



Smithsonian

Fiscal Year 2021

Submitted to the Committees on Appropriations
Congress of the United States

Smithsonian Institution

Fiscal Year 2021

Budget Justification to Congress

February 2020

SMITHSONIAN INSTITUTION (SI)
Fiscal Year 2021 Budget Request to Congress
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DAWNING OF A NEW ERA: A VISION FOR THE SMITHSONIAN'S FUTURE

History has an extraordinary power to contextualize and help us understand our current moment in time. As a historian and in my varied roles at the Smithsonian, including now as its Secretary — overseeing 155 million objects, 6,200 employees and 7,300 volunteers working across 19 museums, 21 libraries, nine research centers, and the National Zoo — I have witnessed what an immense gift the Smithsonian has been to our nation and our world. We are grateful for the long-standing support that we have received from the American people, Congress, and the Administration, since that support has enabled the Institution to fulfill its mission to increase and diffuse knowledge.

The Smithsonian represents much more than history. We have always proudly looked toward the future, celebrating contemporary developments and contemplating their potential impacts on our future. We represent a balance between tradition and innovation: honoring the past while actively impacting the present and future with world-class scholarly and educational achievements. As we at the Smithsonian prepare to celebrate our 175th anniversary in 2021, we see the incredible opportunities that lie ahead of us. We will use our vast repository of treasures, research, data, and scholarship to improve communities locally and globally, embodying the promise of “greater reach, greater relevance, and profound impact” embedded in our strategic plan.

Greater Reach

A key component of having greater reach is continuing the Smithsonian's transformation into a virtual museum. Nothing replaces the authentic objects we display, but by using all the digital tools available to us, we can ensure that our treasures reach millions across the country and the globe who cannot visit us in person. We have already done impressive work in the digital realm. In FY 2019, our websites attracted more than 154 million visitors, we had more than 17 million social media followers, and our Smithsonian podcast *Sidedoor* has been downloaded more than 3 million times by people in all 50 states and more than 146 countries.

For years, we have digitized our objects, specimens, archival materials, and library books to make them more accessible to the public. Our museums and libraries have created digital images for more than five million objects, specimens and books, and electronic records for more than 33 million artifacts and items in the national collections. Our Digitization Program Office has created 3D digital images for collection objects people can access, explore, and even print, such as the Apollo 11 command module, *Columbia*. In March of 2019, the Smithsonian partnered with Google Arts and Culture on their digital content hub, “Once Upon a Try,” featuring 6,000 digital assets from the National Air and Space Museum and digital exhibits from the National Zoo and the National Museum of American History's Lemelson Center for the Study of Invention and Innovation. And in February of 2020, we are announcing a new initiative that will make the Smithsonian a leader among cultural institutions by freely sharing millions of digital assets with the world.

To expand on all these efforts, I envision an Institution-wide initiative that will allow audiences to experience our world-renowned scholarship, research, and collections in new and exciting ways. This initiative will be organized around themes such as democracy, race, innovation, and identity. By seeking out more innovative partnerships that leverage state-of-the-art resources, we can scale up our use of groundbreaking technology and reach new audiences worldwide.

Greater Relevance

One of the Institution's greatest strengths is our ability to engage people in meaningful dialogue. The National Museum of African American History and Culture exemplifies that capacity. Since its inception, the Museum has fostered a national discussion about issues of race, identity, and community that resonates with modern audiences. It has held symposia that examined the legacy of Civil War monuments and racialized mascots. It has inspired the Washington, DC, Metropolitan Police Department to implement training at the Museum to help all its officers improve community relations between police and citizens.

Across the Smithsonian, we can have a similar influence on the national discourse. Our world-class scholars, researchers, historians, curators, and educators speak directly to contemporary issues such as pandemic disease, climate change, social equity, and cultural heritage and patrimony. We have a well-earned reputation as honest brokers of knowledge across many fields of expertise. As the leader of an influential scientific, cultural, and educational institution, I believe it is essential for us to exercise our power to bring people together to share big ideas and conflicting perspectives. In this way, the Smithsonian can increase the public's ability to understand our universe, our history, and our shared future. Doing so will also allow us to reach a younger audience that expects us to exert our strengths for the common good.

Profound Impact

The Smithsonian has a long history of being a trusted educational resource. When the Institution was founded, there was discussion about whether it would be established as a university. That did not come to pass, but the "diffusion" part of James Smithson's original vision — sharing knowledge — is still central to our mission as we continue to embody the ethos "learn something, teach something."

Today, we have many education, learning, and discovery spaces in our museums and research centers. Our Leadership and Assistance for Science Education Reform (LASER) program, STEM curriculum, and digital resources from the Smithsonian Science Education Center have supported STEM teaching and learning in nearly 1,700 districts in every U.S. state and 29 countries since its founding. The Smithsonian Center for Learning and Digital Access Learning Lab website offers teachers and students free digital access to more than one million resources from across the Institution. Smithsonian Affiliate museums host speakers, traveling

exhibitions, and webinars, bringing educational offerings into many communities across the country and addressing the needs of numerous underserved audiences. In FY 2019, the Smithsonian Institution Traveling Exhibition Service took large and small exhibitions to regional museums and provided many educational materials to schools and libraries nationwide.

Building on this history and reputation, I plan to take the necessary steps to apply innovative thinking to ensure that we are a national leader in pre-K–12 education as well as lifelong learning. My goal is for the Smithsonian to reach every classroom in America. Educational materials based on our science and scholarship can enhance the ways students and teachers engage in 21st-century learning. We are developing a model of the future of education and museums through a collaboration with the Washington, DC, public school system. Sharing that work nationwide and abroad while drawing on best practices and lessons learned will expand our impact and help us make the most effective use of our resources.

Looking Ahead

The Smithsonian's programming accomplishments in 2019 underscored the incredible impact the Institution has. The National Museum of Natural History opened its *David H. Koch Hall of Fossils — Deep Time* exhibition; the Smithsonian American Women's History Initiative amplified the voices of women and inspired people everywhere; our Year of Music showcased our incredible music collections with daily music programming; and the National Air and Space Museum celebrated the 50th anniversary of the Apollo 11 moon landing with a number of magnificent events. The Institution also continued its pioneering research, exemplified by the Smithsonian Astrophysical Observatory-led collaborative international project, the Event Horizon Telescope, an array of radio telescopes that produced the first-ever image of a black hole, an achievement that won the prestigious 2020 Breakthrough Prize in Fundamental Physics.

Achievements like these are the reason I felt so excited when I became the 14th Secretary of the Smithsonian. It was like I was a kid again, visiting the Institution for the first time in the mid-1960s. Returning home to New Jersey by car after a family vacation, I was too young to understand why we could not stop at many historic sites I wanted to visit in the still-segregated South. When we drove through Washington, DC, though, we stopped at the Smithsonian.

My dad explained that we could visit here and not worry about being turned away because of race. It was a revelation to a youngster curious about history and the world: the Smithsonian was a place where anyone, regardless of who they were, could become something more than who they had been. A place of vast potential, where you were only limited by your imagination.

Today, I am confident that the future of the Smithsonian holds even greater gifts for the American people. We can build on our impressive legacy of scholarship, collections preservation expertise, innovative exhibitions, and education in the fields of history, the arts, culture, and the sciences to be even more relevant and valuable to the American people. To do so, however, we must become a nimbler institution that maximizes the use of technology to serve 21st-century audiences, one that applies its research and collections to help Americans better understand ourselves and the world.

As we approach the cusp of our 175th anniversary, with the continued support of the Administration, Congress, and the American people, I have no doubt we will achieve our goals. The Smithsonian will continue to welcome everyone to learn, marvel, and imagine, using our creativity and intellectual capital for the good of society. And we will commit enthusiastically to the project of transforming this hallowed Institution into a cauldron of ideas, innovation, and understanding, one in which our return on the nation's investment is proven for generations to come.

SMITHSONIAN INSTITUTION FY 2021 BUDGET REQUEST SUMMARY

Account	FY 2019 Enacted	FY 2020 Enacted	FY 2021 Request
Salaries and Expenses	\$739,994,000	793,658,000	\$820,313,000
Facilities Capital	<u>\$303,503,000</u>	<u>\$253,700,000</u>	<u>\$290,000,000</u>
Total	\$1,043,497,000	\$1,047,358,000	\$1,110,313,000

For fiscal year (FY) 2021, the Smithsonian’s request to fund operating expenses and revitalization of the Institution’s physical infrastructure is **\$1,110.3 million**. The total amount includes **\$820.3 million** for Salaries and Expenses (S&E) and **\$290.0 million** for the Facilities Capital account. A detailed summary of the changes requested is provided in the table at the end of this section.

SALARIES AND EXPENSES

FIXED COSTS INCREASES

- **Salaries and Related Costs (+\$21,043,000)** — This funds the annualization and unfunded 3.1 percent pay raise (3.52 percent in the Washington, DC area) effective in January of 2020. The request also includes a projected 1.0 percent civilian pay raise effective in January of 2021.

It is critical that the congressionally mandated pay increase be fully funded to ensure efficient operations of all Smithsonian museums, research centers, and units. The recent 3.52 percent pay raise that was authorized for 2020 required Smithsonian units to absorb this increase within existing budget allocations. Most units use more than 90 percent of their funds for salaries and benefits. Without additional funding to support pay raises, Smithsonian units must reduce current staff through retirements and separations to fund the pay increase for other existing employees. This leads to erosion of adequate staffing and a lack of professional personnel to take proper care of our nation’s precious collections. It also leads to mismatches in skills and makes it much more difficult to take on new initiatives or priorities. The Institution has experienced the loss of numerous essential personnel who could not be replaced because of insufficient unit funding. The unfunded pay raise will only exacerbate the problem. In addition to requesting funds for the prior pay raise, the Institution is requesting funds for collections, exhibit support, and education staffing to fill these much-needed positions.

In addition to the unfunded pay raises in 2020, the Institution is absorbing the 2.3 percent increase (\$8.7 million) for the employer contribution to the federal retirement plan that became effective on October 1, 2019.

- **Non-pay Fixed Items (+\$2,675,000)** — The Institution requests additional funding, largely for inflation-related increases in utilities, software licenses, and other operating costs. Details are provided in the S&E section of this budget submission.

PROGRAM INCREASES

UNDERSTAND AND IMPACT 21st CENTURY AUDIENCES

- **Exhibit Support (+\$843,000)** — The Institution requests funding (+\$843,000) to support the numerous exhibitions. The Smithsonian has a long tradition of raising private funds to design and install new exhibitions. For generations, these exhibitions have been the reason why millions of visitors have come to the National Mall. However, the Institution requires federal funding to manage these exhibits and to leverage the private funding necessary to install and maintain these exhibitions. In addition, the success of these exhibitions requires investment. The requested funding increase will improve efforts to maintain existing and new exhibitions at a standard that reflects a world-class institution.
- **Education (+\$500,000)** — The Smithsonian has a long history of being a trusted educational resource. The Institution provides authentic and inspiring science, technology, engineering, art, and mathematics experiences for teachers and students by drawing on the scientific and engineering assets of the federal Government, including scientists, laboratories, satellites, museums, and research centers. The Institution is dedicated to ensuring we are a national leader in K–12 education, bringing the research and collections of the Smithsonian into classrooms across the nation. In addition, the Smithsonian plans to develop a model of the future of education and museums, through a collaboration with the Washington, DC public school system, and share the results of that work nationwide and abroad.

PRESERVE OUR NATURAL AND CULTURAL HERITAGE

- **Collections Staffing (+\$1,128,000)** — Currently, the Institution has insufficient staff to provide optimal care for its collections, and is hindered in strengthening and sharing its collections with diverse national and international audiences. The Smithsonian needs these requested funds to rebuild its curatorial and collections management staffing in support of excellent research; improve exhibitions and digitization of the nation's vast collection of artifacts; and fully realize the benefits of the Institution's facilities infrastructure investments.

- **Animal Welfare (+\$466,000)** — Funding is requested to provide specialized animal care exhibits support. Maintaining animal habitats and providing specialized items for animals' health and well-being are not just recommended best practices, but required by oversight and regulatory entities. Maintaining these standards is essential to safely and humanely house our living collections while also safeguarding the public and staff. Without the additional resources for both the operations and specialized exhibits support, the quality of scientific research and animal care will be diminished.

FACILITIES CAPITAL PROGRAM

The request for the Facilities Capital Program (**\$290,000,000**) is essential to arrest the deterioration of some of the Smithsonian's oldest and most visited buildings and maintain the current condition of other facilities through systematic renewal and repair. This amount will allow the Facilities Capital Program to address all of the Institution's top-priority projects that are ready to begin renovation in FY 2021.

For FY 2021, the requested funds will enable the Institution to continue the major renovation project at the National Air and Space Museum (\$55.0 million) and begin major renovations at the Smithsonian Institution Building or (Castle, \$52.5 million).

The Castle is the Institution's first home, its symbolic heart, and the public's doorway to the Smithsonian Institution through the Information Center there. In addition, the Castle has historic architectural and institutional significance and is listed by the Department of the Interior as a National Historic Landmark. The Castle was built in 1855 and was last renovated more than 50 years ago. Because the Castle is in significant disrepair, and is at risk of catastrophic systems failure, the building will soon pose a safety hazard to the public and staff if the project does not move forward.

The request will also continue major revitalization work at the National Zoological Park (\$24.95 million); the National Museum of Natural History (\$13.4 million); the National Museum of American History (\$7.9 million), and the National Museum of the American Indian (\$7.5 million). In addition, these funds will allow the Smithsonian to perform essential revitalization work at the Hirshhorn Museum and Sculpture Garden (\$16.3 million); Quadrangle (\$6.1 million); Donald W. Reynolds Center (\$3.5 million); Smithsonian Tropical Research Institute (\$4.5 million); Smithsonian Astrophysical Observatory (\$3.4 million); Smithsonian Environmental Research Center (\$5.9 million); Suitland Collections Center (\$9.0 million); Cooper Hewitt, Smithsonian Design Museum (\$5.1 million); Freer Gallery of Art (\$2.5 million); and fire-alarm replacement (\$4.65 million). The request also provides for important revitalization projects throughout the Institution, program support, and projects costing under \$1 million each (\$16.9 million). Furthermore, this request accounts for planning and design of future projects (\$50.9 million), including at the Castle and the Arts and Industries Building at \$27.0 million. Details are provided in the Facilities Capital section of this budget request.

**SMITHSONIAN INSTITUTION
FY 2021 BUDGET SUMMARY
BY APPROPRIATION ACCOUNT**

SALARIES AND EXPENSES	FTEs	Amount
FY 2020 Enacted	4,261	\$793,658,000
<u>FIXED COSTS INCREASES</u>		23,718,000
Salaries and Related Costs	0	21,043,000
Utilities, Communications, and Other	0	2,675,000
<u>PROGRAM INCREASES</u>		
Understand and Impact 21st Century Audiences	9	1,343,000
Exhibit Support	6	843,000
Education	3	500,000
Preserve Our Natural and Cultural Heritage	8	1,594,000
Collections Staffing	6	1,128,000
Animal Welfare	2	466,000
Total FY 2021 Salaries and Expenses	4,278	\$820,313,000

**SMITHSONIAN INSTITUTION
FY 2021 BUDGET SUMMARY
BY APPROPRIATION ACCOUNT**

FACILITIES CAPITAL	FTEs	Amount
FTEs in Base	48	
Revitalization		
National Air and Space Museum		55,000,000
Smithsonian Institution Building (Castle)		52,500,000
National Zoological Park		24,950,000
National Museum of Natural History		13,400,000
National Museum of American History		7,900,000
National Museum of the American Indian		7,500,000
Hirshhorn Museum and Sculpture Garden		16,300,000
Quadrangle		6,100,000
Donald W. Reynolds Center		3,500,000
Smithsonian Tropical Research Institute		4,500,000
Smithsonian Astrophysical Observatory		3,400,000
Smithsonian Environmental Research Center		5,900,000
Suitland Collections Center		9,000,000
Cooper Hewitt, Smithsonian Design Museum		5,100,000
Freer Gallery of Art		2,500,000
Fire-Alarm Panel Replacements		4,650,000
Multiple Location Revitalization Projects		16,900,000
Facilities Planning and Design		50,900,000
Total FY 2021 Facilities Capital	48	\$290,000,000
FY 2021 REQUEST, ALL ACCOUNTS	4,326	\$1,110,313,000

**SMITHSONIAN INSTITUTION
SALARIES AND EXPENSES (S&E)
FY 2021 Congressional Request**

	FTEs	Amount
FY 2020 Enacted	4,261	\$793,658,000
Fixed Costs Increases		
Salaries and Related Costs	0	21,043,000
Utilities, Communications, and Other	0	<u>2,675,000</u>
Total Fixed Costs Increases		23,718,000
Program Increases		
Understand and Impact 21st Century Audiences	9	1,343,000
Exhibit Support	6	843,000
Education	3	500,000
Preserve Our Natural and Cultural Heritage	8	1,594,000
Collections Staffing	6	1,128,000
Animal Welfare	2	466,000
Total Program Increases	17	2,937,000
Total Increases	17	26,655,000
Total FY 2021 Salaries and Expenses	4,278	\$820,313,000

