. The Smithsonian's maintenance requirements have been validated through the Facility Condition Assessment process and Reliability Centered Maintenance (RCM) analysis, which are the industry standards for evaluating physical plant infrastructure requirements.

The FY 2019 budget request includes increases of 7 FTEs and \$4,500,000 to help the maintenance program maintain APPA Level 3 services (out of 5) and 1 FTE and \$500,000 for security maintenance requirements.

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 minor repair program, using the 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 \$898 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 2019 budget request includes programmatic increases of 8 FTEs and \$5,000,000. The increase includes 7 FTEs and \$4,500,000 for the facilities maintenance program and 1 FTE and \$500,000 for security maintenance requirements.

- **Facilities Maintenance (+\$4,500,000, +7 FTEs)** — The Smithsonian requests \$4,500,000 and 7 FTEs to support maintenance of existing facilities and systems. The Institution's facility footprint has increased by three million square feet during the past 15 years, which included the addition of several modern new systems. As mentioned above, modern replacement systems installed during building renovations are more sophisticated and complex, and require highly skilled maintenance staff.

More specifically, this budget request includes funding 4 FTEs for utility systems repair operators, 2 FTEs for engineering technicians and 1 FTE for a maintenance project supervisor. The new staff will help improve the preventive maintenance program and slow the increase in deferred

maintenance. The request also includes funding to support the roofing repair program. Collectively, the Institution's roofs remain in the worst condition of the eight building systems tracked by Facility Condition Assessments, which generate Facility Condition Index ratings. The state of the roofs poses a risk to staff and visitor safety, as well as the preservation of collections. The funding will allow the maintenance program to continue fixing those roofs in the greatest need of repair. The facilities with the lowest rated roofs include the Udvar-Hazy Center, Natural History Museum, National Zoological Park (including the Smithsonian Conservation Biology Institute), the Smithsonian Tropical Research Institute, and Museum Support Center. The Facilities Capital portion of the FY 2019 budget request includes funding to replace the Udvar-Hazy Center roof. The roofing repair program also advances the Institution's efforts to comply with federal initiatives on energy efficiency and sustainable buildings.

- **Security Maintenance (+\$500,000, +1 FTE) —** For FY 2019, the Smithsonian requests an increase of \$500,000 and 1 FTE to support security system maintenance of facilities. As the physical footprint of the Smithsonian Institution has increased and as facilities are revitalized, the maintenance requirements of their security systems and elements have also increased. This funding will allow for deferred life-cycle replacement of security equipment, and enable SF to improve barrier and bollard systems, anti-terrorism mitigation systems, as well as other deferred maintenance activities.

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 2017 ENACTED	1,325	223,496	22	2,441	3	343	0	0
FY 2018 ESTIMATE	1,361	226,581	20	2,874	4	450	0	0
FY 2019 REQUEST	1,361	228,404	27	3,475	4	425	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		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	149,605	635	151,428	0	1,823
<i>Security</i>						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	722	76,502	722	76,502	0	0
Total	1,361	226,581	1,361	228,404	0	1,823

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 2019 budget request includes an increase of \$1,823,000 for utilities, postage, and rent, all of which are 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 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.

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 2017 Enacted	\$133,903,000
FY 2018 Continuing Resolution Level	\$132,994,000
FY 2019 Request	\$219,500,000

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2018		FY 2019		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	48	115,194	48	211,000	0	95,806
<i>Security</i>						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors, and volunteers	0	7,800	0	8,500	0	700
Subtotal	48	122,994	48	219,500	0	96,506
National Air and Space Museum — Udvar-Hazy Center Collections Storage Module	0	10,000	0	0	0	-10,000
Total	48	132,994	48	219,500	0	86,506

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 (NRC) Facility Condition Assessments (FCAs) 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 — 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 is 89.0 percent, a slight improvement from FY 2015, due to the completion of the Renwick Gallery of Art revitalization and the construction of the National Museum of African American History and Culture. This percentage is based on an estimated overall CRV of \$8.126 billion and an estimated \$898.2 million value of the Smithsonian’s backlog of deferred maintenance and repair. The dollar value of the backlog does NOT equate to a total project estimate for the work and the soft costs required to accomplish the repairs/replacements and eliminate the backlog.

Alarming, the individual FCI of at least nine Smithsonian facilities declined, two of which fell from fair to poor in value. 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 critical 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 \$219.5 million for its Facilities Capital Program in FY 2019.

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 \$219,500,000 and 48 FTEs for the Facilities Capital Program in FY 2019. 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 Zoological Park and other priority areas, including projects for the National Museum of Natural History, the National Museum of American History, 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 the National Museum of the American Indian in New York City and Washington, DC; infrastructure upgrades at the Smithsonian Tropical Research Institute; infrastructure and safety upgrades at the Smithsonian Astrophysical Observatory; and mitigation of safety and security hazards throughout the Institution.

The following chart summarizes the Institution's request for the highest priority FY 2019 Facilities Capital projects.

SMITHSONIAN INSTITUTION						
Federal Facilities Capital Program Summary						
FY 2017 – FY 2019						
CATEGORY	<i>\$Millions</i>	<i>Federal</i>	<i>Trust*</i>	<i>Federal</i>	<i>Trust*</i>	<i>Congress</i>
		<i>Received</i>	<i>Estimate</i>	<i>CR Level</i>	<i>Estimate</i>	<i>Request</i>
		FY 2017		FY 2018		FY 2019
REVITALIZATION						
Major Projects						
Anacostia Community Museum		1.2				
Cooper Hewitt, Smithsonian Design Museum		1.7			5.8	
Donald W. Reynolds Center						
Freer Gallery of Art						
Hirshhorn Museum and Sculpture Garden		1.0				0.7
National Air and Space Museum (NASM)		7.0			50.0	127.0
NASM Steven F. Udvar-Hazy Center		1.1				10.0
National Museum of American History		4.0				4.0
National Museum of the American Indian		3.0				4.0
National Museum of Natural History		13.9			8.2	3.5
National Zoological Park		16.7	5.1		1.6	18.5
Quadrangle						
Smithsonian Astrophysical Observatory		1.4				0.9
Smithsonian Environmental Research Center		1.5				2.0
Smithsonian Institution Building (Castle)		2.0			4.0	1.5
Smithsonian Tropical Research Institute		2.6			0.8	1.5
Collections Space & Support Program (Multiple Locations)		4.3	0.5		1.0	4.0
Fire-Alarm Panel Replacement						4.0
Multiple Site Projects and General Capital Support		12.2				15.9
Facilities Planning and Design		20.3				17.0
SUBTOTAL		93.9	5.6	123.0	65.6	219.5
CONSTRUCTION						
NASM Udvar-Hazy Collections Storage Module		40.0		10.0		
National Zoological Park					70.0	
SUBTOTAL		40.0	0.0	10.0	70.0	0.0
TOTAL PROGRAM		133.9		133.0		219.5
						63.2