SMITHSONIAN INSTITUTION														
Unit Detail of the FY 2019 Enacted, FY 2020 Enacted/Revised and FY 2021 Request (\$s in Thousands)														
Page #	FTE = Full-Time Equivalent	FY 2019		FY 2020		FY 2020		FY 2021		ANALYSIS OF CHANGE				
		Enacted		Enacted		Revised		Request		(FY 2021 Increases)				
		FTEs	\$000	FTEs	\$000	FTEs	\$000	FTEs	\$000	Pay & Benefits	Rent & Utilities	Fixed Other	Program Change	\$000
	MUSEUMS AND RESEARCH CENTERS													
	28 National Air and Space Museum	151	20,110	151	20,110	151	20,110	151	21,240	960	0	170	0	0
	<i>FY 2021 Hazy Insurance</i>											170		
	36 Smithsonian Astrophysical Observatory	99	24,593	99	24,745	99	24,745	99	25,431	686	0	0	0	0
	41 Major Scientific Instrumentation	0	4,118	0	4,118	0	4,118	0	4,118	0	0	0	0	0
	26 Universe Consortium	0	184	0	184	0	184	0	184	0	0	0	0	0
	47 National Museum of Natural History	315	49,789	315	49,789	315	49,789	317	52,130	1,932	0	0	2	409
	<i>FY 2021 Collections Scholarship/Managers</i>												2	409
	54 National Zoological Park	215	27,566	215	28,066	215	28,066	217	30,105	1,373	0	200	2	466
	<i>FY 2021 Animal Welfare</i>											200	2	466
	65 Smithsonian Environmental Research Center	32	4,227	34	4,357	34	4,472	34	4,670	198	0	0	0	0
	<i>FY 2020 Revised - operational support see page 290</i>						115							
	69 Smithsonian Tropical Research Institute	191	14,486	191	14,702	191	14,702	191	15,543	841	0	0	0	0
	26 Biodiversity Consortium	0	1,543	0	1,543	0	1,543	0	1,543	0	0	0	0	0
	78 Arthur M. Sackler Gallery/Freer Gallery of Art	45	6,273	45	6,273	45	6,273	45	6,541	268	0	0	0	0
	86 Center for Folklife and Cultural Heritage	17	3,184	17	3,484	17	3,484	17	3,600	116	0	0	0	0
12	91 Cooper Hewitt, Smithsonian Design Museum	36	5,086	36	5,086	36	5,086	36	5,235	149	0	0	0	0
	95 Hirshhorn Museum and Sculpture Garden	37	4,544	37	4,544	37	4,544	41	5,051	151	0	0	4	356
	<i>FY 2021 Exhibit Support</i>												4	356
	101 National Museum of African Art	28	4,654	31	4,854	31	4,854	31	5,022	168	0	0	0	0
	26 World Culture Consortium	0	792	0	792	0	792	0	792	0	0	0	0	0
	108 Anacostia Community Museum	19	2,405	19	2,405	19	2,490	20	2,723	83	0	0	1	150
	<i>FY 2020 Revised - operational support see page 290</i>						85							
	<i>FY 2021 Exhibit Support</i>												1	150
	114 Archives of American Art	17	1,933	17	1,933	17	1,933	17	2,011	78	0	0	0	0
	118 National Museum of African American History & Culture	152	32,617	152	33,117	152	33,117	152	34,023	906	0	0	0	0
	124 National Museum of American History, Behring Center	164	25,373	165	25,478	165	25,478	167	26,899	1,060	0	0	2	361
	<i>FY 2021 Collections Scholarship/Managers</i>												2	361
	135 National Museum of the American Indian	206	33,648	206	33,648	206	33,885	206	34,982	1,097	0	0	0	0
	<i>FY 2020 Revised - Security at NMAI, NY see page 290</i>						237							
	139 National Portrait Gallery	56	6,556	56	6,646	56	6,646	57	7,060	256	0	0	1	158
	<i>FY 2021 Collections Scholarship/Managers</i>												1	158
	147 National Postal Museum	6	1,581	6	1,581	6	1,831	6	1,865	34	0	0	0	0
	<i>FY 2020 Revised - Security at Postal Museum see page 290</i>						250							
	152 Smithsonian American Art Museum	89	10,389	89	10,389	89	10,412	90	11,089	477	0	0	1	200
	<i>FY 2020 Revised - Unit Rent see page 290</i>						23							
	<i>FY 2021 Collections Scholarship/Managers</i>												1	200
	26 American Experience Consortium	0	600	0	600	0	600	0	600	0	0	0	0	0
	Total for Museums and Research Centers	1,875	286,251	1,881	288,444	1,881	289,154	1,894	302,457	10,833	0	370	13	2,100

SMITHSONIAN INSTITUTION

Unit Detail of the FY 2019 Enacted, FY 2020 Enacted/Revised and FY 2021 Request (\$s in Thousands)

Page #	FTE = Full-Time Equivalent	FY 2019		FY 2020		FY 2020		FY 2021		ANALYSIS OF CHANGE				
		Enacted		Enacted		Revised		Request		(FY 2021 Increases)				
		FTEs	\$000	FTEs	\$000	FTEs	\$000	FTEs	\$000	Pay & Benefits \$000	Rent & Utilities \$000	Fixed Other \$000	Program Change FTEs	\$000
	MISSION ENABLING													
	Program Support and Outreach													
158	Outreach	64	9,333	64	9,333	64	9,333	64	9,804	284	0	0	0	187
	<i>FY 2021 Exhibit Support</i>													187
164	Communications	23	2,839	23	2,839	23	2,839	23	2,947	108	0	0	0	0
167	Institution-wide Programs	0	16,784	0	23,284	0	23,284	0	23,284	0	0	0	0	0
174	Smithsonian Exhibits	28	3,169	28	3,169	28	3,169	28	3,308	139	0	0	0	0
177	Museum Support Center	18	1,906	18	1,906	18	1,906	18	1,967	61	0	0	0	0
179	Museum Conservation Institute	22	3,359	22	3,359	22	3,359	22	3,503	144	0	0	0	0
184	Smithsonian Libraries and Archives	115	14,258	115	14,458	115	14,458	115	15,292	634	0	200	0	0
	<i>FY 2021 Fixed Costs - Library Subscription Inflation</i>											200		
	Subtotal, Program Support and Outreach	270	51,648	270	58,348	270	58,348	270	60,105	1,370	0	200	0	187
↪	188 Office of the Chief Information Officer	105	52,509	107	54,247	107	54,447	107	56,110	887	776	0	0	0
	<i>FY 2020 Revised - USF&A Privacy Office see page 290</i>						200							
	<i>FY 2021 Fixed Costs - Communications</i>										776			
190	Administration	189	36,255	198	37,324	198	36,924	202	38,714	1,140	0	0	4	650
	<i>FY 2020 Revised - ACM support see page 290</i>						-85							
	<i>FY 2020 Revised - SERC support see page 290</i>						-115							
	<i>FY 2020 Revised - USF&A Privacy Office see page 290</i>						-200							
	<i>FY 2021 Education - US for Education</i>												3	500
	<i>FY 2021 Exhibit Support - APAC</i>												1	150
194	Office of the Inspector General	24	3,538	27	4,077	27	4,077	27	4,231	154	0	0	0	0
	Facilities Services													
196	Facilities Maintenance	483	79,545	492	114,545	492	114,545	492	115,999	1,454	0	0	0	0
199	Facilities Operations, Security, and Support	1,286	230,248	1,286	236,673	1,286	236,163	1,286	242,697	5,205	1,329	0	0	0
	<i>FY 2020 Revised - Unit Rent SAAM see page 290</i>						-23							
	<i>FY 2020 Revised Security at Postal Museum see page 290</i>						-250							
	<i>FY 2020 Revised Security at NMAI, NY see page 290</i>						-237							
	<i>FY 2021 Utilities</i>										1,329			
	Subtotal, Facilities Services	1,769	309,793	1,778	351,218	1,778	350,708	1,778	358,696	6,659	1,329	0	0	0
	Total for Mission Enabling	2,357	453,743	2,380	505,214	2,380	504,504	2,384	517,856	10,210	2,105	200	4	837
	SALARIES AND EXPENSES TOTAL	4,232	739,994	4,261	793,658	4,261	793,658	4,278	820,313	21,043	2,105	570	17	2,937
203	FACILITIES CAPITAL	48	303,503	48	253,700	48	253,700	48	290,000					
	GRAND TOTAL, SMITHSONIAN	4,280	1,043,497	4,309	1,047,358	4,309	1,047,358	4,326	1,110,313					

SALARIES AND EXPENSES

FY 2019 Enacted	\$739,994,000
FY 2020 Enacted	\$793,658,000
FY 2021 Request	\$820,313,000

For FY 2021, the Institution requests **\$820.3 million** in the Salaries and Expenses (S&E) account. Within the total increase requested, approximately 89 percent is attributable to fixed costs for sustaining base operations (pay, utilities, and other costs), and the remainder is for priority requirements throughout the Institution.

FIXED COSTS

SALARY AND PAY-RELATED COSTS (+\$21,043,000) — The Institution requests an increase of \$21.043 million for congressionally mandated pay increases and pay-related costs. The request includes resources to partially fund the 3.52 percent pay raise effective in January of 2020 and a one percent increase effective in January of 2021. Funding the congressionally mandated pay increases is critical for efficient operations.

<i>Salary and Pay Related Costs:</i>	<u>Request</u>
▪ Unfunded January 2020 pay raise (at 3.1% for 3/4 year)	\$10,794,000
▪ Unfunded Employer Federal Retirement Plan Contribution	1,754,000
▪ Annualization of January 2020 pay raise (at 3.1% for 1/4 year)	4,086,000
▪ January 2021 pay raise (at 1.0% for 3/4 year)	4,466,000
▪ Workers' Compensation	<u>-57,000</u>
Total	\$21,043,000

- **Unfunded January 2020 Pay Raise (+\$10,794,000)** — This provides partial funding for the 3.52 percent pay raise in January of 2020 for three-quarters of a fiscal year.
- **Unfunded FY 2020 Employer Contribution for the Federal Retirement Plan (+\$1,754,000)** — This partially funds the mandated 2.3 percent increase to the employer contribution to the Federal Retirement Plan that went into effect on October 1, 2019. Federal agencies were notified of this change in June of 2019 and, therefore, funding was not included in the FY 2020 congressional budget request. The full-year impact for this unfunded increase is \$8,746,000.
- **Annualize January 2020 Pay Raise in FY 2021 (+\$4,086,000)** — This provides for partial funding of the annualization of the January 2020 pay raise of 3.52 percent for one-quarter of a fiscal year in FY 2021 (October to December 2020).
- **Proposed January 2021 Pay Raise (+\$4,466,000)** — This provides for a proposed 1.0 percent pay raise in January 2021 for three-quarters of a year.
- **Workers' Compensation (-\$57,000)** — This supports the provisions of Section 8147(b) of Title 5, *United States Code*. The Workers' Compensation bill for FY 2021 is **\$2,918,000**, based on a Department of Labor invoice for costs incurred from July 1, 2018 through June 30, 2019. This represents a decrease of -\$57,000 from the FY 2020 Workers' Compensation costs (\$2,975,000).

FY 2021 Increased Pay Costs (Dollars in Thousands)

Line Item	FY 2020 Pay Raise and Retirement Contribution	FY 2021 Pay Raise and FY 2020 Pay Raise Annualization	FY 2021 Total Pay
National Air and Space Museum	568	392	960
Smithsonian Astrophysical Observatory	433	253	686
National Museum of Natural History	1,220	712	1,932
National Zoological Park	714	659	1,373
Smithsonian Environmental Research Center	125	73	198
Smithsonian Tropical Research Institute	342	499	841
Arthur M. Sackler Gallery/Freer Gallery of Art	169	99	268
Center for Folklife and Cultural Heritage	73	43	116
Cooper Hewitt, Smithsonian Design Museum	93	56	149
Hirshhorn Museum and Sculpture Garden	95	56	151
National Museum of African Art	106	62	168
Anacostia Community Museum	52	31	83
Archives of American Art	49	29	78
National Museum of African American History and Culture	572	334	906
National Museum of American History, Behring Center	669	391	1,060
National Postal Museum	21	13	34
National Museum of the American Indian	693	404	1,097
National Portrait Gallery	161	95	256
Smithsonian American Art Museum	301	176	477
Outreach	176	108	284
Communications	64	44	108
Museum Support Center	38	23	61
Museum Conservation Institute	90	54	144
Smithsonian Libraries and Archives	376	258	634
Smithsonian Exhibits	87	52	139
Office of the Chief Information Officer	561	326	887
Administration	753	387	1,140
Inspector General	96	58	154
Facilities Maintenance	562	892	1,454
Facilities Operations, Security, and Support	3,289	1,916	5,205
Total Pay-Related Costs	12,548	8,495	21,043

UTILITIES, POSTAGE, RENT, COMMUNICATIONS, AND OTHER FIXED COSTS (+\$2,675,000) — For FY 2021, the Institution requests an increase of \$2,675,000 for utilities and other fixed-cost accounts, as detailed in the chart below. The requested increase reflects consumption and rate changes in the utilities accounts and increases for Communications and Other Support to provide for fixed software licensing and maintenance costs, inflationary increases for library subscriptions, and to meet compliance requirements.

The following table displays the estimates for FYs 2020 and 2021. The details that follow address the specific changes affecting the FY 2021 accounts.

**Federal Utilities, Postage, Rent, Communications, and
Other Fixed Costs
FYs 2020–2021
(Dollars in Thousands)**

	FY 2020 Estimate	FY 2021 Estimate	Change
Utilities:			
Electricity	20,517	20,517	0
Chilled Water	3,004	3,090	86
Steam	8,492	8,492	0
Natural Gas	3,118	3,118	0
DC Gov't Water/Sewer	5,888	7,131	1,243
Other Water and Fuel Oil	<u>1,236</u>	<u>1,236</u>	<u>0</u>
Subtotal, Utilities	42,255	43,584	1,329
Postage	1,461	1,461	0
Motor Fuel	370	370	0
Rental Space:			
Central	43,207	43,207	0
Unit	<u>5,793</u>	<u>5,793</u>	<u>0</u>
Subtotal, Rent	49,000	49,000	0
Communications	20,712	21,488	776
Other Support	3,920	4,490	570
Total	\$117,718	\$120,393	\$2,675

UTILITIES (+\$1,329,000) — Justified here, but included in the Facilities Operations, Security, and Support line item, are requested changes to cover the costs of energy and water. The request includes the following:

- **Electricity (\$0)** — 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. There are no anticipated changes in FY 2021.
- **Chilled Water (+\$86,000)** — 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. An increase of \$86,000 is anticipated due to a rate increase of 2.6 percent in FY 2021.
- **Steam (\$0)** — The Smithsonian uses steam for heating and humidification, and to produce hot water for facilities on the Mall and in New York City. There are no anticipated changes in FY 2021.
- **Natural Gas (\$0)** — The Smithsonian uses natural gas and propane for heating and generating steam. There are no anticipated changes in FY 2021.
- **DC Water and Sewer (+\$1,243,000)** — Funds cover the costs of both water and sewer services provided by the District of Columbia Water and Sewer Authority (DCWSA). The net increase includes rate and billing adjustments transmitted by DCWSA to the Smithsonian in July of 2019 (+\$1,196,000), as well as a delay in the full recognition of the National Zoo’s Energy Savings Performance Contract savings (+\$47,000).
- **Other Water and Fuel Oil (\$0)** — Funds provide water service for facilities outside of Washington, DC, and fuel oil used in dual-fuel boilers and generators for emergency power. There are no anticipated changes in FY 2021.

POSTAGE AND MOTOR FUEL (\$0) — Funds provide for all official domestic and international mail services and for motor fuel that powers the Smithsonian’s motor vehicle fleet and scientific research vessels. No increases are requested in FY 2021.

RENTAL SPACE (\$0) — No increase is requested for rental space because of the anticipated purchase of an Administrative Headquarters Building in the Washington, DC area and the subsequent savings in FY 2021. These savings are expected to offset any anticipated rent escalation costs in other leased properties in FY 2021.

COMMUNICATIONS (+\$776,000) — The communications base supports the operations of the Institution’s voice and data telecommunications infrastructure. The requested increase covers infrastructure upgrades and the higher cost of software and hardware maintenance fees for existing investments, as well as the expansion of central storage and backup systems used to house, manage, and protect the

rapidly growing number of digitized collections assets. The Institution requests an increase to the base budget for these increases when they come due in FY 2021.

The increase will allow business-critical systems to remain current and under continual support by vendors, as well as offer functionalities that can improve and streamline business workflows to improve operational efficiency. The mandatory transition of data/Internet-leased lines will allow the Institution to replace outdated telecommunications technologies and take advantage of current ones that can provide faster connectivity and reduce redundancies. This is particularly important for far-flung Smithsonian research centers which require high-capacity telecommunications support.

These systems include the Institution's Enterprise Resource Planning (ERP) financial management system; data backup; cyclical replacement of network routers and switches; server replacement; educational agreements to use common Microsoft products (such as Office and Windows); and many other systems. The requested increases will enable systems to stay current and cover rising annual maintenance and operating costs, cover the costs of the upgraded Internet2 connection that allows the exchange of large datasets with external collaborators and sharing of high-resolution images and 3D models, and covers the annual recurring cost for a network connection to the Smithsonian Tropical Research Institute laboratories in Panama, many of which are difficult to physically access.

OTHER SUPPORT (+\$570,000) — An additional \$570,000 is requested to offset the effects of inflation and to cover other fixed costs.

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

The Institution also requests an increase (+\$170,000) to support the must-pay service costs at the Udvar-Hazy Center (UHC). The Metropolitan Washington Airports Authority (MWAA) service contract provides essential police, fire, and emergency ambulance services for the Center.

In addition, the Institution requests an increase (+\$200,000) to cover the higher costs for animal food and medicine at the National Zoo. The cost to sustain animal care operations increases annually due to market availability and environmental trends. The cost to feed the animals has increased more than 30 percent because some of the food supply was previously donated. Other inflationary factors include: the increased cost for specialized diets for the aging and sick animals; the increased cost of making hay due to seasonal variables (excessive rain or heat); and the greater cost of pharmaceuticals, laboratory services, and routine medical care for animals.

SUMMARY OF FY 2021 S&E PROGRAM INCREASES

	FY 2020 Base (\$000s)	FY 2021 Program Increase (\$000s)	FY 2021 FTE Increase
Understand and Impact 21st Century Audiences		+1,343	+9
• Exhibit Support	60,992	+843	+6
• Education	20,701	+500	+3
Preserve Our Natural and Cultural Heritage		+1,594	+8
• Collections Staffing	70,657	+1,128	+6
• National Zoo — Animal Welfare	28,066	+466	+2
Total S&E Program Increases		+\$2,937	+17

Note: For a complete list of program categories, see page 25.

UNDERSTAND AND IMPACT 21st CENTURY AUDIENCES

<u>Category</u>	FY 2021 Program Increase (\$000s)	FY 2021 FTEs Increase
IMPACT 21st CENTURY AUDIENCES		
• Exhibit Support	+843	+6
• Education	+500	+3
Total Increase	+\$1,343	+9

Exhibit Support — FY 2020: (\$60,992,000); FY 2021 Increase: (+\$843,000, +6 FTEs)

The Smithsonian has a long tradition of raising private funds to design and install new exhibitions. For generations, these exhibitions have been the reason why millions of visitors have come to the National Mall. However, the Institution requires federal funding to manage these exhibits and to leverage the private funding necessary to install and maintain these exhibitions. Specifically, funding would be provided to the Hirshhorn Museum and Sculpture Garden (HMSG, +4 FTEs); the Anacostia Community Museum (ACM, +1 FTE); the Smithsonian Traveling Exhibition Service (SITES); and the Asian Pacific American Center (APAC, +1 FTE).

The funding would enable HMSG to convert four temporary employees who support the Museum's exhibitions to more efficiently fabricate and install exhibition cabinetry, mounts, and audiovisual equipment, while also keeping compensation competitive with similar positions in comparable museums and galleries. The ACM requires an additional federal employee to support its numerous exhibits on the local community experiences. SITES requires additional resources for its popular Museum

on Main Street program that provides outstanding exhibitions in support of rural American small towns. The APAC requires additional resources to continue to expand the Asian Pacific American presence in the Smithsonian's presentation of and research into the American experience.

Education — FY 2020: (\$20,701,000); FY 2021 Increase: (+\$500,000, +3 FTEs)

The Smithsonian has a long history of being a trusted educational resource. The Institution provides authentic and inspiring science, technology, engineering, art, and mathematics (STEAM) experiences for teachers and students by drawing on the scientific and engineering assets of the federal Government, including scientists, laboratories, satellites, museums, and research centers. Accordingly, the Smithsonian requests funding (+\$500,000 and +3 FTEs) to translate our nation's treasures and stories through digital technology and cultivate the next generation of STEAM and history learners by sharing high-quality education content aligned with national education priorities. As we continue to make new discoveries, we must share them with future generations. The Institution is dedicated to ensuring we are a national leader in K–12 education, bringing the research and collections of the Smithsonian into classrooms across the nation through comprehensive, standards-aligned programming. Educational materials based on our science and scholarship can profoundly affect how students and teachers engage in 21st-century learning.

Building on the Smithsonian's history and reputation, and the leveraging of private funds, the Institution will develop a model of the future of education and museums, through a collaboration with the Washington, DC public school system. Sharing that work nationwide and abroad while drawing on best practices and lessons learned will expand our impact and help us make the most effective use of our resources.

PRESERVE OUR NATURAL AND CULTURAL HERITAGE

<u>Category</u>	FY 2021 Program Increase (\$000s)	FY 2021 FTEs Increase
PRESERVE OUR NATURAL AND CULTURAL HERITAGE		
• Collections Staffing	+1,128	+6
• Animal Welfare	+466	+2
Total Increase	+\$1,594	+8

Collections Staffing — FY 2020: (\$70,657,000); FY 2021 Increase: (+\$1,128,000, +6 FTEs)

Collections stewardship is a key component and core priority of the Smithsonian’s Strategic Plan. Assembled throughout the Institution’s history, Smithsonian collections are fundamental to carrying out the Institution’s mission and serving as the intellectual capital for scholarship, exhibition, and education. The proper management, documentation, preservation, and accessibility of collections are essential to the nation’s research and education infrastructure, enabling researchers to address such significant challenges as the spread of invasive species and the loss of biological diversity and its impact on global ecosystems and human welfare.

Likewise, 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. Because collections stewardship is fundamental to the Smithsonian’s mission, there is a vital need for additional resources to accomplish basic collections management activities for accountability, preservation, storage, digitization, and accessibility of the collections. The Institution must also substantially improve its collections scholarship to ensure that our vast collections are properly exhibited and interpreted for the Smithsonian’s worldwide audiences, including the scientific community.

Although the Institution has many staffing needs, curatorial and collections management staffing is the top priority. Museums require additional staff to research and write educational materials that convey cultural context and meet curriculum standards, design curriculum and learning activities, and develop and maintain a dynamic and functional publications distribution system.

In pursuit of the requested funds, the Institution is following a balanced strategy, using both federal and trust support to stop further base erosion and begin rebuilding the curatorial staff. Even though it is difficult to raise private funds for this effort, each museum is committed to match federal support with private resources for this essential program. We have had some success with this approach so far, and have funded 17 endowed curatorial positions as part of our national campaign. Our donors have expressed their support for this balanced strategy of leveraging

their donations with an equal federal commitment to restore the scholarly foundation of the Institution.

Several recent Inspector General collections stewardship audit reports have identified a vital need to fill high-priority positions to care for and preserve collections, ensure full inventory control over collections, provide proper preservation of collections at risk, and support a robust digitization program to make collections available online to national and international communities. Consequently, museums require additional staff to: assist with research and public collections inquiries; expand loan and digitization capacities to meet the growing demand for physical and digital access to collections; conserve fragile and at-risk collections, including time-based media and digital art; research and process new acquisitions and backlogs; meet the growing requirements of upcoming exhibitions; improve collections emergency management and professional development training; and achieve and sustain inventory and preservation controls to support collections stewardship.

In particular, museums and offices requesting collections management funding include the National Museum of American History (+2 FTEs); the National Museum of Natural History (+2 FTEs); the National Portrait Gallery (+1 FTE); and the Smithsonian American Art Museum (+1 FTE). This collections staffing request specifies the necessary federal support to begin recovering from the loss of curatorial and collections management staff in several of the Smithsonian's most popular museums and galleries.

Animal Welfare — FY 2020: (\$28,066,000); FY 2021 Increase: (+\$466,000, +2 FTEs)

The National Zoological Park (NZIP) is requesting resources (+\$466,000 and +2 FTEs) to provide specialized animal care exhibits support. Living collections require specialized support which must meet certain mandatory standards. NZIP's species collection and their requirements are highly varied, from Asian elephants and giant pandas to endangered corals and extinct-in-the-wild frogs. Most of the Smithsonian living collections are housed indoors, but the Zoo's 163-acre park includes a significant number of outdoor habitats, and has unique needs for some of its animals, such as shade structures for bison and climbing structures for great apes. Equally important, the Zoo has to maintain miles of animal containment, with standards continually being improved and updated as they are tested by the animals themselves, resulting in increased height recommendations for cheetah fences, or increased cabling to calf-proof the *Elephant Trails* exhibit.

Maintaining animal habitats and providing specialized items for animals' health and well-being are not just recommended best practices, but required by oversight and regulatory entities such as the Association of Zoos and Aquariums (AZA) and the U.S. Department of Agriculture (USDA). These standards are essential to safely and humanely house our living collections while safeguarding the public and staff. Without the additional resources and specialized exhibits support, the quality of both research and animal care will be diminished.

NO-YEAR FUNDING — The following table provides the FY 2020 and FY 2021 Salaries and Expenses requests for No-Year Funding.

No-Year Funding Request
(Dollars in Thousands)

Salaries and Expenses	FY 2020 Estimate	FY 2021 Request	Change from FY 2020
No-Year Funds			
National Museum of Natural History			
Exhibition Reinstallation	954	954	0
Repatriation Program	1,401	1,450	+49
Major Scientific Instrumentation	4,118	4,118	0
Collections Acquisition	435	435	0
Total, No-Year Funds	\$6,908	\$6,957	+\$49

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 2020 Estimate	FY 2021 Request	Change from FY 2020
Salaries and Benefits	484	494	+10
Travel and Transportation	7	7	0
Rent, Utilities, Communications, and Other	96	98	+2
Other Services	162	175	+13
Supplies and Materials	21	22	+1
Equipment	22	22	+0
Land and Structures	2	2	+0
Total, Object-Class Funds	\$794	\$820	+\$26

FEDERAL RESOURCE SUMMARY BY PERFORMANCE OBJECTIVE AND PROGRAM CATEGORY

The Smithsonian has developed its FY 2021 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 2020 and FY 2021 estimates and the proposed changes by strategic goal, performance objective, and program category.

FY 2021 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 and Program Category	FY 2020		FY 2021		Change		Pay	Rent/ Utilities	Other Fixed	Program Increase	Total Change
	FTE	\$000	FTE	\$000	FTE	\$000					
Enhanced Interdisciplinary Research	562	94,710	562	98,061	0	3,351	3,351				3,351
Expand Digital Technologies	91	16,530	91	17,113	0	583	583				583
Impact 21st Century Audiences	707	108,946	716	114,277	9	5,331	3,988				5,331
<i>Public Programs</i>	124	27,253	124	27,936	0	683	683				683
<i>Exhibitions</i>	428	60,992	434	64,266	6	3,274	2,431			843	3,274
<i>Education</i>	155	20,701	158	22,075	3	1,374	874			500	1,374
Preserve Our Natural and Cultural Heritage	2,295	433,114	2,303	445,988	8	12,874	9,951				12,874
<i>Collections</i>	447	70,657	455	75,137	8	4,480	2,886			1,594	4,480
<i>Facilities and Safety</i>	1,142	268,471	1,142	273,989	0	5,518	4,189	1,329			5,518
<i>Security</i>	706	93,986	706	96,862	0	2,876	2,876				2,876
Enable Responsive Administration	606	140,358	606	144,874	0	4,516	3,170		1,346		4,516
Total	4,261	793,658	4,278	820,313	17	26,655	21,043	1,329	1,346	2,937	26,655

Federal Resources by Performance Objective and Program Category						
Salaries and Expenses (\$'s in thousands)						
Performance Objective and Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in impactful scientific research and discovery	423	71,145	423	73,654	0	2,509
Engage in vital arts and humanities research	139	23,565	139	24,407	0	842
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	91	16,530	91	17,113	0	583
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	124	27,253	124	27,936	0	683
Exhibitions						
Offer compelling, first-class exhibitions	428	60,992	434	64,266	6	3,274
Education						
Engage and inspire diverse audiences	155	20,701	158	22,075	3	1,374
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	447	70,657	455	75,137	8	4,480
Facilities and Safety						
Improve Smithsonian facilities operations and provide a safe and healthy environment	1,142	268,471	1,142	273,989	0	5,518
Security						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	706	93,986	706	96,862	0	2,876
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	502	94,259	502	97,297	0	3,038
Information Technology						
Improve the Institution's information technology systems and infrastructure	104	46,099	104	47,577	0	1,478
Total	4,261	793,658	4,278	820,313	17	26,655

ENHANCED RESEARCH INITIATIVES

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2019 ENACTED	0	3,119	0	0	0	0	0	0
FY 2020 ENACTED	0	3,119	0	0	0	0	0	0
FY 2021 REQUEST	0	3,119	0	0	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in impactful scientific research and discovery	0	1,727	0	1,727	0	0
Engage in vital arts and humanities research	0	792	0	792	0	0
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	0	600	0	600	0	0
Total	0	3,119	0	3,119	0	0

BACKGROUND AND CONTEXT

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

Although there are no specific units primarily associated with these initiatives, all Smithsonian museums, research centers, and offices will look for opportunities to integrate the goals and objectives into their activities and programs.

The FY 2021 budget request includes no increase. Below is a summary of the FY 2021 Enhanced Research Initiatives budget.

Programs	FY 2020 Enacted \$000s	FY 2021 Request \$000s
Universe	184	184
Biodiversity	1,543	1,543
World Cultures	792	792
American Experience	600	600
Total	\$3,119	\$3,119

NATIONAL AIR AND SPACE MUSEUM

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2019 ENACTED	151	20,110	67	8,207	35	12,894	5	814
FY 2020 ENACTED	151	20,110	73	9,735	37	10,478	2	285
FY 2021 REQUEST	151	21,240	73	9,695	37	10,425	2	285

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	9	1,505	9	1,562	0	57
Engage in vital arts and humanities research	24	3,786	24	3,939	0	153
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	2	367	2	380	0	13
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	15	1,714	15	1,809	0	95
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	28	3,177	28	3,355	0	178
<i>Education</i>						
Engage and inspire diverse audiences	7	1,000	7	1,045	0	45
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	45	4,537	45	4,822	0	285
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	2	318	2	331	0	13
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	13	3,036	13	3,289	0	253
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	6	670	6	708	0	38
Total	151	20,110	151	21,240	0	1,130

BACKGROUND AND CONTEXT

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

NASM is administered as one Museum with multiple locations: the National Mall Building (NMB); the Steven F. Udvar-Hazy Center (UHC) in Chantilly, Virginia; and the Paul E. Garber Facility in Suitland, Maryland. The first module of the Dulles Collections Center, adjacent to the UHC, was completed in January of 2019 and is providing state-of-the-art storage for NASM collections. As of the end of December 2019, the Dulles Collections Center is 90 percent filled with artifacts that were moved out of the NMB due to ongoing construction activities.

The Museum provides access to the nation's and the world's aviation and spaceflight history to millions of on-site guests from all parts of the globe each year, making it among the most visited museums in the world. In addition, NASM draws more than 11 million virtual guests to its website, broadcast/webcast educational programming, and social media. In 2019, the Museum also led the national celebration of the 50th anniversary of the moon landing, inspiring more than one million people who attended its anniversary events on the National Mall and within the Museum.

In FY 2021, NASM is continuing to collect and preserve the nation's key international aviation and space artifacts and archival material, and to perform original research and reference support in aviation, space history and planetary science to support its broad array of exhibitions, programs, publications, and education and outreach activities. To accomplish its public service mandate and reach diverse audiences, the Museum draws upon a mixture of in-house and contracted resources, and a large corps of volunteers and docents. While continuing to host millions of visitors, the NMB is being completely renovated. We are transforming all exhibits and public spaces of America's favorite Museum to make NASM more than a destination to visit. In Museum exhibits, we will immerse visitors in the stories of the people of all backgrounds who broke barriers, defied what was thought possible and changed the world, to inspire a new generation to accomplish equally amazing feats. Beyond the walls of NASM's buildings, digital offerings will allow anyone anywhere to take a path that engages them through the Museum's collection and stories, provides resources to students, teachers and researchers, and integrates with the in-Museum experience to amplify its impact.

The primary focus for the Museum in FY 2021 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 resulted in a detailed plan to relocate and conserve/preserve more than 4,000 artifacts. This has involved steadily moving artifacts to the Mary Baker Engen Restoration Hangar and Emil Buehler Conservation Lab at the UHC for treatment, and more than 1,700 collections objects have already been relocated. To support the revitalization schedule, NASM first closed three galleries in the Museum in December of 2018 and since then has closed the remainder of the west half of the building, including the museum store, planetarium, and south (Independence Avenue) entrance. Flight simulators have been relocated to the active side of the Museum and temporary Museum shops (one on the ground floor and a second on the second floor) are in use on the east end of the Museum.

The FY 2021 budget request includes an increase of \$1,130,000. The request includes an increase of \$960,000 for necessary pay and other related salary costs for existing staff funded under this line item, and \$170,000 in fixed costs to support the service contract at the Udvar-Hazy Center in Virginia.

MEANS AND STRATEGY

Public Engagement — NASM continues to reach diverse audiences through exhibitions, educational programming, research reference support, publications, and electronic outreach. In FY 2021, we are using our transformation as an opportunity to redefine and strengthen the Museum’s role as a learning facilitator and convener through the exploration of new initiatives that continue to put the audience at the center of the experience. Taking inspiration from recent successful endeavors like the SHE Can Camp and the Teacher Innovator Institute, senior leadership is designing a national education strategy that is poised, in the next 20 years, to help build a nation of innovators and explorers via immersive experiences inspired by real-world issues and rooted in national learning standards to foster critical thinking skills. Developing these skills ensures a strong, forward-thinking and diverse STEM workforce that not only further advances America’s legacy as home to the world’s greatest innovators, but also ensures the face of the workforce reflects that of our population.