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	127,000
NASM Udvar-Hazy Center (UHC)	Repair Leaks of Building Envelope and Roof	10,000
National Zoological Park (NZN)	Renew Bird House and Great Flight Cage	15,000
	Security — Install Permanent Visitor Screening	1,000
	Upgrade Life-Safety and Infrastructure	2,500
Cooper Hewitt, Smithsonian Design Museum (CHSDM)	Replace Mansion Chillers and Cooling System	5,800
National Museum of American History (NMAH)	Improve Objects Processing Facility (OPF) and Swing Space	4,000
National Museum of Natural History (NMNH)	Upgrade Electrical System and Components	3,500
National Museum of the American Indian (NMAI)	Replace and Modernize Electronic Security (NMAI-NY)	3,000
	Upgrade Mass-Notification and Fire Panel Systems (NMAI-NY)	1,000

Facility	Project	\$000
Smithsonian Institution Building (Castle)	Façade Repair and Stabilization Implementation	1,000
	MEP Systems Repairs for Failure Risk Mitigation	500
Smithsonian Tropical Research Institute (STRI)	Replace and Improve Facilities at Galeta (Phase 1)	1,500
Smithsonian Astrophysical Observatory (SAO)	Repair Roads at Fred L. Whipple Observatory (SAO-AZ)	850
Smithsonian Environmental Research Center (SERC)	Construct Site Infrastructure/Renovate Homestead House	2,000
Suitland Collections Center (multiple facilities)	Decontaminate Collections in Building 16 (Garber)	2,000
	Upgrade Emergency Generator/Switchgear (NMAI-CRC)	2,000
Multiple Facilities	Fire-Alarm Panel Replacements and Upgrade Security Mass-Notification Systems	4,000
Multiple Locations	Building projects less than \$1,000,000	8,850
	Construction Supervision Administration	<u>7,000</u>
TOTAL, REVITALIZATION PROJECTS		\$202,500
FACILITIES PLANNING AND DESIGN		<u>\$17,000</u>
FY 2019 TOTAL REQUEST		\$219,500

REVITALIZATION PROJECTS

PROJECT TITLE: Revitalize Building Envelope and Infrastructure
INSTALLATION: National Air and Space Museum (NASM) — National Mall Building
LOCATION: Washington, DC

<u>FY 2019 COST ESTIMATE (Thousands of Dollars):</u>	\$127,000*
<u>PRIOR-YEAR FUNDING</u>	\$96,953*
<u>FUTURE-YEAR FUNDING</u>	<u>\$381,047*</u>
Total	\$605,000*

* 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 \$127.0 million in FY 2019 to fund construction activities and award contract(s) for continued design-assist work, constructability reviews, estimating, and for early procurement of long lead items, such as stone cladding, artifact protection, and preparation of swing space for staff.

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 2017 and final completion is projected for 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). Final design documents will help establish the CMc guaranteed maximum price (GMP). The budget, scope of work, and implementation schedule will be further refined as the Smithsonian establishes GMP with the CMc. Construction award at GMP is scheduled by the fourth quarter of FY 2018. 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.

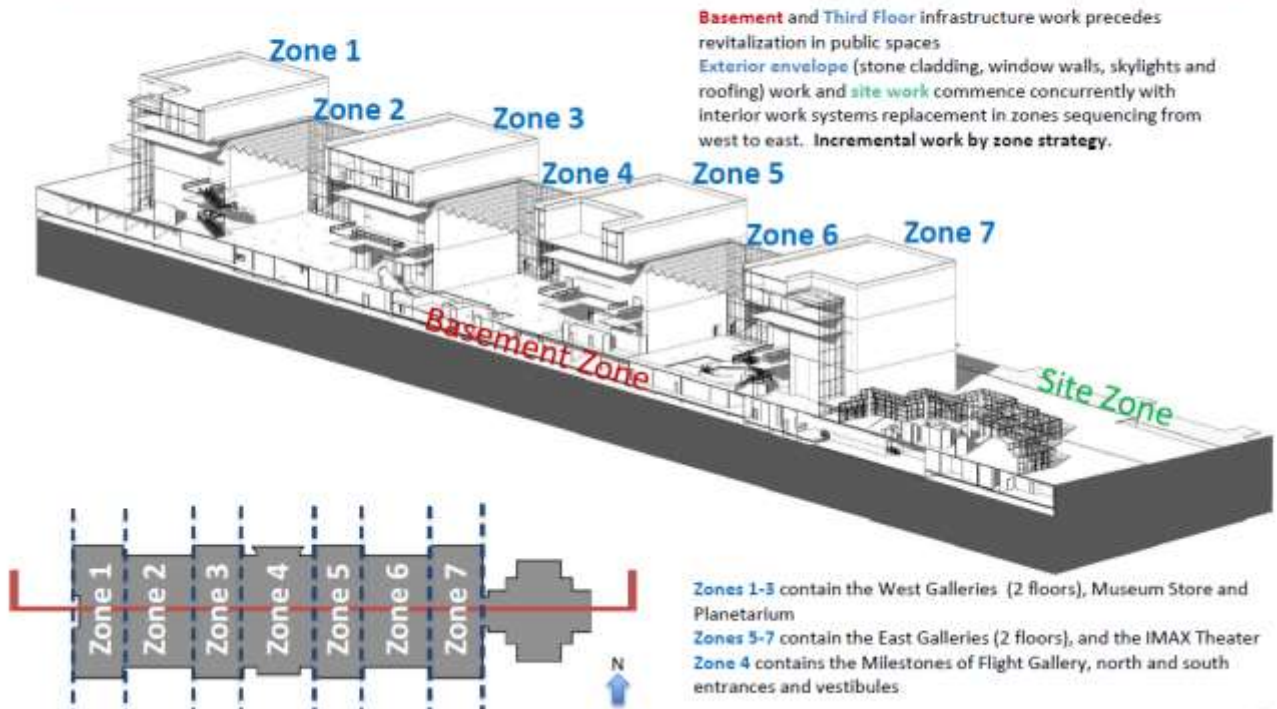
IMPACT OF DELAY:

If funding is delayed, the pace of revitalization work begun in FY 2018 will be affected. 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, 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 2019 COST ESTIMATE (Thousands of Dollars):</u>	\$10,000*
<u>PRIOR-YEAR FUNDING:</u>	\$0*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$8,800*</u>
Total	\$18,800*

* 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 taken place but 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 \$10.0 million in FY 2019 to begin repairing the leaks.

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 reached 35 percent completion in May of 2017, with 65 percent completion projected for February of 2018, with the final design completion expected by the first quarter of FY 2019.

PROJECT TITLE: Renew Bird House and Great Flight Cage
INSTALLATION: National Zoological Park (NZIP)
LOCATION: Washington, DC

<u>FY 2019 COST ESTIMATE (Thousands of Dollars):</u>	\$15,000*
<u>PRIOR-YEAR FUNDING:</u>	\$4,000*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$37,300*</u>
Total	\$56,300*

* Does not include funding in Facilities Planning and Design

BUILDING BACKGROUND:

The NZIP'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 poorest 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 needs upgrades to its primary and secondary bird containment systems, due to 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 \$15.0 million in FY 2019 to continue this project.

PROGRESS TO DATE:

Executed with the \$4.0 million appropriated in FY 2017, construction of the bird collections swing space is 98 percent complete, with completion expected in March of 2018. Relocation of animals is under way. The Bird House (BH) closed to the public in January of 2017. Request for construction proposals (RFP) for the revitalization of the Bird House and Great Flight Cage Aviary project is planned for 2018, with a construction contract award projected for the fall 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 collection's captive habitat. 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: Security — Install Permanent Visitor Screening
INSTALLATION: National Zoological Park (NZN)
LOCATION: Washington, DC

<u>FY 2019 COST ESTIMATE (Thousands of Dollars):</u>	\$1,000*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$6,000*</u>
Total	\$7,000*

* Does not include funding in Facilities Planning and Design

BUILDING BACKGROUND:

Presently, the 163-acre National Zoological Park receives approximately 2.5 million visitors per year. It consistently ranks as one of the region's top family attractions, and is a popular tourist attraction for people from within the United States and around the world. It is open to the general public 364 days per year, weather permitting. All Smithsonian public venues have security screening in place except the NZP. For the last several years, the Smithsonian Office of Protection Services (OPS) and the National Zoological Park Police (NZPP) have funded and installed temporary screening measures during peak visitation periods to protect the visitors, staff, volunteers and living collections at the Zoo.

PROJECT JUSTIFICATION:

Temporary and rent-based solutions are no longer feasible and do not meet Smithsonian security standards. The goal for this project is to create a permanent visitor screening solution 364 days per year in a way that minimizes the impact on the visitor experience while also managing the flow and quantity of visitors. This project will improve overall security every day and at all visitor entrances, as well as accommodate entry capacity and flow during peak hours of visitation and events without excessive wait times; create operational flexibility based on events and needs with both temporary/moveable measurements and permanent resources; implement security measures and solutions which will not adversely impact visitor experiences or the beauty of the Park; incorporate, not preclude, future projects identified in the 2008 Comprehensive Master Plan; and validate visitor counts and crowd flow assumptions.

PROJECT DESCRIPTION:

The project includes permanent access control fencing and visitor-screening checkpoints at the Connecticut Avenue entrance, the Bus Lot entrance, and a new Lower Zoo entrance, complete with pedestrian and vehicular traffic safety improvements in accordance with the adopted 2008 Comprehensive Facilities Master Plan. The Smithsonian requests \$1.0 million in FY 2019 to install the first phase of work for the permanent access control fencing.

PROGRESS TO DATE:

The Program of Owners' Requirements (POR) was completed in 2016, followed by a data collection and site survey phase. Schematic design was completed in 2017 with final design completion projected for late 2018.

IMPACT OF DELAY:

Concerns about large crowds and ongoing threats of terrorism as well as active shooter security risks, and lack of standardization of security screening compared to other Smithsonian venues, expose NZP's visitors and staff to unacceptable risk. The impact of a delay could be catastrophic, resulting in needless severe injury or death to visitors, staff, volunteers and dignitaries from all over the globe, not to mention the living collections of rare and endangered species that the NZP is committed to protect and preserve from extinction.

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 2019 COST ESTIMATE (Thousands of Dollars):</u>	\$2,500*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$49,900*</u>
Total	\$52,400*

* 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. With previous appropriations, the smoke control system at the Great Apes House is under construction and will be completed in early 2018. Additionally, infrastructure projects not already completed per the master plan include: storm-water 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 \$2.5 million in FY 2019 to continue the NZIP's major capital renewal program, per the adopted comprehensive facilities master plan, 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. 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. Design for visitor safety improvements at the Panda House is complete, as is the design work for the smoke-evacuation system. More than 15 projects are in the planning and design stages for the current Five-Year Capital Plan, and designs for the FY 2019 appropriation cycle will be completed in FY 2018.