Recognizing that we are both a national and a community Museum, in FY 2021, NASM will continue to develop an arc of engagement that engages learners beginning at pre-kindergarten through to adulthood. We will continue to work with educators to build their capacity in teaching science and science-related concepts through high-quality professional development opportunities, including a two-week residential program that includes school-year support. NASM will expand upon camp offerings to include moonshot-inspired design and engineering challenges that are rooted in and have the potential to solve real-world problems. We will build upon the success of our reserved student programs to inspire the next generation of innovators and explorers. We are also inviting local and tourist families, as well as young adults, to create lifelong relationships that will help bring relevance to the generations who did not experience many key aviation and space milestones in their lifetimes.

In FYs 2020 and 2021, NASM staff and volunteers are continuing to provide a variety of Museum programs. NASM Education provides daily activities — such as audio tours, lectures, hands-on science activities, and science demonstrations which reach hundreds of thousands of guests. The Museum also facilitates large, multi-faceted day-long events that can reach tens of thousands of diverse visitors in one day. In FY 2020, NASM will host its third Teacher Innovator Institute — a residential teacher professional development opportunity that is completely free to teachers, bringing back 60 educators from the last two years' cohort to engage this year's 30 educators. The aviation STEM camp will also run for a third year, providing opportunities for 60 participants from Title I schools to attend a two-week camp that explores careers in aviation, engineering design challenges, and the principles of flight, and even includes a 30-minute discovery flight with a certified flight instructor in a Cessna 160 light airplane.

NASM continues to evolve the nature of its programming to complement the physical transformation of the Museum. These events span from evening lectures to innovative collaborations with external partners. In FY 2019, NASM led the national celebration of the 50th anniversary of Apollo 11 with a year of programming, culminating with a week-long celebration at the Museum and on the National Mall. Across five nights in July, more than a half million people experienced the Museum's projection of a Saturn V rocket onto the Washington Monument. Other events included a three-day festival hosted with the National Aeronautics and Space Administration (NASA) and the display of life-size Neil Armstrong statues at Major League Baseball parks across the country. In FY 2021, the Museum will build upon the exposure and excitement gained through programs such as Apollo 50, in an effort to increase the Museum's value to existing audiences while using new and experiential programming techniques to reach new audiences. To do so, the Museum will grow its network of strategic external partnerships and build an identity that engages new and diverse audiences to become brand advocates. Priority projects in FY 2020 include the 75th anniversary of the ending of World War II, the third season of the Museum's podcast *AirSpace*, and programming around Earth Optimism.

The Museum continues to advance the two strategic goals of Preserving Our Natural and Cultural Heritage and Understanding and Impacting 21st Century Audiences by making collections, archival documents, and images available via publicly accessible websites. The NASM collections and archives databases contain extensive information on the history and provenance of each artifact and are an effective way to offer in-depth information to the public through electronic or digitized means. NASM's electronic resources may also encourage more researchers to request access to the Museum's archives and collections, and to make in-person visits to follow up on initial online research efforts. The NASM Archives set up workflows for attaching digital assets to the Smithsonian Online Virtual Archives (SOVA). More than 256,011 digital assets were attached to SOVA in FY 2019, resulting in a total of 329,755 digital assets currently available to the public.

In FY 2021, NASM will continue to build on the success of its digitization program by making high-resolution images and information about our collections available to the public online. As part of the Smithsonian's new Open Access Initiative, the Museum will continually expand the number of collections and digital assets freely available to the public for any use. In addition, NASM will continue to conduct audience research and evaluate the impact of our online collections content with online visitors, making iterative enhancements to improve the user experience. The Museum will also continue to share behind-the-scenes views of our transformation process, panoramas inside famous aircraft and spacecraft, and pursue partnerships and digital storytelling efforts to engage a broader and more diverse audience.

Exhibitions — In FY 2021, the Museum will continue to ensure stewardship of and access to its peerless collection of aerospace artifacts and archival materials, and to produce expert scholarship and research, while developing content and scripts for the new galleries. In support of exhibit transformation, NASM will be finishing work on designs for 10 exhibits in the east end of the National Mall Building. These exhibits will include new designs for the space exhibitions *Moving Beyond Earth*, *Explore the Universe*, and *Space Age* and the interactive science gallery *Textron How Things Fly*, as well as the military aviation galleries for *World War I*, *World War II*, and *Modern Military*. The *Barron Hilton Pioneers of Flight* gallery will get an upgrade that will feature the *Spirit of St. Louis* airplane. Work will also be completed on the design of a new gallery for the east end, reflecting the new approaches to access to and use of outer space, the *Future of Spaceflight* gallery. The Museum also started the fabrication of the eight west-end exhibits with a projected installation start in FY 2021. These new exhibits include: *Early Flight*, *A Nation of Speed*, *Exploring the Planets*, *America by Air*, *Tom Haas We All Fly*, *Destination Moon*, *Wright Brothers*, and *One World Connected*. In addition, NASM will enhance its vision of the Museum's transformation by planning on a rotating exhibition addressing topics related to innovation, *What's Next: Innovations in Aviation and Space Flight*.

With the Museum under renovation and the Apollo exhibit closed during the 50th anniversary of the moon landing, NASM, in partnership with the Smithsonian Institution Traveling Exhibition Service (SITES), launched *Destination Moon: The Apollo 11 Mission* traveling exhibit to bring the iconic Apollo 11 command module *Columbia* and dozens of other one-of-a-kind artifacts to four major cities: Houston; St. Louis; Pittsburgh and Seattle. In July of 2019, *Destination Moon* was on display at the Museum of Flight in Seattle for the 50th anniversary of the moon landing. A fifth city, Cincinnati, was added to the schedule as a final stop from September of 2019 to February of 2020. *Columbia* will return to NASM and be prominently displayed when the *Destination Moon* gallery is completed and opened in 2022.

Collections — NASM plans to enhance collaboration with private collectors and other Smithsonian museums by requesting loans of key artifacts to share with the public in new exhibits on the inspiring stories of America's role in pioneering aeronautics and space exploration. While NASM has a substantial

number of artifacts currently on loan to other museums, as well as the *Destination Moon* traveling show, it is expected that new or additional outgoing loans will need to be limited during the revitalization of the National Mall Building, due to the sheer volume of work that this effort represents. NASM has refined tools and processes to coordinate loan transactions in support of the transformation, which will also make the Museum's loan program more effective in the future. FY 2019 saw the addition to our collection of two major aircraft acquisitions, an EA-6B Prowler and a Cirrus general aviation airplane as well as a record-setting SpaceShipTwo rocket motor.

Artifact logistics will be the biggest challenge throughout revitalization of the NMB and transformation of NASM exhibits. The Museum has more than 4,000 artifacts affected during these moves. The reimagined NMB exhibits will require artifact relocation to and from multiple NASM locations (that is, Garber, UHC, and the NMB), and will also include returning loaned objects, new loans from other institutions, and objects of all sizes. Approximately 3,300 objects will be re-installed into the Museum as part of the transformation, including many artifacts not currently on display at the NMB. Of the artifacts presently in the NMB, approximately 1,300 are not coming back into the building. Some will go into long-term storage in the new Dulles Collections Center (DCC) Storage Module or will be exhibited at UHC.

Most of the artifacts will require some type of preservation or conservation efforts, and the collections staff has estimated how long the treatment times will be for each artifact. Total treatment of all the artifacts is estimated to take approximately 15,000 workdays, including conservation and preservation. This work is progressing with hundreds of artifacts already moved, treated, or in treatment. For example, the Wright Military Flyer has recently been relocated from the NMB to the UHC and is undergoing cleaning and conservation.

NASM will continue the relocation of artifacts from the outdated, inadequate storage facilities at the Garber Facility to UHC, including documentation, digital imaging, re-housing for each artifact, and selected conservation as identified through triage. NASM will likely reach the capacity of available storage for medium-size artifacts at UHC in FY 2020. NASM will store medium-sized artifacts at Garber until capacity at the DCC storage module begins to come available in 2024.

Facilities — The Smithsonian Institution has completed construction of the first state-of-the-art storage module at the Dulles Collections Center adjacent to UHC. This building is serving as swing space for storing artifacts from the NMB as the Museum undertakes construction. In FY 2025, after completion of the NMB revitalization, this storage module will support the continued move of artifacts from the Garber Facility, but is only the first of five such buildings required to provide enough space to store all the artifacts remaining at the Garber facility.

Having moved the artifacts out of the west half of the NMB, FY 2020 will see real progress on the NMB revitalization effort, which is estimated to account for \$500,000 of construction value every day. All staff moves in support of these first

steps of revitalization were completed in FY 2018, including moving the advancement, curatorial and business operations staff to rented office space near the Museum, and permanently relocating the Archives and Smithsonian Library to the UHC. Staff who will remain in the NMB during the construction have been consolidated in the east half of the building to facilitate the renovation of staff spaces. In late FY 2021, these staff members will relocate into renovated staff spaces in the west half of the building.

Scientific Research — To achieve the strategic goal of Enhanced Interdisciplinary Research, NASM's Center for Earth and Planetary Studies (CEPS) conducts original research related to planetary exploration, with an emphasis on the evolution of solid surfaces throughout the solar system. The CEPS also curates galleries and offers public programs in the planetary sciences. NASM scientists currently work as science team members for the Mars Reconnaissance Orbiter, Mars Express, Curiosity Mars rover, InSight Mars lander, Lunar Reconnaissance Orbiter, JUPITER ICy moons Explorer (JUICE), Europa Clipper, and the Dragonfly missions. NASM scientists analyze the data from these and other missions to solar system bodies, and convey this exciting information to the public. Original research and publications in scientific literature concentrate on the National Research Council and NASA priorities to determine the origin of solar system bodies and habitable planets, with an emphasis on the past climate of Mars and icy moons with subsurface water in the outer solar system.

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, space sciences, and aviation and space art. Based on their research and expertise, the archives and curatorial staff will continue to evaluate potential acquisitions for the national collections and respond to numerous public inquiries. NASM will also continue to upgrade exhibitions dealing with aviation and spaceflight, thereby ensuring that current materials are available to the public.

Across NASM, our scientists and historians continue to lead the way in impactful and significant engagement and discussion, producing an average of more than 50 publications each year, many award-winning. For example, in FY 2019, the book, *Reinventing the Propeller: Aeronautical Specialty and the Triumph of the Modern Airplane*, by NASM curator Dr. Jeremy Kinney, won the American Institute of Aeronautics and Astronautics' 2020 Gardner-Lasser Aerospace History Literature Award. Dr. Thomas Watters, senior scientist in the CEPS, received the Smithsonian Secretary's Distinguished Scholar in Science Award for his career-long record of publications in planetary science. Other significant publications by NASM scholars in FY 2019 included *Apollo to the Moon: A History in 50 Objects*, by Teasel Muir-Harmony, with a forward by Apollo 11 astronaut and former NASM director Michael Collins; *The Life and Science of Harold C. Urey*, by Matthew Shindell; and *Spaceflight: A Concise History*, by Michael Neufeld.

Digital, Social Media, and Media Outreach — The Museum continues to expand its use of digital and social media outreach to share educational, collections and research information with the public and encourage their engagement with online assets, visiting the Museum, and participating in programs and events. Across all platforms, followers of the Museum increased more than 10 percent in FY 2019 to nearly three-quarters of a million, with more than 100 million impressions. Website visits increased by 10 percent to 11 million. In FY 2021, the Museum will focus on using analytic data to better deliver targeted content to students, teachers and other key audiences to ensure they have access to the Museum’s educational resources. This will enable NASM to reach both visitors to and residents of the region to provide timely information on visitation and programs.

The Museum also coordinates consistently with local, national and international media to ensure potential visitors are aware of the collections, educational offerings, research findings, and Museum events. During the month of the Apollo 11 50th anniversary celebrations, more than 5,000 stories were produced about the Museum, reaching a potential audience in the billions.

Management — NASM will continue to pursue the strategic goal of Enabling Cost-Effective and Responsive Administration. In FY 2020, NASM is developing a new strategic plan that will ensure the Museum is positioned to maximize the opportunities provided by the revitalization and transformation of the National Mall Building. Additionally, NASM is pursuing diversity and inclusion initiatives to ensure that the Museum, its galleries, staff and volunteers reflect the population of the United States and the world.

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. A \$250 million campaign to support the transformation of the National Mall Building and the reimagining of the 23 exhibits and presentation spaces is under way, with \$115 million already secured. Private-sector support is also used to fund educational initiatives and public programs. Government grants and contracts support research and other scientific activities. Due to the closures of the revenue-generating activities and a reduced number of guests during the revitalization project at the National Mall Building, revenue generated by Smithsonian Enterprises has dropped and will continue to decline during the revitalization project.

SMITHSONIAN ASTROPHYSICAL OBSERVATORY

	APPLICATION OF OPERATING RESOURCES									
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS		INTERAGENCY	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2019 ENACTED	99	24,593	102	24,640	10	7,658	241	77,815	1	212
FY 2020 ENACTED	99	24,745	101	22,370	10	9,026	222	79,729	1	217
FY 2021 REQUEST	99	25,431	101	22,370	10	9,026	222	79,729	1	217

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in impactful scientific research and discovery	90	19,580	90	20,204	0	624
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	198	0	7
Facilities and Safety						
Improve Smithsonian facilities operations and provide a safe and healthy environment	0	312	0	312	0	0
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	8	4,462	8	4,517	0	55
Information Technology						
Improve the Institution's information technology systems and infrastructure	0	200	0	200	0	0
TOTAL	99	24,745	99	25,431	0	686

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; and in Arizona the 6.5-meter diameter Multiple Mirror Telescope (MMT), the Very Energetic Radiation Imaging Telescope Array System (VERITAS); and the specialized telescopes at the Fred Lawrence Whipple Observatory. In addition, SAO conducts research with a broad range of powerful instruments aboard rockets, balloons, and spacecraft (most notably the Chandra X-ray Observatory, the Spitzer Space Telescope, the Hinode Telescope, the Solar Dynamics Observatory, and the Parker Solar Probe); and at locations as diverse as the high plateaus of northern Chile and the Amundsen South Pole Station. Headquartered in Cambridge, Massachusetts, SAO collaborates with the Harvard College Observatory to form the Center for Astrophysics | Harvard and Smithsonian.

For more than 62 years, SAO astronomers and their colleagues have made revolutionary discoveries which have changed our fundamental understanding of the universe and our place in it. We have discovered and examined planets in orbits around other stars, watched as new stars are born, and discovered bizarre remnants of dead stars that emit vast quantities of x-rays. We have determined that the universe is 13.7 billion years old, and that it is populated with billions of galaxies, many of which have supermassive black holes at their centers. In addition, we have found convincing evidence that most of the matter in the universe is an unexpected mixture of some kind of unseen "dark matter," with normal matter making up less than four percent of the total; and that the expansion of the universe is apparently accelerating, driven by a mysterious and invisible "dark energy." At the same time, SAO astronomers work systematically on the vital basic research that seeks to explain the sun and its x-ray-emitting corona, the nature of the solar system, the abundant elements in our Milky

Way Galaxy, the gas and dust between the stars, the formation and evolution of galaxies, and other important questions about the nature of the universe.

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

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

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

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

The FY 2021 budget request includes \$686,000 for necessary pay and other related salary costs for existing staff funded under this line item.

MEANS AND STRATEGY

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

Telescope Array, an international collaboration that will build upon VERITAS' successes. These facilities enable SAO scientists to make substantial progress in answering fundamental questions about the origin and nature of the universe, including efforts to understand more about dark energy and dark matter, as well as questions about the formation and evolution of the Earth and similar planets. In addition, SAO scientists will continue their work on future space missions, collaborating with NASA and its research center on missions to study the sun, the x-ray universe, and the outer solar system.

SAO scientists are taking the lead in expanding the international Event Horizon Telescope (EHT), which draws radio telescopes around the globe into one network, including SAO's SMA, to operate as one gigantic radio observatory to study the physics of the supermassive black holes at the centers of two galaxies: our own Milky Way and the giant galaxy M87. The iconic image of the M87 black hole, released to the world on April 10, 2019, is probably the most seen scientific image in history. SAO's leadership in coordinating the project that produced the amazing picture directly contributed to the EHT being awarded the prestigious 2020 Breakthrough Prize in Fundamental Physics. SAO is also collaborating with Taiwan's Academia Sinica, Institute of Astronomy and Astrophysics, to establish a radio observatory in Greenland. The telescope was delivered to Thule in 2016 and came online in 2018. This radio observatory played a crucial role in enabling the Event Horizon Telescope's observations of M87.

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

In addition, the SAO team delivered and now operates a major instrument on NASA's Parker Solar Probe mission. The Solar Wind Electrons, Alphas and Protons (SWEAP) is the only instrument on this mission that looks directly at the sun as the spacecraft approaches closer to the sun than any previous mission. The Parker Solar Probe was launched from Cape Canaveral on August 12, 2018, and the mission and SWEAP are delivering exceptional scientific results.

SAO scientists take a leadership role in astrophysics by participating in or hosting national and international conferences (e.g., the American Astronomical Society, the International Astronomical Union, and the Astronomical Data Analysis Software and Systems conference series), by participating as keynote and/or invited

speakers at such meetings, and by serving on a diverse range of astronomical and astrophysical review panels. SAO scientists will also continue to publish in leading peer-reviewed journals, such as the *Astrophysical Journal*, the *Astronomical Journal*, and *Astronomy & Astrophysics*. In addition, SAO developed and operates the Astrophysics Data System, which is recognized as a world leader in the dissemination of scientific literature about the cosmos.

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

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

NONAPPROPRIATED RESOURCES — General trust funds come primarily from overhead charged on grants and contracts. SAO uses these funds to support administrative functions approved in the Indirect Cost Proposal submitted to the Department of the Interior, 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 2019 ENACTED	0	4,118	0	0	0	0	0	0
FY 2020 ENACTED	0	4,118	0	0	0	0	0	0
FY 2021 REQUEST	0	4,118	0	0	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		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 Smithsonian Strategic Plan's goal to "Drive large, visionary, interdisciplinary research and scholarly projects." Within this goal, SAO drives the Grand Challenge of "Unlocking the Mysteries of the Universe," by calling for the Smithsonian to "advance knowledge at the forefront of understanding the universe and solid Earth."

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

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

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

Three SAO projects are included in the FY 2021 MSI line item: the Greenland Telescope; the Submillimeter Telescope Array (SMA) on Mauna Kea, Hawaii; and the Advanced Telescope Instrumentation for the converted Multiple Mirror Telescope (MMT) at SAO’s Fred L. Whipple Observatory at Mt. Hopkins, Arizona and the Giant Magellan Telescope in northern Chile.

MEANS AND STRATEGY

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

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

and Infrared Telescope. SAO also offers key advice and reviews to the National Aeronautics and Space Administration (NASA) for the James Webb Space Telescope.

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

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

Greenland Telescope (\$500,000)

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

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

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

In FY 2018, SAO, with its partner ASIAA, achieved first light with the telescope in Thule, at the United States Air Force base in Greenland, and in FY 2019 connected the antenna with the SMA and other Event Horizon Telescopes to make unprecedented observations of the event horizon of the black hole at the heart of galaxy M87. The telescope will be a key resource for the next set of observations of M87 in FY 2021.

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

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

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

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

The SMA is a key element of the Event Horizon Telescope, linking several submillimeter observatories, on continental scales, to examine the black hole at the center of the Milky Way at high angular resolution. The Greenland Telescope joined the Event Horizon Telescope in FY 2018, enabling key observations of the black hole at the center of galaxy M87 that led to the first image of the event horizon of a black hole produced on April 10, 2019.

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

The sensitivity of the SMA depends on the instrumentation that processes the incoming signals. SAO is developing new capabilities that will ultimately make the entire

SMA 12 to 24 times more sensitive than it was when commissioned. (This is as though each of the telescopes became 12–24 times larger. Note that the range of enhancement depends on the operational model of the array.) Funds are requested in FYs 2020 and 2021 to enable the array to become 6–12 times more sensitive, a significant step toward the full enhancement.

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

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

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

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

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

SAO scientists are advising their counterparts at the National Autonomous University of Mexico (UNAM) on the development of a new telescope that will be very similar to the MMT. This telescope will be located at the superb San Pedro Martir site in Baja California, Mexico, with an estimated construction time of four to six 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 2029, it will be the largest optical telescope in the world, with a 24.5-meter (83-foot)-diameter primary mirror. This larger aperture will allow SAO to peer back in time and explore the earliest phases of the universe, and to take much sharper images than those obtainable with the Hubble Space Telescope or the James Webb Space Telescope.

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

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

After the successful transition of Binospec to scientific operations in FY 2020, MSI funds will be used in FY 2021 to complete a key enhancement to Binospec. Additionally, MSI funds will continue to advance the design of G-CLEF and develop prototypes of high-risk subsystems needed to use the instrument to its full potential.

NATIONAL MUSEUM OF NATURAL HISTORY

	APPLICATION OF OPERATING RESOURCES									
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS		INTERAGENCY	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2019 ENACTED	315	49,789	19	5,025	58	17,374	15	3,419	9	804
FY 2020 ENACTED	315	49,789	20	5,060	59	18,025	16	3,550	9	850
FY 2021 REQUEST	317	52,130	20	5,080	59	17,700	16	3,600	9	860

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in impactful scientific research and discovery	104	17,305	104	17,939	0	634
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	4	495	4	519	0	24
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	13	1,743	13	1,822	0	79
Exhibitions						
Offer compelling, first-class exhibitions	47	7,048	47	7,334	0	286
Education						
Engage and inspire diverse audiences	28	3,553	28	3,724	0	171
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	86	14,622	88	15,569	2	947
Facilities and Safety						
Improve Smithsonian facilities operations and provide a safe and healthy environment	4	842	4	866	0	24
Security						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	1	181	1	187	0	6
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	14	1,764	14	1,849	0	85
Information Technology						
Improve the Institution's information technology systems and infrastructure	14	2,236	14	2,321	0	85
Total	315	49,789	317	52,130	2	2,341

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 investigating 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 climate change, biodiversity loss, cultural conflict, and natural hazards.

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

NMNH science has global impact and is widely cited by the greater scientific community. Our scientists discover new species and 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 our interactions with other life and with the planet. Our Museum's science staff also translates science to society through its 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 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 further build and draw on these collections, make new discoveries, and test new theories. NMNH collections also represent an invaluable historical archive, documenting billions of years of planetary, geological, organismal, and cultural changes.

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

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

The NMNH's first-class research and collections support its exhibitions and educational outreach. As one of the most visited museums in the world, NMNH provides diverse public audiences with presentations on every aspect of life on Earth. In FY 2019, the Museum hosted more than four 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, parks, schools, and universities across the country. With a growing network of interactive websites (which hosted more than 12 million unique visitors), distance-learning experiences, social media and software applications (apps), the Museum is transforming itself into a true digital classroom that is potentially accessible to everyone — free of charge.

The FY 2021 budget request includes an increase of \$2,341,000. The increase includes \$1,932,000 for necessary pay and other related salary costs for existing staff funded under this line item, and a programmatic increase of 2 FTEs and \$409,000 for collections managers.

MEANS AND STRATEGY

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

In FY 2021, the Museum will continue to use a combination of federal and private funding to advance the NMNH's goals of investing in the next generation of scientists and researchers. Through the Museum's academic programs, it will continue to create a staircase of academic opportunity to mentor the next generation of museum scientists and professionals. These programs take students and young professionals from the early stages of exploration in high school to the postdoctoral peak of stepping into the role of being professional scientists, by offering various Fellowship and internship programs for undergraduates, graduates, and postgraduates.

Also in FY 2021, the NMNH will contribute to Preserving Our Natural and Cultural Heritage by continuing to emphasize the following: collections preservation and access projects related to initiatives in preserving indigenous languages through preservation of manuscripts, recordings, and still and moving images; preserving and digitizing animal, plant, and fossil collections and their associated paper records; assessing and improving the management of archival materials; and preserving biological samples at ultra-cold temperatures to document biodiversity as part of the Global Genome Initiative.

Collections Care Initiative (CCI) 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 2021 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 its strong 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 2021 the NMNH will continue to 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.

Many years of dedicated work by scores of people throughout the Museum and beyond came to a climax on June 8, 2019, with the long-awaited opening of *The David H. Koch Hall of Fossils — Deep Time* exhibition, the largest and most complex in the Museum's history. The response by visitors, peers, and the press has been overwhelmingly enthusiastic. The exhibition is the centerpiece of a wide range of related CCI projects, including a rich array of educational programming, two major scientific symposia, extensive field research, and public outreach through traditional and social media. The Museum used approximately \$50 million in private funds for the exhibit fabrication, remounting of the fossils in the Hall, and educational programming. This exhibit demonstrates how the Museum is successfully combining federal funding with its own philanthropic fund raising from private sources.

The Museum's exhibition *Outbreak: Epidemics in a Connected World* (on view into 2021) continues to be popular with the NMNH's audiences and with members of the global health community. Support for the exhibit and an extensive slate of related programming has come from numerous agencies, including the Centers for Disease Control and Prevention (CDC) and the National Foundation for Infectious Diseases (NFID), as well as foundations and individuals. The print-on-demand poster version of the exhibit, *Outbreak DIY*, is carrying the crucial messages on human, animal, and environmental health to schools, libraries, clinics, and other locations around the globe. As of October 2019, the *Outbreak DIY* poster has been displayed in 114 locations, in 32 countries, and 23 states, including Washington, DC and Puerto Rico, and is printed in at least seven languages. In early 2020, the Museum will complete a Web platform to simplify distribution and help meet an expected increase in demand.

Unsettled Nature: Artists Respond to the Age of Humans opens in March of 2020 to mark the first anniversary of the opening of the *David H. Koch Hall of Fossils — Deep Time*. This exhibition will feature eight artists who raise awareness of and encourage reflection on the role of humans in shaping Earth's recent past, present, and future. With curatorial supervision from the Smithsonian American Art Museum, the NMNH expects *Unsettled Nature* to be an exhibition of innovative and thought-provoking art in a variety

of media, and to provide a forum for conversation around Anthropocene topics. The exhibit is supported in part by the Windland Smith Rice Fund.

In FY 2021, 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. The NMNH is continually improving the accessibility of exhibits and programs, and successfully reaching underserved audiences and people from under-represented communities.

To achieve the strategic goal of Understanding and Impacting 21st Century Audiences, in FY 2021 the NMNH will conduct evaluations and research the effectiveness of programs and activities with audiences, both at the Museum and nationwide. In 2021, the Museum will disseminate findings from studies on the impact of distance-learning programs on elementary students' perceptions of science and scientists. The NMNH will also share methods developed with school system stakeholders to support science learning among high school students, and will disseminate findings on the impact of educational Deep Time activities in underserved communities across the nation. These studies will shed light on how co-learning can occur when children and parents participate in science activities together.

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. In FY 2021, the Museum will continue to design Q?rius programs to inspire, nurture, grow, and diversify the next generation of STEM professionals by helping citizens become aware of their connection to current issues affecting the natural and cultural world. To achieve this, the Museum will create more opportunities for visitors to participate in learning experiences based on current research and authentic collections in the Q?rius center and throughout the Museum.

Also in FY 2021, 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 2021, the NMNH will make available the Museum's science experts and collections from behind the scenes, and provide the public with opportunities to engage with scientists, their research, collections, and research-grade scientific equipment, with programs such as "The Expert Is In" series. In addition, the Museum will continue to host special themed days and festivals that bring the public and NMNH science experts together to focus on a specific area of natural history and science, such as Teen Earth Optimism, National Fossil Day, World Ocean Day, International Polychaete Day, Invasive Species Awareness Day, Pollinator Week, the

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

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

EXPLANATION OF CHANGE

The FY 2021 budget request includes an increase of \$2,341,000. The increase includes \$1,932,000 for necessary pay and a programmatic increase of 2 FTEs and \$409,000 for collections managers.

Collections Stewardship (+\$409,000, +2 FTEs)

The funding will enable the Museum to support essential levels of collections access and stewardship to meet the needs of resident researchers and external users, particularly involving the care and management of the recently transferred National Parasite Collection from the U.S. Department of Agriculture (USDA) and a large, complex collection from the National Cancer Institute.

The National Parasite Collection is among the largest and most active parasite collections in the world, and is an important resource used by scientists and experts around the world, helping them with research and investigating livestock, and wildlife infections, as well as assisting with quarantine and disease eradication efforts in people. The collection, which the Government first began collecting in 1892, was transferred to the Smithsonian from the USDA in 2014 and contains more than 20 million specimens. Many specimens have been stored in inadequate containers, causing severe deterioration. The budget increase request will assist the Museum in sorting, cataloguing, and moving the collection into new storage containers that meet Smithsonian standards.

The National Cancer Institute (NCI) collection contains an extensive collection of tissue samples from rare and highly controlled animals, making it an unusually valuable resource. The samples were collected by the NCI on one of their many bioprospecting surveys in marine and terrestrial environments, searching for anticancer compounds. The budget increase will help the Museum curate and store the collection at Smithsonian standards as well as support maintaining, accessing and using the collection for scientific research.

NONAPPROPRIATED RESOURCES — General trust funds support salaries and benefits of administrative personnel, advancement and business activities, and other program-related costs. The Museum raises funds from private sources to support research, exhibitions, public programs, and administrative functions. This fund raising includes securing donations from special events to promote new exhibitions and educational initiatives, as well as public outreach. Donor/sponsor-designated funds are vital to support exhibition hall renovations, such as the major gifts that have helped to fund extensive renovations of the *Fossil Hall* and ongoing upgrades to the *Oceans* and *Human Origins Halls*, 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, underwrite field research, and help the Museum maintain and expand its educational programs.

In FY 2021, a gift made by Jere and Bonnie Broh-Kahn will fund the assistant director for education, outreach, and visitor services position. This role is responsible for defining and directing the development and implementation of education, outreach, and visitor programs for the Museum, and expanding the public impact to provide a first-class experience for our visitors.

In FY 2021, endowment funds will support research, exhibit, and education programs, including many Fellowships. The Robert Hevey and Constance Filling Fellowship offers positions in the anthropology and mineral sciences departments. This endowment allows students the chance to study under expert guidance, advance their research, and shape their future careers. Endowment funds also support curatorial positions, including the Coralyn W. Whitney Curator of Gems and Minerals. Endowed positions bring long-term sustainability to key curatorial positions to ensure the advancement of important work and continuity across leadership in the department. A department of botany research endowment, the Raymond Fosberg Endowment, supports field research in the Pacific Islands and the Neotropics, collections-based research in the National Herbarium, travel opportunities for early-career botanists, and emerging technologies in botanical research. These endowments provide opportunities for exploration and discoveries for scientists across all departments and for varying career levels.

Finally, in FY 2021, grant funding will support continuing research and treatment of Florida's coral tissue loss diseases; research into a glacial retreat and the cultural landscape of an ice floe at Yakutat Bay, Alaska; spring salamander research in West Virginia; documentary films and images of volcano hazard awareness; and bringing oil spill research to the public.

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 2019 ENACTED	215	27,566	42	8,309	42	10,954	12	3,101
FY 2020 ENACTED	215	28,066	47	12,518	45	11,443	12	2,500
FY 2021 REQUEST	217	30,105	47	12,518	45	11,500	11	3,000

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in impactful scientific research and discovery	45	4,515	45	4,800	0	285
Understand and Impact 21st Century Audiences						
Exhibitions						
Offer compelling, first-class exhibitions	106	14,847	106	15,517	0	670
Education						
Engage and inspire diverse audiences	1	131	1	137	0	6
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	54	6,896	56	7,916	2	1,020
Facilities and Safety						
Improve Smithsonian facilities operations and provide a safe and healthy environment	2	320	2	333	0	13
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	5	946	5	978	0	32
Information Technology						
Improve the Institution's information technology systems and infrastructure	2	411	2	424	0	13
Total	215	28,066	217	30,105	2	2,039

BACKGROUND AND CONTEXT

In FY 2021, the Smithsonian's National Zoological Park and Conservation Biology Institute (NZP/SCBI) will continue to implement its strategic plan, *Our Plan to Save Species*. With the strategic plan as the roadmap, the focus in FY 2021 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 among 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 the 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 the 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 appropriate 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 the 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, the management and making of hay for animals (both at SCBI and NZP locations), 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 resulted in increased cheetah reproduction. Scientific studies led by SCBI have further contributed to improvements in animal management techniques; one study demonstrated that allowing multiple males to live together as they would in the wild improves reproductive success, 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 near extinction (with fewer than 20 individuals in the 1960s), SCBI studies have revealed no adverse effect on male fertility. Meanwhile, SCBI scientists are developing new sperm freezing and hormonal monitoring methods so that artificial insemination programs can be more effective in reproducing under-represented species of birds. These innovative tools are being applied to conservation programs for rare Asian crane species maintained in SCBI's animal collection at Front Royal, including white-naped and hooded cranes. SCBI scientists are using this hard-won expertise to increase total animal numbers and put these populations of rare species on a trajectory to genetic sustainability.

NZP/SCBI science does not stop at the borders of the Front Royal campus or Rock Creek Park facility. For example, NZP/SCBI and its partners are working 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 zoo 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 focused internships that help participants reach a range of academic and professional goals. Internship 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, providing an introduction to conservation field studies and careers.

In FY 2020, with continued efforts in FY 2021 to address guest services and the visitor's experience, NZP will leverage visitation to raise public awareness of species under threat. During visits, guests are introduced to flagship species. Flagship species such as pandas and Asian elephants act as goodwill ambassadors to help the public support conservation of that species and their habitat, and by doing so protect other species sharing the same habitat or vulnerable to the same threats.

Significant mammal additions in FY 2019 and expectations for FY 2020 include clouded leopard cubs, a female amur tiger, and a sea lion pup. Zoo staff expects successful breeding for the carnivores (lions/tigers and cheetahs), elephants, giant

pandas, and pinnipeds (sea lions and seals). The addition of large animals increases feeding costs for meat, fish and other food items. An aging herd of female elephants requires increased medical care, as well. The Zoo is home to the oldest elephant in the country, at the age of 73 years old, which is impressive because the median life expectancy of elephants is 47 years.