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: Replace Mansion Chillers and Cooling System
INSTALLATION: Cooper Hewitt, Smithsonian Design Museum (CHSDM)
LOCATION: New York, New York

FY 2019 COST ESTIMATE (Thousands of Dollars): \$5,800*

* Does not include funding in Facilities Planning and Design

BUILDING BACKGROUND:

The 64-room Carnegie Mansion, designed by the architectural firm of Babb, Cook & Willard, was built between 1899 and 1902. It was the first private residence in the United States to have a structural steel frame and one of the first in New York to have a residential Otis passenger elevator (now in the collection of the Smithsonian's National Museum of American History). The Mansion was transferred to the Smithsonian in 1972 and the Museum opened there in 1976.

PROJECT JUSTIFICATION:

The two primary chillers are currently more than 20 years old and approaching the end of their useful service lives. Additionally, they use R22 refrigerants, which are being phased out. The rooftop cooling towers are also at the end of their life cycle and require frequent emergency maintenance. Since the Museum's 2014 reopening and the ensuing expanded visitation, demands have increased on these vital environmental system components. Increased demand has accelerated the frequency of service calls and the rate of component deterioration.

PROJECT DESCRIPTION:

The Smithsonian requests \$5.8 million in FY 2019 to replace two primary chillers, two cooling towers, and associated pumps with new, energy-efficient equipment, and to upgrade the building automation system and eliminate pneumatic controls and operators.

PROGRESS TO DATE:

Design is substantially complete and acquisition planning is in process to award a construction project in the fall of 2018.

IMPACT OF DELAY:

A delay in completing this project will result in continued degradation of the HVAC system efficiency and reliability, thereby degrading the collections environment, as well as increasing utility costs.

PROJECT TITLE: Improve Objects Processing Facility (OPF) and Swing Space
INSTALLATION: National Museum of American History (NMAH)
LOCATION: Washington, DC

<u>FY 2019 COST ESTIMATE (Thousands of Dollars):</u>	\$4,000*
<u>PRIOR-YEAR FUNDING:</u>	<u>\$1,000*</u>
Total	\$5,000*

* Does not include funding in Facilities Planning and Design

BUILDING BACKGROUND:

The National Museum of American History, *Kenneth E. Behring Center* (NMAH) is one of the Smithsonian's most visited museums. This modern, classical building (752,000 gross square feet) contains a variety of exhibitions that explore America's technological, scientific, cultural, and political history. The revitalization of the Museum's public spaces continues with the renovation of the West Wing. The second-floor exhibits in this wing, based on the theme of democracy, re-opened in 2017, and the third-floor exhibits, on American culture, will re-open in 2018 and 2020.

PROJECT JUSTIFICATION:

The current Objects Processing Facility (OPF), located adjacent to the loading dock on the lower level of the building, where all artifacts entering and exiting the Museum are processed, does not meet Smithsonian collections care and security standards. Access doors are too small to accommodate large crates, making it necessary to open the crates in the loading dock area before bringing objects into the facility; the secure storage area is too small to accommodate large objects; shelving and storage cabinets are inadequate; office, receiving, and processing functions are not separated; size, layout, and circulation are inadequate for optimal processing operations; the HVAC system does not maintain required temperature and humidity settings for objects; and a room with controlled lighting is not available for photographing objects. Since the OPF must remain operational, it will be necessary to renovate a nearby area for swing space to house temporary OPF operations. This project is also a critical predecessor for the future revitalization of the Museum's East Wing because it supports functions required for temporary and permanent relocation of artifacts.

PROJECT DESCRIPTION:

The Smithsonian requests \$4.0 million in FY 2019 for Phase 2 of the project to renovate the permanent OPF to meet all Smithsonian collections care and security standards. (Phase 1 of the project, funded in FY 2018, consists of renovating a nearby former cold-storage room into swing space to house temporary OPF operations while the permanent OPF is under renovation.) The permanent OPF improvements will include enlarging the doors from the loading dock to the receiving area to accommodate large crates; enlarging the secure storage room to accommodate large objects; providing new shelving and storage cabinets; separating the office, receiving, and processing functions with appropriately sized doors between the spaces; improving the size, layout, circulation and sequence for processing by infilling the lower elevation area to be contiguous with the main floor plate; improving the HVAC system to maintain appropriate temperature

and humidity settings; and providing a photography room with controlled lighting to document objects.

PROGRESS TO DATE:

Design work began in FY 2015 and was completed in FY 2017.

IMPACT OF DELAY:

Delaying the renovation of the single centralized OPF for the entire Museum to bring this substandard space up to current Smithsonian collections care and security standards will continue to put all of the artifacts entering and exiting the building at great risk.

PROJECT TITLE: Upgrade Electrical Systems and Components
INSTALLATION: National Museum of Natural History (NMNH)
LOCATION: Washington, DC

<u>FY 2019 COST ESTIMATE (Thousands of Dollars):</u>	\$3,500
<u>FUTURE-YEAR FUNDING:</u>	<u>\$6,500</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. At more than 50 years of age, 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:

Specific 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 electrical upgrade. The Smithsonian requests \$3.5 million in FY 2019 to continue the ongoing renovation process, with a particular focus on upgrading the electrical systems.

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 study offered preliminary recommendations and cost estimates for addressing building-wide electrical problems and shortcomings through phased implementation. 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. Currently, design continues with the electrical engineers defining requirements for construction documents. This well-defined infrastructure renovation is essential to NMNH's continued service to the public.

IMPACT OF DELAY:

If unaddressed, electrical systems will continue to deteriorate and environmental conditions and safety features required for the Museum's collections and the visiting public cannot be maintained. Ultimately, a compromised electrical system would also impede and delay the Museum's exhibit re-installation program.

PROJECT TITLE: Replace and Modernize Electronic Security
INSTALLATION: National Museum of the American Indian (NMAI-NY)
LOCATION: New York City, New York

<u>FY 2019 COST ESTIMATE (Thousands of Dollars):</u>	\$3,000
<u>PRIOR-YEAR FUNDING:</u>	\$2,650*
<u>FUTURE-YEAR FUNDING:</u>	<u>TBD</u>
Total	\$5,650

* Does not include funding in Facilities Planning and Design

PROJECT DESCRIPTION:

The collection storage areas, gallery infrastructure, and public/staff separation areas of the NMAI-NY facility do not comply with the Smithsonian's security design criteria. The result is a lack of adequate electronic and physical security to protect the staff within the facility and the collections located in the galleries and housed in storage areas. Security modernization will include access control, collections and library storage and processing security, and Museum perimeter protection, as well as modernizing the Office of Protection Services (OPS) work spaces and locker rooms located in the basement and on the first floor. The Smithsonian requests \$3.0 million in FY 2019 to continue this project.