The Zoo welcomes about two million visitors every year. The Zoo continues to expand its on-site efforts to engage all visitors. In FY 2021, NZP is taking strides to put accessibility at the forefront of exhibit design. The following projects demonstrate this commitment.

Coral Lab

The Coral Lab in the Zoo's Amazonia building is already a popular destination for visitors to "lose" themselves in the flowing motion, cool colors, and bubbling water of our coral tanks. The Zoo plans to accentuate these calming qualities of the coral and their habitat by introducing a collection of sensory elements, including an immersive underwater video projected on the walls, with soothing aquatic sounds. Rough and smooth 3D coral models will provide our guests a tactile experience. When complete, entering the room will transport visitors to the waters of a coral reef, deepening their connection to coral and their habitat, while also providing a much-needed calming space for children and adults at the Zoo.

Gibbon Ridge

The *Gibbon Ridge* exhibit will be updated to improve accessibility for deaf and blind visitors at the Zoo. Tactile enhancements will include life-size, touchable sculptures of a siamang arm and hand, along with various animal enrichment items. Exhibition panels are fully translated into braille, and fonts are larger than usual. Many of the images on the graphics are textured, including pictures of the fruit gibbons eat and a map showing their range. To improve wayfinding, there is a tactile map of the exhibit, a guide rail of artificial vine, and raised floor tiles in front of each graphic for detection by guests with canes.

Guinea Pigs in Amazonia

Designed and built in-house by the Zoo's exhibits team, the new guinea pig exhibit activates a previously underused space in the Amazonia building. The animal habitat mimics the rustic multi-level villages often constructed to house guinea pigs in Peru. Zoo visitors will learn about the ancestry of these popular pets, and their cultural significance in South America.

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 to fund these activities. 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 2021, the Zoo will continue its internal customer service initiative to provide staff with meaningful ways they can improve the guest experience. This internal training program is essential to help staff use customer service best practices to guide interactions and underscore conservation messaging.

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

Even more people visit the Zoo's website than come in person to the Zoo — more than three times as many! In 2019, 6.3 million people visited the Zoo's website, racking up more than 20 million pageviews. What makes this even more impressive is that 6.2 million of those Web visitors were new to the website. This means the Zoo's excellence in animal care and sciences reached more than six million people that it never had before. Meanwhile, the ever-popular Giant Panda Cam had more than two million pageviews, with an average time of more than nine minutes spent on the page.

New on the website this year was the integration of an artificial intelligence chat bot that answers visitors' most frequently asked questions. Since its launch in April of 2019, the chat bot has fielded more than 80,000 questions, cutting down on phone calls and Web inquiries, and ultimately helping guests find the information they are looking for faster and easier.

In addition to its website, NZP/SCBI has a robust social media presence with more than 1.2 million fans and followers across the Zoo's Facebook, Instagram and Twitter accounts. Digital outreach through social media includes Facebook Live broadcasts, original videos, and thoughtfully developed content that connects online visitors to the Zoo's animals and raises awareness of NZP/SCBI's conservation research and programs. Original video content created in FY 2019 on key conservation programs included coral reefs, human/animal disease transfers and in-situ research on America's prairie species and ecosystems. In FY 2020, the Zoo will continue to grow digital outreach with engaging content.

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 camera traps to monitor wildlife across public lands in the mid-Atlantic states. In the past six years, volunteers have captured more than two million wildlife

images which have been checked by experts and deposited within a Smithsonian digital repository. This has been recognized as one of the top citizen-science programs in the country. In FY 2019, eMammal launched “Snapshot USA,” a collaboration between researchers from each state that uses camera traps to capture the diversity of animals across the United States. In addition, NZP/SCBI is a core partner in Wildlife Insights, a platform that harnesses the power of big data to analyze camera trap images, and to identify specific species and individuals.

As a conservation organization, the Zoo has a responsibility to continue educating the public on sustainable practices. With the onset of OSPRI (One Smithsonian Plastic Reduction Initiative) in FY 2019, the Zoo began working toward eliminating the sale of single-use plastics. We have eliminated all soda bottle sales in the restaurants, soda machines and retail stores, and are working toward eliminating all single-use plastic beverage sales by end of FY 2020. Implementing this initiative requires funding for conservation messaging, education and programmatic planning,

In FY 2021, the Zoo will continue increasing and supporting sustainable practices. The Zoo’s Sustainability Committee piloted a glove recycling program at the Rock Creek campus in FY 2019. The Zoo is researching possible alternatives to the recycling program with a biodegradable glove option. In FY 2021, the Zoo’s Sustainability Committee will continue working with Park Operations to secure funding for the installation of additional bicycle racks to encourage green commuting options.

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

Past years have seen significant upgrades to NZP/SCBI’s capital infrastructure. In FY 2019, we replaced failed/failing building infrastructure components and systems at the Zoo police station, and improved egress and accessibility.

The National Zoo’s Center for Species Survival studies rare and critically endangered species, using reproductive sciences, including the collection and storage of genomic resources derived from biomaterials. The Center will be home to a new BioRepository Facility, which will store frozen germ plasm, DNA samples and cell lines of hundreds of species from around the planet. The scope includes major infrastructure renewal of mechanical, electrical, fire-alarm and life-safety upgrades, roof and façade repairs, window replacement, accessibility improvements, restroom modernization, code compliance, and laboratory improvements.

A major public-facing exhibit renovation of the historic 1928 Bird House and surrounding plateau will transform the facility into an educational celebration of birds and bird migration. This exhibit is essential to tell that important story. Construction on the Bird House began in FY 2018 and is due for completion in FY 2021.

In addition to the upgrades needed for capital infrastructure, the Zoo has an obligation to provide a safe environment for staff and visitors. Tree, landscape and

irrigation maintenance services account for a large portion of the Zoo's Park Operations budget. Workload surveys are required biannually to determine the health of trees on campus, and to determine which trees are a priority for removal. Most recently, the health of some species of trees have declined due to an ash borer infestation. In FY 2019, tree maintenance expenses increased and are expected to continue rising in FY 2020 with the number of trees that must be removed for safety precautions. To counteract the removal process, the Zoo also has an obligation to reforest the campus as well as preserve the healthy existing canopy. Landscaping funds allow the Zoo to complete the recommended plant and tree installations, leaf removal, and exhibit enhancements to maintain a safe and healthy environment for staff, visitors and our living collections. As the Zoo continues to create exhibit and landscape enhancements, irrigation maintenance services will continue to rise in FY 2020 and beyond to account for design, planning and installation of the new irrigation systems.

The FY 2021 budget request includes an increase of \$2,039,000. The increase includes \$1,373,000 for necessary pay and other related salary costs for existing staff funded under this line item, \$200,000 for fixed costs related to Zoo operations, and a programmatic increase of \$466,000 and 2 FTEs for animal welfare.

MEANS AND STRATEGY

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

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

EXPLANATION OF CHANGE

Collections Support (+\$466,000, +2 FTEs)

The NZP is requesting a funding increase (+\$466,000 and +2 FTEs) to provide specialized support for its living and biological materials collections. Unlike the museums within the Smithsonian Institution, the NZP and Conservation Biology Institute (CBI) collections are live animals which require specialized support to meet certain mandatory standards. Furthermore, NZP's species and their requirements are highly varied, from Asian elephants and giant pandas to endangered corals and extinct-in-the-wild frogs. NZP has approximately 130 aquatic exhibits and 55 aquatic holdings, totaling 1.7 million gallons of water. The number of systems and total volume is similar to that of a large public aquarium but spread out over the Zoo's 163-acre park. Without specialized support for the live collection, the quality of both research and animal care will be diminished. Additionally, that support must meet certain standards for housing, maintenance, sustenance, physical conditioning, medical and end-of-life care.

Examples of such support include general support, such as shelter, food and clean, accessible water, essential for the health and welfare of all the animals at the NZP. A more specific example is NZP's Life Support System (LSS), which supports our aquatic animals. NZP's Animal Care Sciences (ACS) unit has been assuming more of the responsibility for the aquatic environments in which our animals live, requiring additional resources to meet animal care standards. Then there are the requirements for specialized items for daily animal care, such as physical therapy blocks for NZP's aging herd of Asian elephants, and for veterinary management, such as a training cage with a blood sleeve for giant pandas. Other specialized needs include specialized equipment for staff safety, such as a shift box for venomous snakes, and particular housing to support collection sustainability, such as nest boxes for Abyssinian ground hornbills.

Most Smithsonian collections are housed indoors. The Zoo's 163-acre park includes a significant number of outdoor habitats and specialized facilities, which support unique needs for its animal collection. For example, shade structures for bison and climbing structures for great apes require routine maintenance. Most critically, the Zoo maintains miles of animal containment, with standards continually being improved and updated. Maintaining animal habitats and providing specialized items for animals' health and well-being are not just recommended best practices, but required by oversight and regulatory entities such as the AZA and the U.S. Department of Agriculture (USDA).

The needs and standards for animal and veterinary care increase as our understanding of the unique challenges of caring for critically endangered species increases and regulations concerning animal health and welfare change. The need for additional resources also changes in response to the fluctuating diversity and size of the collection.

Finally, although we have successfully maintained minimal care standards, mission-essential resources have been redirected to maintain these standards. Without the additional resources for the live collection, the quality of both research and animal care will be diminished or the size of the live collection may have to be reduced — meaning that species at risk today will not benefit in the way that other critically endangered species have. Without additional resources, prior successes will be diminished, and future efforts and visitors' experiences will be put at risk.

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		INTERAGENCY	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2019 ENACTED	32	4,227	9	1,006	17	2,521	25	2,711	25	2,348
FY 2020 ENACTED	34	4,472	9	1,150	17	2,900	25	3,300	25	2,400
FY 2021 REQUEST	34	4,670	9	1,150	17	2,900	25	3,300	25	2,400

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in impactful scientific research and discovery	25	3,274	25	3,419	0	145
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	0	130	0	130	0	0
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	2	135	2	147	0	12
Preserve Our Natural and Cultural Heritage						
Security						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	0	115	0	115	0	0
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	7	818	7	859	0	41
Total	34	4,472	34	4,670	0	198

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. In addition, SERC is a Partner in the Institution's key research initiatives, including Conservation Commons, ForestGEO and MarineGEO, our global Earth observatories.

SERC has expanded its role in public engagement in recent years. School-based programs, serving thousands of children annually, continue to be a major emphasis of SERC's public efforts; however, SERC has improved its outreach efforts through its award-winning citizen science program that connects ordinary citizens with real-world scientific investigation. In FY 2019 alone, 550 volunteers contributed 17,500 hours to SERC's research programs in areas of data collection, field work, and other activities. SERC continues its 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, successfully reaching candidates from underserved communities.

SERC will continue to update and streamline management systems and functions, and advance construction of its Facilities Master Plan. In FY 2019, SERC completed a retrofit of its main administration office building to a more energy efficient operation, using the existing geothermal field to provide heat exchange for heating and air conditioning, thus reaffirming the Center's commitment to a more sustainable operation. In FY 2020, SERC will complete a lighting retrofit program for this building, converting office and common space lighting to high-efficiency LED fixtures. Also in FY 2020, SERC will complete the design of renovated and streamlined facilities maintenance and storage facilities. Other projects in progress include further concept development of the Smithsonian Institute for the Environment, a center for convening meaningful conversations among all citizens on a wide array of environmental issues. One aspect of this project is the advancement of Green Village to provide more housing for a growing number of visiting and collaborating scientists and students.

In FY 2019, SERC started the renovation of the Sellman House, the Smithsonian's oldest structure, dating to 1735. The project includes replacing and upgrading the infrastructure, providing adequate power, communications, plumbing, and other amenities. In FY 2020, the project will expand to include a period renovation

of the first floor, and in late FY 2021 the house will open to the public as a new welcome center.

The FY 2021 budget request includes an increase of \$198,000 for necessary pay and other related salary costs for existing staff funded under this line item.

MEANS AND STRATEGY

SERC has an advantage in furthering its research goals and priorities by operating its 2,650-acre site on the Chesapeake Bay. Using the unique assemblage of streams, shoreline, forests and agricultural fields, its scientists investigate the interconnections of aquatic, terrestrial, and atmospheric components of complex landscapes. SERC's research campus also supports research efforts of other collaborators and agencies (e.g., the U.S. Department of Agriculture, U.S. Geological Survey, U.S. Fish and Wildlife Service, and many universities and state agencies). SERC develops innovative approaches and instrumentation to measure environmental changes at four ecological levels (i.e., global scale, landscape ecology, ecology of coastal ecosystems, and population and community ecology), and has developed unique, long-term, and experimental data sets on environmental change. SERC has been a leader in developing the Smithsonian's Marine Science Network of sites along the western Atlantic Ocean for comparative coastal studies, as well as in developing the Tennenbaum Marine Observatories Network. In addition, SERC is a partner site in the National Ecological Observation Network (NEON). To support that research, SERC provides a home for a forest canopy tower and a ground-based sampling array to collect environmental data that feeds a national network established to observe and interpret changes in terrestrial environments.

In addition, SERC is a principal collaborator in the global ForestGEO initiative and maintains a keystone plot that demonstrates the value of temperate forest research for global understanding of terrestrial biomes. During its more than 50-year history, SERC has built a reputation for world-class research, producing many publications which 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 structures and processes in key ecosystems; and community and population ecology.

Looking ahead, SERC research on coastal marine ecology will focus on four key, interrelated areas: the structure and dynamics of marine food webs; the integrity and biodiversity of crucial marine ecosystems; linkages of ecosystems at the land-sea interface; and the ecological regulation of marine biodiversity. SERC seeks to expand its expertise in the ecology of invasive species and how they affect coastal

ecosystems. To implement these goals, SERC will continue to link its research with national and international research networks through the MarineGEO initiative, and enhance the Marine Science Network and the Tennenbaum Marine Observatory Network, which were conceived to coordinate and align the extensive marine research efforts throughout the Smithsonian. SERC is also developing scientific and technological capabilities in analytical chemistry, remote sensing, and instrumentation in coastal watersheds and connected ecosystems. In addition, SERC will continue working with partners in the Conservation Commons to advance conservation science by taking advantage of the Smithsonian's ability to transform complex scientific research into powerful communications tools which will heighten public awareness of topical environmental issues. One example is the global problem of marine debris in the oceans and our waterways and the ongoing effort to work with other governmental and international partners to address this serious issue.

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

SERC continues to implement its comprehensive Facilities Master Plan through projects that provide essential infrastructure improvements and allow for controlled and operationally sustainable growth during the next decade. One of the key components of the plan is the continuing focus on reducing energy and water consumption across the campus. The incorporation of sustainable improvements will ensure long-term savings in operating costs and a reduction in SERC's carbon footprint.

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 essential operating support related to specific programs and projects in research, public education, and professional training. Most of SERC's scientific research program of roughly \$6.0 million annually is supported by Government grants, contracts, and interagency agreements, in addition to the National Ballast Information Clearinghouse (also 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 2019 ENACTED	191	14,486	28	2,216	42	5,461	3	742
FY 2020 ENACTED	191	14,702	27	2,469	32	4,693	5	466
FY 2021 REQUEST	191	15,543	28	2,574	34	4,740	5	489

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	114	9,822	114	10,325	0	503
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	3	165	3	178	0	13
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	5	365	5	387	0	22
<i>Education</i>						
Engage and inspire diverse audiences	2	338	2	347	0	9
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	131	0	4
<i>Security</i>						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	18	660	18	739	0	79
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	40	2,638	40	2,814	0	176
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	8	587	8	622	0	35
Total	191	14,702	191	15,543	0	841

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 a century 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 of 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 a 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 30 staff scientists and more than 200 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 14,000 scientific publications to date, and currently results in one

new scientific publication, on average, every day. A brief list of STRI's achievements includes the following:

- The Institute employs 28 staff scientists resident in Panama out of 30 STRI staff scientists in total.
- In FY 2019, STRI hosted 1,172 scientific visitors.
- In FY 2019, STRI processed a total of 241 academic appointments, of which 137 (57 percent) were women and 104 (43 percent) were men. Of these, 122 (51 percent) were from Latin America. They received 148 internships, 65 predoctoral Fellowships and 28 post-doctoral Fellowships.
- STRI hosted 16 field courses in FY 2019.
- In total, the Smithsonian Research Online bibliography included 523 publications by STRI-affiliated scientists for FY 2019: six books, 32 book sections, three online data sets, seven dissertations, 473 journal articles, and two reports.
- This brings the total number to 14,046 STRI publications in the Smithsonian Research Online bibliography.

Scientific Direction

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

Environmental Health

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

Panama Amphibian Rescue Conservation Project

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

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

Monitoring Forest Health and the Global Carbon Cycle

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

Monitoring the Oceans: MarineGEO

The great success of ForestGEO led to the creation of MarineGEO, a cross-agency 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 better manage and protect our oceans. The network concept includes monitoring basic parameters of water acidity, temperature, salinity, specific conductivity, dissolved oxygen, and chlorophyll, with the intent of making all data

available on the Web in real time. This network and the associated data sets improve our understanding of biodiversity and ecosystem processes. To collect this information, STRI has installed sensors at MarineGEO sites on Panama's Caribbean and Pacific coasts.

STRI is important because of its mission, the Institute's location in the mainland tropics on the narrow Isthmus of Panama, and its relationship with the Government of Panama. Beyond its mission for the Smithsonian, two examples of collaboration with U.S. agencies underscore the important role STRI plays in Panama. The security and facilities infrastructure of Barro Colorado Island led the USGS to establish seismic monitoring equipment as part of its Caribbean Tsunami Warning System. In addition, the Continuously Operating Caribbean GPS Observational Network (COCONet) project, funded by the NSF, has partnered with STRI in developing a large-scale geodetic and atmospheric monitoring infrastructure in the Caribbean. This infrastructure forms the backbone for a broad range of geoscience and atmospheric investigations and enables research on process-oriented science questions with direct relevance to geohazards. U.S. and international partner agencies use STRI's marine station in Bocas del Toro as a COCONet site to monitor sea level rise and plate tectonics — the movement of Earth's crustal plates that can trigger major earthquakes.

Marine Invasions

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

Marine Mammal Conservation

STRI scientists are radio-tracking humpback whales and other marine mammals, and revealed that the whales — notably mothers with calves — were at high risk of being struck by ships entering or exiting the Panama Canal. With support from Panama's maritime and Canal authorities, the International Maritime Organization approved a traffic separation scheme (TSS) in 2014, and officially implemented it as international policy. The scheme requires ships to reduce their speed to no 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

Coibita Island was bequested to STRI to preserve and use for research, and as of 2018 is fully under STRI jurisdiction. 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 into marine biology.

Microbial Biology Research Program

As part of their core missions, SCBI, STRI and SERC will establish tropical and temperate microbial biology research programs to fill significant gaps and complement current data on ecosystem and species biodiversity and health in tropical and temperate ecosystems. Microbial biology is an important field of study because small life forms such as microbes, viruses, and microfungi constitute key branches of the Tree of Life, yet the overwhelming majority of their biodiversity has never been documented, and in most cases their contributions to sustaining ecosystem functions and the health of animals are unknown. Microbes help maintain the health of the biosphere in general, and human health in particular: beneficial microbes degrade organic detritus and environmental pollutants; they supply essential nutrients and chemicals directly to multi-cellular organisms, and to terrestrial, coastal and marine ecosystems. They sustain beneficial symbioses with higher organisms; for example, by providing nitrogen to numerous flowering plants and agricultural crops, sustaining corals, and acting to combat disease and promote animal health. Microbes provoked and then fueled the revolution in public health brought on by the discovery of antibiotics by Sir Alexander Fleming in 1928; they represent our best hope to make our way through what the Centers for Disease Control and Prevention has flagged as the post-antibiotic era, as we already confront nearly 20 strains of pathogenic bacteria resistant to all known antibiotics. This initiative is important because malevolent microbes challenge our public health systems, threaten agricultural, marine and terrestrial ecosystems, and attack corals, plants, fish and other animals, as well as vulnerable human populations. Microbial pressures from human activities are most intense in coastal ecosystems, where most humans live. The increasing contact between humans, our livestock, and wild animals threatens to unleash new microbes as emerging agents of infectious disease. Emerging infectious diseases can jump from wildlife to local human populations, and then spread globally through air travel in astonishingly short periods of time. Biotic factors, and their interactions with other organisms, are most intense in the tropics, where many diseases emerge. The tropics, however, are not isolated from the United States and other nations in the temperate zone. This initiative will also help provide critical data relating to infectious microbial diseases carried by wildlife, such as migratory birds en route to North America, with the Chesapeake Bay estuary (where SERC is located) being an especially important point on the migratory flyway.

The FY 2021 budget request includes an increase of \$841,000 for necessary pay and other related salary costs for existing staff funded under this line item.

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 108 years and STRI has been an exceptional ambassador of goodwill for the United States in Panama and throughout Latin America.

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

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

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

STRI continues to work with primary school science teachers to inspire wonder and critical thinking skills in the classroom. In Panama and through digital partnerships

with school districts in the United States, STRI continues to explain field and laboratory science and make environmental research accessible to teachers and students.

ENABLING STRI's MISSION THROUGH ORGANIZATIONAL EXCELLENCE

STRI continues to advance the vision detailed in the 10-year plan for upgrading its facilities, some of which date back to the pre-World War II era of Panama Canal defense. The 10-year STRI facilities plan represents an important opportunity for the Smithsonian to provide its tropical scientists with the modernized, sustainable, and state-of-the-science facilities needed to face the environmental challenges of the 21st century.

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

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

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

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

FY 2021 will be another year in which STRI continues to more efficiently use its available resources while at the same time adapting its work to be more cost-effective in the ever-expanding economy of Panama. STRI's organizational efforts will include continued upgrades of its physical plant by seeking to reduce deferred maintenance and to conduct more design planning. In addition, STRI will rely on its restructured organization, including its Information Technology department and Finance and Administration areas, to better and more efficiently meet the needs of its scientific computing community as well as the business needs of the Institute.

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

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

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

ARTHUR M. SACKLER GALLERY/FREER GALLERY OF ART

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2019 ENACTED	45	6,273	6	2,284	59	11,079	0	161
FY 2020 ENACTED	45	6,273	4	1,925	62	13,407	0	230
FY 2021 REQUEST	45	6,541	4	1,983	62	13,809	0	237

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	6	1,446	6	1,482	0	36
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	0	55	2	67	2	12
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	3	267	2	279	-1	12
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	16	2,200	16	2,295	0	95
<i>Education</i>						
Engage and inspire diverse audiences	5	459	5	489	0	30
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	12	1,397	12	1,468	0	71
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	3	449	2	461	-1	12
Total	45	6,273	45	6,541	0	268

BACKGROUND AND CONTEXT

In a world of intensifying global connections, kaleidoscopic perspectives, and virtual realities, where does one go to make sense of things? Museums are places where one can find ways — through seeing, comparing, and appreciating varieties of human experience. Like maps, museums tell us both where to look and how to look.

And just as maps are redrawn or are even re-oriented by new thinking and new technologies, so, too, are museums. All art museums face the challenges posed by emergent forms of culture, changing expectations on the part of the public, and increasing financial pressures. But for a museum devoted to the arts and cultures of Asia, particularly in what is fast becoming the Asian century, there are also special opportunities.

On May 9, 1923, the Freer Gallery of Art quietly opened its doors to the public, the fulfillment of Charles Lang Freer's commitment to make his collection of nearly 10,000 Asian and American works of art available to the nation. In addition to representing the first fine arts museum on the National Mall, the Freer Gallery embodies its founder's passion for the arts of Asia and the works of James McNeill Whistler and others.

Almost 65 years later, on September 28, 1987, the Arthur M. Sackler Gallery opened, adding another 1,000 works of Asian art and more than 40,000 square feet of public space. The addition was genuinely transformative. Not only did it expand capacity for educational and research activities, but for the first time it also enabled the Smithsonian to mount an active program of international loan exhibitions in the arts of Asia.

Together, the Freer and Sackler Galleries, which constitute the National Museum of Asian Art, now house one of the world's finest collections of Asian art. Some 42,000 objects range from the Near East, through South and Southeast Asia, to East Asia, from the Neolithic period to the 21st century. Many of these works are renowned and iconic. Conjoined physically and unified administratively, the Galleries are dedicated to increasing our understanding of the arts and cultures of Asia through a broad portfolio of exhibitions, publications, conservation, research, and education.

Charles Lang Freer's success as an industrialist and a connoisseur of Asian art derived in no small part from the interconnected world in which he lived. Now, in an unprecedented moment of global interdependence, when Asian societies are increasingly powerful hubs in a polycentric and networked global system, there is a new urgency for revising and refocusing some of our core assumptions and operations as a Museum that can foster an understanding of the historical and artistic diversity of Asian cultures and societies.

Based on broad consultation, and fully aligned with the Smithsonian Institution's strategy, the Galleries' new strategic plan (adopted in June of 2019) charts a path for

the Museum that is as faithful to our past as it is ambitious for the future. The vision, values, and goals that it sets out promise a more creative, engaged, and efficient Museum, one that celebrates art and addresses essential questions about culture. Above all, it aims to do full justice to the extraordinary art it houses and the public trust it holds.

The FY 2021 budget request includes an increase of \$268,000 for necessary pay and other related salary costs for existing staff under this line item.

MEANS AND STRATEGY

To advance both Institution-wide and local goals, the Freer Gallery of Art and the Arthur M. Sackler Gallery will rely on their 2020–2025 Strategic Plan to guide operations, planning and decision making. The plan's four goals are both practical and ambitious. They are as follows:

- Goal 1: To expand, preserve and celebrate our collections;
- Goal 2: To identify, attract and serve new audiences through both our physical and digital spaces;
- Goal 3: To foster an object-inspired understanding of the arts communities, cultures and societies of Asia; and
- Goal 4: To build a Museum culture that is creative, collaborative, transparent and resourceful.

In FY 2021, the Galleries intend to launch or execute the following initiatives:

- Implement a historically sensitive but future-oriented collections plan that reflects our role and responsibility as a National Museum of Asian Art in the 21st century.
- Ensure the integrity of our collection by enhancing the Galleries' excellence in conservation and scientific research.
- Implement a digital plan that extends our reach and impact to national and international audiences.
- Raise our local, national, and international profile through a coordinated campaign of communications, partnerships, and programming to attract audiences interested in understanding and celebrating Asian art and culture
- Better address visitor needs.
- Develop a suite of collections- and exhibitions-inspired programming and educational activities that speak to essential issues in Asian arts, cultures, and societies, on site and online.
- Build substantive and funded collaborations with the Smithsonian, selected museums, universities, and other non-profit partners to broaden our expertise and impact in fostering the understanding of Asian arts, cultures, and societies.

- Build relationships with Asian and Asian American communities, including organizations that represent them, by enhancing our outreach and programming through formal partnerships and informal synergies.
- Advance our centennial planning efforts to ensure that we are prepared to leverage this significant Smithsonian and Museum milestone.
- Advance a fundraising strategy to support Museum priorities.

To monitor our progress on these focused and other daily operations, we will continue to rely on our cross-departmental implementation team chaired by the two deputy directors. This team provides regular oversight of our action plans, monitoring our progress on 24 key performance indicators. Our metrics are presented on a gallery-wide scorecard, updated quarterly, and shared with staff to ensure we remain focused on our priorities and operate in a transparent and nimble manner. These metrics allow us to take advantage of emerging opportunities and revenue fluctuations but also provide the focus we need to ensure that we achieve the four goals of the plan. Goals and priorities are also reinforced through staff and leadership performance plans, and information is regularly shared with senior Smithsonian leaders and the Board of Trustees.

We have a longstanding commitment to education, scholarship and research. In FY 2021, we will complete or expand several important efforts in this area and continue to collaborate on research projects, and seminars and symposia with museum and university partners to ensure that our scholarly publications and data resources are widely available and well known. Specifically:

- In the area of K–12 education, a major focus for FY 2021 is the development of expanded online resources for K–12 educators based on the Galleries’ world-renowned collections, with the goal of making our website the premier online K–12 resource for information on the arts of Asia. These new materials, developed in partnership with educators, will become available on a new website scheduled to launch in June of 2020. In FY 2021, we will improve upon the site and continue to monitor teacher and student engagement. Efforts such as this, supported by a multi-year grant by the Freeman Foundation, are essential for the Smithsonian to reach its goal of one billion engagements.
- We will further impact 21st century audiences through our 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 Korea Foundation, University of Michigan, and the Mellon Foundation.
- We will continue to devote human and financial resources to our internationally renowned conservation and scientific research department. The department is led by a director who is one of the most respected figures in the field. In FY 2021, conservators, curators, and scholarly researchers will

continue to study and publish new research on the collections. The conservation department is also deeply involved in several international collaborations to develop a public-facing scholarly textile database and the definitive reference for bronze-casting.

- With support from the David Berg Foundation, we will expand our research into Nazi-era provenance issues, further strengthening international ties developed in previous years. In FY 2020, we applied for a major grant from the Berg foundation that will support this work and allow us to offer a series of symposia to bring attention to the work.
- As our 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 on site and online. We will continue to cooperate with the Departments of State and Defense, and other agencies and organizations, to save cultural heritage in Iraq, Syria, and other parts of the Middle East.
- We will contribute to the strategic goal of Enhanced Interdisciplinary Research by maintaining our record of hosting research Fellows and scholarly visitors, through online, open-access publications, and by attracting new funding for research.
- We are pursuing external support for a paid internship program. This initiative will allow college students without financial means to spend a semester working with Museum staff.
- We maintain an active digital publishing portfolio with our scholarly journal *Ars Orientals*, continuing to make major contributions to the field of Asian art history. The shift to open access for the publication has proven highly successful. We have increased engagement with our content by 88 percent in page views and 114 percent in users, and we anticipate this trend to continue.
- We will be releasing several new digital collections catalogues in FY 2021, including the final volumes on our Jade collection and the long-anticipated digital Seto and Mino Japanese ceramics catalogue. We will also build upon our partnerships with the National Institute for Japanese Literature to make available annotated and translated versions of works in our Gerhard Pulverer Collection.

In FY 2021, we will implement new reporting lines and structures, paying special attention to programming, visitor services, communication, research, and advancement. We will also increase our commitment to visitor accessibility. Specifically:

- During FY 2021, we will formalize plans for our centennial year celebration in 2023. Our internal planning team will bring forward a series of opportunities,

both national and international, that will bring new attention to the Freer and Sackler and our pivotal role in helping to realize the Smithsonian's mission of making world-class art, science and research available to all.

- With a grant from the Smithsonian's Asian American Pacific Islander Center, we initiated our first demographic perception research study to understand how the Museum is viewed by Asian American communities. With this information, we can effectively plan a series of new programs and events, such as the Lunar and Persian New Year, and develop communications tools that speak directly to the interests of heritage communities.
- We will build upon the success of our recently launched brand roll out to develop strategies for raising visibility. In FY 2020, we will launch the process to develop an integrated digital strategic plan. This will have a profound impact on our FY 2021 plans as we seek to capitalize on our digital-first mindset that puts us at the forefront of the Smithsonian's open-access effort.
- The Galleries will continue the new accessibility initiatives with an innovative installation providing digital and sound interpretation of an iconic object, the Cosmic Buddha stele, for the visually impaired. This installation effectively blends our commitment to increased accessibility and digital innovations.
- We anticipate the launch of our courtyard accessibility project to ensure that all our visitors can experience the beauty of the Freer Gallery.

In FY 2021, we will implement a set of digital solutions which infuse features and functionality into our core activities and address the needs of internal and external users. as well as external users. With a focus on external visitors and users, we seek to deliver a set of off-site experiences through our website and digital and social media that reflect our standing as a national resource for understanding Asian art. This focus will help leverage synergies to higher-capacity websites such as Smarthistory.org and university partner websites, and showcase the depth and breadth of our scholarship and research portfolio.

The FY 2021 exhibition schedule and complementary public programs will offer opportunities for audience engagement with both historical and contemporary topics and provide access to some of the finest works of art from Asia. Drawing on the strategic review of our exhibitions and gallery spaces undertaken in FY 2020, we will enliven our galleries by returning hundreds of square feet of fallow space to new exhibitions. We will continue to develop major exhibition projects and long-term exchanges in collaboration with U.S. museums as well as with institutional partners in China, Japan, Korea, and India. Sharing select exhibitions through multi-venue presentations is an integral part of several exhibition projects under development while we develop touring exhibitions of our permanent holdings.

Highlights of our FY 2021 exhibition program include:

- To mark the millennium of the Persian poet Ferdawsi's death, in the fall of 2020 we will present an exhibition centered on the 14th-century manuscript known as the *Great Mongol Shahnama*. Our Museum has the largest collection of folios from this work. Considered a watershed in the history of Persian painting, the dispersed manuscript is also the subject of a major 2020 publication, which is to be co-published by the Freer and Sackler.
- We will highlight our growing collection of contemporary photography with the exhibition of the works of the acclaimed Iranian photographer Bahman Jalili, who is widely regarded as the father of contemporary photography in Iran. A series of related public programs will allow for a deeper investigation of the artist and his contribution to our understanding of conflict and artistic expression through photographs.
- In collaboration with the 2021 Washington, DC Cherry Blossom Festival, we will present a major exhibition of the Japanese artist Shukei Sesson. This exhibition will display many exciting digital components. In collaboration with the Tokyo University of the Arts, the digital feature offers our visitors a real-time recreation of the Japanese pen-and-ink painting technique unfamiliar to most American museum goers. The accompanying catalogue will bring attention to the scholarship that shaped this exhibition and make a major contribution to the study of this important artist.
- In the fall of 2021, the Freer and the Sackler Galleries will showcase the celebrated and unpublished royal collections of Udaipur, India. This group of extraordinary paintings will also bring attention to the environmental issues impacting our global water systems. The exhibition's scholarly catalogue will include several essays by international scholars and highlight some of the latest research on Indian paintings. After this exhibit closes in the spring of 2022, it will travel to the Cleveland Museum of Art.
- We will continue our highly acclaimed immersive presentations of *Encountering the Buddha: Art and Practice across Asia* and our installation of blue-and-white porcelains in Whistler's famed Peacock Room. This installation offers visitors the opportunity to experience the iconic room as Whistler intended it to be seen in the 1870s.
- We will finalize plans to present a second national treasure of Korean exhibitions in FY 2022, in partnership with the National Museum of Korea. This project is supported by a five-year grant from the Korean Ministry of Culture.
- We will deploy a rolling calendar of thematic reinstallations of our holdings and bring attention to our new acquisitions. This allows us to continually refresh our galleries and generate provocative conversations about the art of Asia and America.