PROGRESS TO DATE:

Final construction documents to modernize electronic security were completed in mid-2017. Final construction documents to modernize the OPS work offices and the locker rooms were completed in late 2017.

IMPACT OF DELAY:

Without the funds requested, both administrative and uniformed OPS personnel will continue to operate in substandard spaces. Electronic security functionality is impeded with outdated software and physical devices, putting the safety and security of staff, visitors, and collections at risk.

PROJECT TITLE: Upgrade Mass-Notification System and Fire Panels
INSTALLATION: National Museum of the American Indian (NMAI-NY)
LOCATION: New York City, New York

<u>FY 2019 COST ESTIMATE (Thousands of Dollars)</u>	\$1,000*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$1,000</u>
Total	\$2,000

* Does not include funding in Facilities Planning and Design

PROJECT DESCRIPTION:

Smithsonian fire panels at the National Museum of the American Indian in New York City are a generation out of date and spare parts are becoming scarce. The fire panels will soon reach the point where they can no longer be repaired and the fire-alarm system will be in jeopardy of non-functionality. The fire panels need to be replaced with modern equipment. Additionally, the mass-notification system is essential to Smithsonian security to provide instructions to visitors and staff during an emergency. Work needs to be coordinated with the General Services Administration (GSA) and the other tenants of the building. Accordingly, the Smithsonian requests \$1.0 million in FY 2019 to upgrade obsolete fire panels and install a mass-notification system.

PROJECT TITLE: Façade Repair and Stabilization Implementation
INSTALLATION: Smithsonian Institution Building (SIB)
LOCATION: Washington, DC

<u>FY 2019 COST ESTIMATE (Thousands of Dollars):</u>	\$1,000
<u>PRIOR-YEAR FUNDING:</u>	\$5,000
<u>FUTURE-YEAR FUNDING:</u>	<u>\$1,000</u>
Total	\$7,000

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 2019 to continue 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 one-third has been repaired. Work will continue into FY 2020 to complete the interim stabilization.

PROJECT TITLE: MEP Systems Repairs for Failure Risk Mitigation
INSTALLATION: Smithsonian Institution Building (Castle)
LOCATION: Washington, DC

<u>FY 2019 COST ESTIMATE (Thousands of Dollars):</u>	\$500
<u>PRIOR-YEAR FUNDING:</u>	<u>\$600</u>
Total	\$1,100

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, and is listed by the Department of the Interior as a National Historic Landmark.

PROJECT JUSTIFICATION:

It has been more than 40 years since the last significant comprehensive upgrades were made to the mechanical, electrical, and plumbing (MEP) systems at the Smithsonian Castle, and localized failures are becoming increasingly frequent. Major piping failures in recent years have resulted in flooding in public areas, temporary closures of office areas, and major damage to historic building elements and finishes. Until a full redesign and replacement of these systems is done, the possibility of catastrophic systems failure is increasingly likely. A fire in the third-floor Castle Library in the summer of 2017 further demonstrated the building's vulnerability if MEP systems are not repaired in a timely manner.

PROJECT DESCRIPTION:

In order to reduce the risk of such failures and permit continued occupancy of the building prior to full building revitalization, a comprehensive assessment of equipment, piping, and cabling has identified interim measures that can be taken, including partial replacement and/or localized duplication of the system parts. This funding will be used to make the most urgent interim repairs. The Smithsonian requests \$500,000 in FY 2019 to conduct these essential repairs.

PROGRESS TO DATE:

With the funding requested, a significant number of the most important system repairs and modifications will be made by FY 2020.

IMPACT OF DELAY:

Delay of this work puts the systems at risk of serious failure, requiring full or partial building closure and the relocation of staff from the building in advance of the planned administrative space consolidation and building revitalization, thereby unnecessarily raising the Smithsonian's operational and facilities capital costs.

PROJECT TITLE: Replace and Improve Facilities at Galeta (Phase 1)
INSTALLATION: Smithsonian Tropical Research Institute (STRI)
LOCATION: Panama

<u>FY 2019 COST ESTIMATE (Thousands of Dollars):</u>	\$1,500
<u>PRIOR-YEAR FUNDING:</u> (Planning and Design not included)	\$750
<u>FUTURE-YEAR FUNDING:</u>	<u>\$4,000</u>
Total	\$6,250

PROJECT 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. Additionally, a fire-protection system will be designed to provide full sprinkler coverage to new and existing buildings. Finally, the project will implement additional infrastructure work for a new wastewater system as well as improve the current potable water and main electric installations at the Galeta Station. For Phase 1 of this project, the Smithsonian requests \$1.5 million in FY 2019 for 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 phases 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:

Concept and schematic design phases are complete. The architect-engineer will develop the design through 2018 and complete Phase 1 for contract award in early FY 2019.

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. The sanitary and potable water systems are in need of major improvements to reduce the impact of water shortages and lower maintenance costs for these installations.

PROJECT TITLE: Repair Roads at Fred L. Whipple Observatory (FLWO)
INSTALLATION: Smithsonian Astrophysical Observatory (SAO)
LOCATION: Tucson, Arizona

<u>FY 2019 COST ESTIMATE (Thousands of Dollars):</u>	\$850
<u>PRIOR-YEAR FUNDING:</u>	\$1,700
<u>FUTURE-YEAR FUNDING:</u>	<u>\$3,200</u>
Total	\$5,750

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 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. Design is under way and requested funds will allow for work to rectify this safety hazard. 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 \$850,000 in FY 2019 to replace these metal culverts with concrete culverts to mitigate this life-safety issue.

PROJECT TITLE: Construct Site Infrastructure/Renovate Homestead House
INSTALLATION: Smithsonian Environmental Research Center (SERC)
LOCATION: Edgewater, Maryland

<u>FY 2019 COST ESTIMATE (Thousands of Dollars):</u>	\$2,000*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$2,000</u>
Total	\$4,000

* Does not include funding in Facilities Planning and Design

PROJECT BACKGROUND:

The Homestead House, now part of the SERC property, dates back to the early 1700s and was the primary residence for the owner of the Contee Farm. Its significance in colonial archaeological, local and cultural history is well established. As outlined in SERC's Comprehensive Facility Master Plan, the 5,000-square-foot Homestead House will serve as the Center's "front door."

PROJECT DESCRIPTION:

New exterior infrastructure elements and upgrades will include a rebuilt driveway, well and septic system, and accessible parking. Interior renovations will include new lighting, HVAC and plumbing, as well as refurbished period finishes and handicapped-accessible facilities for visitors. The Smithsonian requests \$2.0 million in FY 2019 for construction of the exterior and infrastructure upgrades.

IMPACT OF DELAY:

Delay in implementing the infrastructure improvements will prevent SERC from providing a safe and accessible approach to the partially occupied structure as well as impede progress on essential upgrades needed for safe water and septic systems.

PROJECT TITLE: Decontamination of Collections in Building 16 (Garber)
INSTALLATION: Suitland Collections Center
LOCATION: Suitland, Maryland

<u>FY 2019 COST ESTIMATE (Thousands of Dollars):</u>	\$2,000
<u>PRIOR-YEAR FUNDING:</u>	0
<u>FUTURE-YEAR FUNDING:</u>	<u>\$2,000</u>
Total	\$4,000

BUILDING BACKGROUND:

An evaluation of the Smithsonian's collections storage space has identified the Suitland Collections Center, specifically the Garber collections storage site, as having almost half of the Smithsonian's below-acceptable collections space. Much of the more than 230,000 square feet of space, including Building 16, is compromised by hazardous materials in and around the collections.

PROJECT JUSTIFICATION:

Building 16 contains collections that have been contaminated with asbestos from the interior building insulation. Encapsulation systems to shield the objects from the asbestos have failed and only a few highly trained and qualified Smithsonian staff are permitted in the buildings. The collections within the building are not available for research, exhibition, display, or loan, and are off limits to academia and the public. Funds received in FY 2017 and earlier were used to build temporary collections storage swing space and to decontaminate collections in other buildings. Building 16 is the next phase of this sequence. This project will decontaminate the collections objects in Building 16, and move them to a suitable storage location. The collections will then be accessible for inventory, condition assessment, and research and exhibition.

PROJECT DESCRIPTION:

The Smithsonian requests \$2.0 million in FY 2019 to build a decontamination chamber within Building 16, and begin the process of decontaminating the collections. This labor-intensive process includes accounting and inventory assessments, stabilizing the collection, and moving cleaned collections into temporary swing space at Garber. This swing space will serve as the area for emergency conservation and treatment, packing and crating.

PROGRESS TO DATE:

Scope of work and cost estimates for the Building 16 effort are under development, and will be completed in the third quarter of FY 2018.

IMPACT OF DELAY:

Building 16 was constructed as a 10- to 15-year temporary building in 1959. A delay in decontaminating the collections objects and moving them to a suitable storage facility will perpetuate the poor care and inaccessibility of important objects, and will slow the implementation of the Institution's Collection Space Framework Plan.

PROJECT TITLE: Upgrade Emergency Generator/Switchgear
INSTALLATION: Suitland Collections Center (NMAI-CRC)
LOCATION: Suitland, Maryland

FY 2019 COST ESTIMATE (Thousands of Dollars): \$2,000

PROJECT DESCRIPTION:

The existing emergency generator at the National Museum of the American Indian's Cultural Resource Center (NMAI-CRC) is undersized for the building systems, which need to be on emergency power during power outages and disasters. This new, additional generator with automatic transfer switching adds emergency power for the entire HVAC system, including chillers, the cooling tower, dehumidification unit, and air-handling units. Emergency power for security and communications is also included. The facility's original switchgear, emergency gear and distribution panels will also be replaced. The new emergency generator will be located outside the building and is sized for the anticipated future needs of the collections processing spaces. The Smithsonian requests \$2.0 million in FY 2019 to complete installation of a new emergency generator and replace outdated switchgear at the NMAI-CRC.

PROGRESS TO DATE:

The final design will be complete by the second quarter of FY 2018, and the Maryland Department of Environment permitting is complete.

IMPACT OF DELAY:

The NMAI-CRC is susceptible to power loss from storm events and has an unreliable power source. Since the entire HVAC is not supported by the existing generator, a power loss results in unacceptable temperature and humidity fluctuations, putting the collections at risk. The original switchgear is a safety hazard and is outdated, making maintenance a challenge. The increased capacity this new emergency generator will provide is essential to serve existing and future needs for collections processing spaces.

PROJECT TITLE: Fire-Alarm Panel Replacements and Upgrades to Mass-Notification Systems
INSTALLATION: Multiple Facilities
LOCATION: Institution-wide

FY 2019 COST ESTIMATE (Thousands of Dollars): \$4,000

PRIOR-YEAR FUNDING: \$2,000

FUTURE-YEAR FUNDING: TBD

Total \$6,000

PROJECT DESCRIPTION:

The Smithsonian requests \$4.0 million in FY 2019 to replace the inadequate and outdated mass-notification systems, and to continue the phased replacement of MXL fire-alarm panels with XLS panels in various facilities across the Institution. Current MXL fire-

alarm panels will be discontinued in September of 2018 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. Panels at the Freer Gallery of Art and Smithsonian Environmental Research Center were replaced with prior-year funding. The program will continue with replacements at the Quadrangle Building, the National Zoological Park, Hirshhorn Museum and Sculpture Garden, National Museum of American History, National Museum of Natural History, and the Donald W. Reynolds Center. Mass-notification systems are linked to fire-alarm panels so there is economy and efficiency in combining the upgrades to both systems. Improved mass-notification systems will permit emergency notifications about events such as active shooters, fires, and terror attacks in buildings throughout the Institution.

PROJECT TITLE: Building Projects less than \$1,000,000
INSTALLATION: Multiple Locations
LOCATION: Institution-wide

FY 2019 COST ESTIMATE (Thousands of Dollars): \$8,850

PROJECT DESCRIPTION:

This request includes smaller individual projects of less than \$1 million each, which usually involve capital repair or replacement of individual systems or components. In addition, this supports other Smithsonian operations, such as copying and library services, security guard services, collections upgrades, electronic security system modernization and upgrades, conservation studies, and unplanned emergency repairs.

PROJECT TITLE: Construction Supervision and Administration
INSTALLATION: Multiple Locations
LOCATION: Institution-wide

FY 2019 COST ESTIMATE (Thousands of Dollars): \$7,000

PRIOR-YEAR FUNDING: \$7,000

PROJECT DESCRIPTION:

This request includes costs for permanent cost-estimating staff, the construction management staff required to supervise and administer construction contracts, as well as term and temporary staff required to perform specialized work associated with revitalization projects. A total of 48 FTEs will be funded from the \$7.0 million. The construction managers directly supervise construction contractors to ensure quality work is performed safely. In addition, they resolve issues that arise during construction, negotiate change orders, approve payments, and perform other administrative functions as contracting officers' technical representatives (COTRs). These necessary "owner functions" are essential to ensure quality work is completed safely, on time, and within budget.

This request also funds five contract specialists who support the procurement process for acquiring the necessary contract services to execute the Facilities Capital Program. These five positions provide essential expertise to ensure the timely award of planning, design, and construction contracts for the Facilities Capital Program.

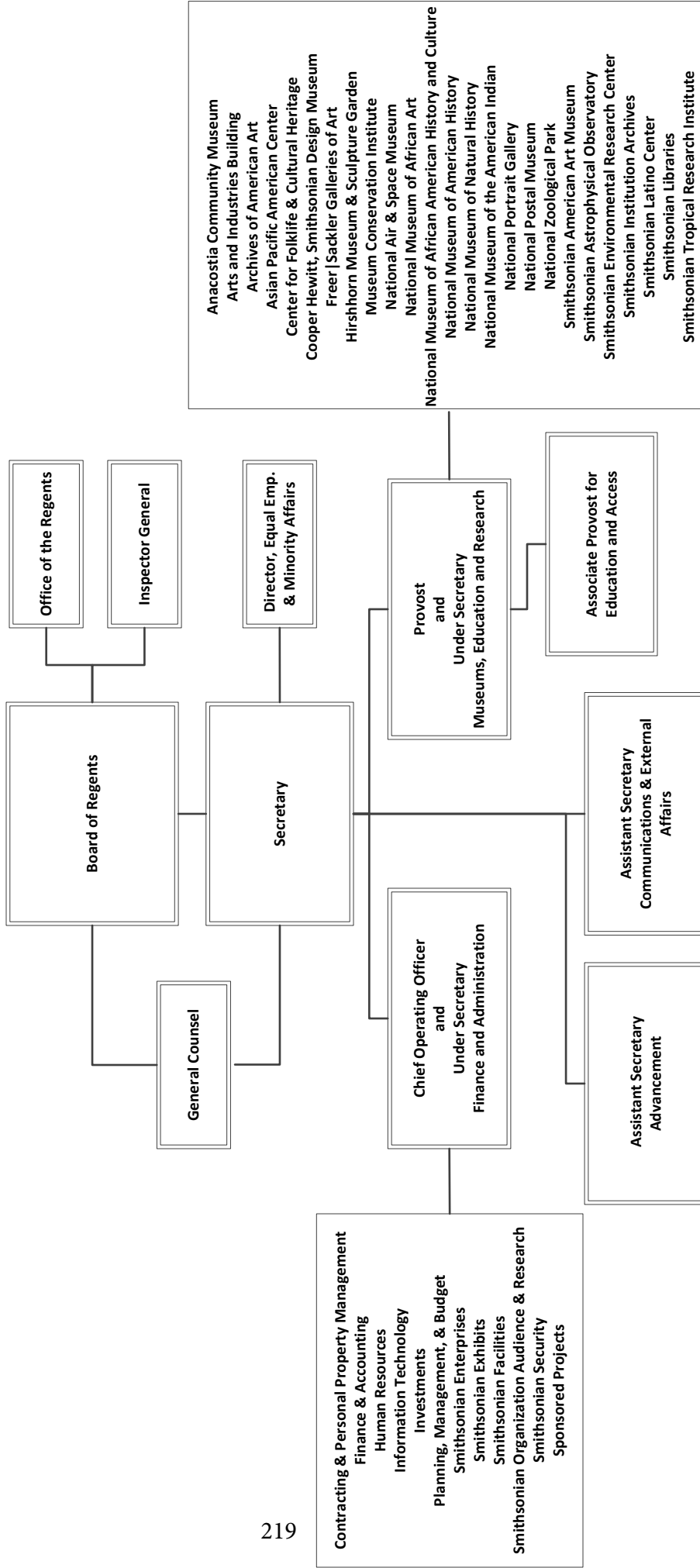
FACILITIES PLANNING AND DESIGN

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 2019 will provide necessary planning and design to the 35 percent stage for most projects included in the planned FY 2020 program, and will complete design for projects planned for FY 2019. 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 **\$17,000,000** for planning and design in FY 2019. These funds will be used to design several major revitalization projects at the Smithsonian Institution Building (SIB) (\$2.5 million); National Museum of Natural History (\$1.5 million); National Zoological Park (\$2.5 million); Hirshhorn Museum and Sculpture Garden (\$3.3 million); and the National Museum of American History (\$1.0 million). The request also includes funding to prepare designs for numerous smaller revitalization projects, including security upgrades, space utilization studies, and master planning (\$6.2 million). This budget request will also enable the Smithsonian to update comprehensive master planning studies to guide future facilities decisions, and other studies to ensure more effective use of existing space.

SMITHSONIAN INSTITUTION



VISITS TO THE SMITHSONIAN
FYs 2013–2017

<u>MUSEUM</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>
MALL					
SI Castle	1,405,651	1,158,617	1,103,499	1,094,311	1,131,280
A&I Building ¹	0	0	0	56,427	64,343
Natural History	8,281,983	7,047,560	7,049,730	6,942,276	6,103,289
Air and Space	7,167,075	6,377,840	6,902,206	7,354,352	7,120,722
American Indian	1,444,279	1,260,756	1,307,568	1,120,359	1,157,460
Freer Gallery ²	401,101	357,282	389,113	88,989	0
Sackler Gallery	225,053	192,132	155,998	187,473	195,051
African Art	227,547	180,608	226,743	209,239	165,343
Ripley Center	226,052	140,701	156,318	155,548	164,853
American History	4,978,559	3,971,987	4,100,718	3,849,115	3,914,493
Hirshhorn	717,663	514,922	658,312	647,915	1,097,847
African American History and Culture ³	0	0	0	83,802	2,508,403
OFF MALL					
DW Reynolds Center (AA/PG)	1,063,299	1,075,866	1,265,223	1,224,282	1,242,707
Anacostia	37,611	37,440	32,983	28,458	31,775
Cooper Hewitt ⁴	0	0	218,840	408,846	355,672
American Indian ⁵ (Heye Center/CRC)	602,056	554,063	514,527	472,124	439,325
Renwick ⁶	138,951	17,199	0	829,735	371,201
National Zoo	2,092,824	2,304,129	2,194,194	2,593,559	2,025,148
Postal	284,971	363,802	401,124	359,562	470,723
Udvar-Hazy Center	<u>1,366,322</u>	<u>1,214,284</u>	<u>1,529,293</u>	<u>1,592,416</u>	<u>1,570,706</u>
TOTAL	30,660,997	26,769,188	28,206,389	29,298,788	30,130,341

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 major renovations and gallery revitalization.

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, other business activities, and federal tax policy as it affects charitable donations. 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 2016 Actuals	FY 2017 Estimates	FY 2018 Estimates
General Trust	82.7	95.1	88.7
Donor/Sponsor-Designated	326.3	233.9	237.0
Government Grants and Contracts	119.6	113.7	119.8
Total Available for Operations	\$528.6	\$442.7	\$445.5

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 and the Samuel C. Johnson IMAX Theater in the National Museum of Natural History (until its closure at the end of FY 2017); 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 2018 general trust funds total \$88,700,000. 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 2018 are projected to total \$237,000,000. 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 2018, Government grants and contracts are projected to total \$119,800,000. Of this amount, \$86,472,000 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 172-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 2017 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, the National Museum of African American History and Culture, 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. Public Law 108-447 making appropriations for the Department of the Interior and Related Agencies for fiscal year 2005 allowed additional no-year funding for the National Museum of African American History and Culture.

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.”

Adjustments for FY 2018
(Dollars in Thousands)

Unit	FY 2018 Estimate \$000s	Reorganizations and Reprogrammings \$000s	FY 2018 Revised Estimate \$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
Subtotal, <i>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
Subtotal, <i>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	3,084	0	3,084
Cooper Hewitt, Smithsonian Design Museum	5,061	0	5,061
Hirshhorn Museum and Sculpture Garden	4,687	-153	4,534
National Museum of African Art	4,654	0	4,654
World Cultures Consortium	792	0	792
Subtotal, <i>Valuing World Cultures</i>	24,551	-153	24,398
<i>Understanding the American Experience</i>			
Anacostia Community Museum	2,355	50	2,405
Archives of American Art	1,933	0	1,933
National Museum of African American History & Culture	33,079	0	33,079
National Museum of American History, Behring Center	25,373	0	25,373
National Museum of the American Indian	32,671	0	32,671
National Portrait Gallery	6,556	0	6,556
National Postal Museum	1,131	0	1,131
Smithsonian American Art Museum	10,239	0	10,239
American Experience Consortium	600	-50	550
Subtotal, <i>Understanding the American Experience</i>	113,937	0	113,937
TOTAL, MUSEUMS AND RESEARCH CENTERS	285,104	-153	284,951

**Adjustments for FY 2018
(Dollars in Thousands)**

Unit	FY 2018 Estimate \$000s	Reorganizations and Reprogrammings \$000s	FY 2018 Revised Estimate \$000s
MISSION ENABLING			
Program Support and Outreach			
Outreach	9,333	0	9,333
Communications	2,663	176 ¹³	2,839
Institution-wide Programs	14,784	0	14,784
Smithsonian Exhibits	3,154	15 ^{14,7}	3,169
Museum Support Center	1,906	0	1,906
Museum Conservation Institute	3,359	0	3,359
Smithsonian Institution Archives	2,408	15 ¹⁵	2,423
Smithsonian Libraries	11,273	0	11,273
Subtotal, Program Support and Outreach	48,880	206	49,086
Office of the Chief Information Officer	51,967	42 ¹⁶	52,009
Administration	36,314	-80 ^{11,3,4,6}	36,234
Office of the Inspector General	3,538	0	3,538
Facilities Services			
Facilities Maintenance	77,045	0	77,045
Facilities Operations, Security, and Support	226,596	-15 ¹⁵	226,581
TOTAL, MISSION ENABLING	444,340	153	444,493
Undistributed Rescission			-4,954
GRAND TOTAL, SMITHSONIAN INSTITUTION	729,444	0	724,490

Footnotes for FY 2018 Estimate:

- ¹ Transfer of \$153,000 from Hirshhorn Museum and Sculpture Garden to Administration to fund budget support functions.
- ² Transfer of \$50,000 from American Experience Consortium to Anacostia Community Museum to enhance the study and understanding of contemporary urban experiences.
- ³ Transfer of \$176,000 from Administration to Communications to provide funding for government relations officer.
- ⁴ Transfer of \$15,000 from Administration to Smithsonian Exhibits for operational support.
- ⁵ Transfer of \$15,000 from Facilities Operations, Security, and Support to Smithsonian Archives to fund expenses for commercial records management and retrieval services.
- ⁶ Transfer of \$42,000 from Administration to Office of the Chief Information Officer to return balance of funding previously provided for an Information Technology (IT) position.
- ⁷ Note Smithsonian Exhibits name change (see page 219) and request change to Appropriations Table G to include National Postal Museum.