As we continue to build a Museum culture that is creative, collaborative, transparent and resourceful, we will continually assess and enhance staff development, the efficacy of its organizational structure, and oversight of internal controls. Specifically:

- As we plan for FY 2021, we will maintain our fiscal discipline to support our strategic plan and take advantage of opportunities for investments in infrastructure and new partnerships.
- In FY 2020, we will be launching six new searches for leadership positions to include a deputy director for collections and research. These new hires will be the result of a reimagined local recruitment process that is broadly consultative and involves staff, volunteers and trustees. In FY 2021, we will work with our colleagues to ensure their successful transition to the Smithsonian and to provide the mentorship and resources they will need to advance our mission. This infusion of new thinking, talent and enthusiasm will also allow us to assess our operations and assumptions and ensure that we are nimble, collaborative, and well-positioned for the next century.
- We continue to dedicate funds to leadership and supervisory training to equip managers and supervisors with the information, skills, and tools needed to make effective decisions.

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 Freer and Sackler Galleries are highly dependent on nonappropriated income sources to provide the quality of exhibitions, programs, and publications expected by visitors and scholars, both online and on site.

CENTER FOR FOLKLIFE AND CULTURAL HERITAGE

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2019 ENACTED	17	3,184	12	1,510	3	1,123	0	457
FY 2020 ENACTED	17	3,484	10	1,923	4	1,000	3	1,700
FY 2021 REQUEST	17	3,600	10	1,475	4	1,000	3	1,700

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in vital arts and humanities research	1	175	1	182	0	7
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	1	155	1	162	0	7
Understand and Impact 21st Century Audiences						
Exhibitions						
Offer compelling, first-class exhibitions	8	1,724	8	1,778	0	54
Education						
Engage and inspire diverse audiences	1	200	1	207	0	7
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	4	455	4	482	0	27
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	294	0	14
Total	17	3,484	17	3,600	0	116

BACKGROUND AND CONTEXT

The Center for Folklife and Cultural Heritage (CFCH) is a research, collections, education, publications, and public programming unit of the Smithsonian Institution with the mission to “increase cultural understanding, strengthen communities, and reinforce our shared humanity” through promoting cultural heritage and diversity across the United States and around the world. It is the largest of a triumvirate of federal offices (with the Library of Congress’ American Folklife Center and National Endowment for the Arts, or NEA’s, Folk and Traditional Arts program) that supports traditional arts and culture in the United States and abroad. For more than five decades, the CFCH has accomplished this mission through research, documentation, preservation, presentation, education, social enterprise, and publication. It has collaborated with thousands of organizations, foundations, and governments in the United States and worldwide. The Smithsonian Folklife Festival and Smithsonian Folklife Recordings are its most visible products, reaching more than 340 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, 36 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 2021 budget request includes an increase of \$116,000 for necessary pay and other related salary costs for existing staff funded under this line item.

MEANS AND STRATEGY

Research, production capacity, and entrepreneurial resource leveraging are the keys to how the CFCH accomplishes its core mission. Earned revenues cover the costs of 35 percent of its staff, create its public products, and deliver them to a broad national and international public of more than 305 million consumers. Institutional collaboration and major public impact nationally and internationally are also key to fulfilling its mission. Institutional collaborations (with more than 100 partnerships in the past nine 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 11.5 million visitors on site and online), Smithsonian Folkways Recordings (with more than 263 million listeners via recordings, radio programs, downloads, and audio streams), websites and social media (with 8.74 million visits), the Smithsonian Cultural Sustainability Initiative, and other products. The CFCH also periodically applies its event production capacity to put on other major, national cultural events consistent with its mission, such as the National World War II Reunion, the First Americans Festival for the opening of the National Museum of the American Indian, and programs for the Olympic Games and presidential inaugurations. In 2020 and 2021, the CFCH will collaborate with at least seven Smithsonian units, 35 nonprofit organizations, at least two other federal agencies, and four foreign countries to create and deliver programmatic content.

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

Also in 2020 and 2021, the CFCH will further harness the power and reach of the World Wide 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 2021.

Folkways extended its impact in 2019 with the publication of three landmark boxsets (Pete Seeger, Social Power of Music, and New Orleans Jazz Festival). In 2020, Folkways will release the landmark box set on hip-hop and rap, in collaboration with the National Museum of African American History Art and Culture (NMAAHC). In 2021, Smithsonian Folkways Recordings will continue its *African American Legacy* and *Tradiciones/Traditions* series of African American and Latino music, producing at least six albums of new material. In addition to these landmark releases, Folkways will release an additional 15 recordings in FY 2021.

Folkways will also continue to extend its reach to millions more listeners, distributing almost 4,000 albums (60,000 tracks) of audio to teachers, students, scholars, and the general public. Digital distribution will expand further, opening new horizons for the creation and delivery of the Center's educational content via

downloadable audio streams, “podcast” feeds, and multi-media video features. Folkways will also continue to grow its 256 million-plus circulation of digital content from non-Smithsonian websites such as iTunes U, and SoundCloud, which will extend its reach to more than 100 countries. It will continue to expand its collaboration with private partners to deliver the entire Folkways collection to more than 560 libraries throughout the North American continent and beyond.

A third signature program, the Smithsonian Cultural Sustainability Initiative, invigorates the Center’s long-established commitment to community engagement, cultural documentation, and support of cultural vitality. Four ongoing five-year programs respond to the urgency of the need to save endangered languages and cultural expressions and the associated loss of their knowledge. This includes a USAID-funded “Integrated Development Program to Preserve Cultural Heritage and Improve Sustainable Livelihoods in Ethnic Tibetan Communities in China” and “My Armenia,” which is linking cultural heritage preservation with sustainable tourism development in innovative ways. The third is a privately funded research initiative for “Sustaining Minority Languages in Europe” (SMiLE), which is part of the Smithsonian’s larger Recovering Voices Initiative. Finally, in 2018, CFCH initiated a collaboration with the Royal Textile Academy of Bhutan, a national center focused on weaving and other folklife; this project is also funded through a gift. A major philanthropic gift in 2019 allowed the Center to stabilize this program and staff it fully.

Center curators and research staff will continue to publish books, articles, and Web features, and make professional presentations at gatherings of specialists. In 2019, the CFCH set aggressive new publication targets and is on track to repeat the excellent performance from its previous strategic plan. 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 18 record labels, more than a half-century of documentary research, and extraordinary records of grassroots cultural traditions from around the globe, it provides a *sine qua non* folklife resource for both researchers and the public. In recognition of its important holdings, UNESCO inscribed the Moses and Frances Asch Collection in its Memory of the World Register in 2015. The Folklife Archives will tackle four main challenges in 2021 — accessioning the vast collections associated with the acquisition of Arhoolie Records; assessing, cataloguing, preserving, and making available endangered, valuable paper and audiovisual holdings; setting priorities for handling delicate and critical collections materials; and transferring audiovisual collections from their current media to ensure their survival. In 2019, the

CFCH moved its entire collections from its usual repository, which underwent substantial infrastructure improvements. With support from the National Collections Program, all collections were rehoused in state-of-the-art cabinetry, which marks a significant improvement in the physical care of these priceless collections. Central funds from within the Institution will further support the Rinzler Archives' digitization and dissemination efforts.

The CFCH has played a major role in the new One Smithsonian strategy outlined by the Strategic Plan. The Center proposed and then led the implementation of the Smithsonian Year of Music in 2019. Center staff are contributing to the implementation of the American Women's History Initiative and recruited a new curator of American women's music to ensure ongoing engagement on this important topic. The Center simultaneously collaborates with the Asian American Pacific Center, National Museum of African American History and Culture, National Museum of the American Indian, National Museum of Natural History, and the Smithsonian Latino Center by supporting internships and program initiatives, including the Mother Tongue Film Festival. Center staff also share approximately one publication per week with Smithsonian.com. Having reached more than 499 million users in FY 2019 (including impressions from licensing), the Center is supporting the Institution's goal to reach one billion users through a digital first strategy. Similarly, the Center is now leading one interdisciplinary, multi-year, international research project and has submitted a grant proposal to fund a second.

NONAPPROPRIATED RESOURCES — General trust funds support salaries and benefits of approximately one-quarter of the CFCH's personnel, and revenues from Folkways Recordings pay 35 percent of all staff salaries and expenses. Donor/sponsor-designated funds cover costs related to specific projects such as the Smithsonian Folklife Festival, some research efforts, and several other educational programs. By the end of FY 2019, with support from the Smithsonian National Campaign, the CFCH raised more than \$10 million 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 2019 ENACTED	36	5,086	31	4,775	25	6,355	1	217
FY 2020 ENACTED	36	5,086	31	4,950	27	6,900	1	150
FY 2021 REQUEST	36	5,235	31	5,100	29	7,100	1	150

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in vital arts and humanities research	4	350	4	367	0	17
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	1	105	1	109	0	4
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	1	125	1	129	0	4
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	4	390	4	407	0	17
<i>Education</i>						
Engage and inspire diverse audiences	3	260	3	272	0	12
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	7	2,096	7	2,125	0	29
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	11	1,115	11	1,160	0	45
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	4	475	4	492	0	17
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	1	170	1	174	0	4
Total	36	5,086	36	5,235	0	149

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 215,000 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, CHSDM 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 2021. 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 2021 budget request includes \$149,000 for necessary pay and other related salary costs for existing staff funded under this line item.

MEANS AND STRATEGY

In FY 2021, CHSDM 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 exhibitions on the 20th-century graphic design pioneer Edward McKnight Kauffer, an exhibition on the future of health care that will provide immersive spaces for visitors to explore health care scenarios, and *Designing Peace*, which will explore how design can address some of our most vexing issues.

Building on the success of the interactive pen, the Museum will continue to explore enhanced visitor experiences through the Interaction Lab, a new kind of research and development (R&D) space where we are reimagining the museum experience for the 21st-century. Designed to keep pace with emergent technology, we are bringing a holistic, interactive design methodology to CHSDM's visitor experience.

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

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

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

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

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

NONAPPROPRIATED RESOURCES — Nonappropriated resources support 70 percent of the Museum's operating budget. General trust funds are generated from memberships, Museum shop sales, admissions, special events, and unrestricted contributions. General trust funds support salaries and benefits of administrative

personnel, development and business activities, and other program-related costs. The Museum also raises funds from private sources to support research, exhibitions, public programs, and administrative functions. This includes securing contributions for new exhibitions, educational initiatives, and public outreach. Donor/sponsor-designated funds are essential to support exhibitions and educational initiatives. In addition, significant endowment gifts support research, exhibitions, public programs, and administrative functions.

HIRSHHORN MUSEUM AND SCULPTURE GARDEN

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2019 ENACTED	37	4,544	6	3,988	23	7,560	0	110
FY 2020 ENACTED	37	4,544	7	4,223	24	9,000	0	110
FY 2021 REQUEST	41	5,051	7	4,223	24	12,000	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in vital arts and humanities research	5	479	5	497	0	18
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	1	130	1	134	0	4
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	3	530	3	541	0	11
Exhibitions						
Offer compelling, first-class exhibitions	11	1,300	15	1,712	4	412
Education						
Engage and inspire diverse audiences	2	190	2	197	0	7
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	8	1,035	8	1,064	0	29
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	7	880	7	906	0	26
Total	37	4,544	41	5,051	4	507

BACKGROUND AND CONTEXT

The Hirshhorn Museum and Sculpture Garden is a leading voice for contemporary art and culture, providing a national platform for the art and artists of our time. The Museum seeks to share the transformative power of modern and contemporary art with audiences at all levels of awareness and understanding by creating meaningful, personal experiences in which art, artists, audiences, and ideas converge. The Hirshhorn enhances public understanding and appreciation of contemporary art through acquisitions, exhibitions, education and public programs, conservation, and research.

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

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

The Museum's extensive collection is central to its purpose, and, pursuant to the Institution's goal to Preserve Our Natural and Cultural Heritage, the Hirshhorn dedicates a substantial portion of its resources to the preservation of its thousands of artworks. These artworks are the highlight of collection shows, such as *Collection Highlight: Work by Women from the Hirshhorn Collection*, which will open in November of 2020 and will present more than 75 years of work drawn from new acquisitions alongside historical masterworks devoted to the work of women artists. The strength of this collection and the need to preserve it will be highlighted as the Museum moves farther into its fifth decade, with plans for additional showcases of its unique collection. Moreover, the Hirshhorn continues to make these artworks available to museums around the country with a very active loan program, and provides staff expertise on conservation matters to arts organizations worldwide.

The Museum contributes to the strategic goal to Understand and Impact 21st Century Audiences with *ARTLAB+* and many educational programs, including the gallery guide program that serves the Museum's diverse audiences and encourages viewers to learn about various fields of contemporary culture. The educational programs

also make strong efforts to bring non-museum education professionals into the Museum to expand on the Hirshhorn's didactic approaches. *ARTLAB+* is a digital media studio focused on serving teenagers from local, underserved communities, giving them access to professional-quality technology and art, and connecting them to artist mentors who are building a community of young creators. *ARTLAB+* remains a signature achievement of the Museum, and receives critical acclaim from the broader educational community. The program's success has attracted support from internal and external partners, which has enabled *ARTLAB+* to continue to incorporate innovative technologies and provide hands-on learning experiences to students who otherwise would not have access to such opportunities.

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

The FY 2021 budget request includes an increase of \$507,000. The increase includes \$151,000 for necessary pay and other related salary costs for existing staff, and a programmatic increase of 4 FTEs and \$356,000 for exhibition fabrication to ensure the Museum's capacity to deliver compelling, first-class exhibitions.

MEANS AND STRATEGY

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

In FY 2019, the Hirshhorn served almost one million visitors and program attendees through our Museum, sculpture garden and partnerships throughout the Washington, DC arts community. The Hirshhorn continues to build and improve our visitor services support systems, increasing the use of volunteers, gallery guides and part-time visitor attendants. The Hirshhorn has created a visitor services staff dedicated to designing, coordinating, and improving visitors' experiences. Resources support the Strategic Plan by administering products and services that broaden visitor access to public programs and engaging in-gallery experiences.

The Hirshhorn's proposed exhibition schedule for FY 2021 builds upon the mission to expand access to the arts and increase public understanding of, and engagement with, the international scope of modern and contemporary art in all of its spellbinding diversity. FY 2021 will feature exhibitions and other major events highlighting the best of emerging, international contemporary art.

- FY 2021 will open with *Jon Rafman*, presenting the artist's mind-expanding video and installation works, most based on material from the Internet, that highlight the intersection of virtual digital worlds with human dreamscapes. By synthesizing elements of the Internet and virtual reality into his work, Rafman explores the digital angst of a tech-dominated society. As technology becomes more and more ubiquitous, with young adults knowing less and less of life without the Internet, Rafman's video installations are crucial proposals for new modes of socialization, ritual, and myth. In bringing to light the Internet's already realized possibilities, the artist poses questions about the status of human life in our multiple layers of reality.
- In mid-October 2020, the Hirshhorn will also feature John Akomfrah's acclaimed six-channel video work, *Purple*. This film captures ecological features around the world — from the Arctic to the South Pacific — that are at risk of or are disappearing due to changing climates. Wrapped in the gentle arc of the Hirshhorn's curved walls, the installation will allow visitors to experience remote landscapes within a panoramic exploration of vulnerable environments.
- In November of 2020, the Museum will open *Collection Highlight: Work by Women from the Hirshhorn Collection*, a newly curated exhibition devoted entirely to the work of women artists. This exhibition presents more than 75 years of work drawn exclusively from the Hirshhorn collection. Highlighting new acquisitions alongside historical masterworks by artists such as Helen Frankenthaler, Louise Bourgeois, Eva Hesse, Alma Thomas, Betye Saar, and Carolee Schneemann, the exhibition speaks to women's decisive and virtuosic achievements in a full range of media and with a wide array of aesthetic, political, and historical concerns. Impossible to classify according to a single subjectivity or set of virtues, the work on view further explores the complexities and contradictions of approaching the idea of "woman artist" as a category. Set against current and broader conversations regarding gender, power, and recognition in our society, the exhibition celebrates the depth, breadth, radicality, and rigor of art made by women, while calling attention to the ways that gender itself can be understood in relation to the making and presentation of art — both irrelevant and irrevocable.
- In the spring of 2021, the Hirshhorn will present teamLab. Digitally combining elements of art and nature in immersive digital environments, the Japanese art collective teamLab has created compelling and unique installation experiences at museums and art venues around the world. Adapted for the Hirshhorn's curved exhibition space, teamLab's exhibition will consist of the three interactive installations: *Continuous Life in a Beautiful World* (2019); *Sketch Aquarium* (2013); and *Graffiti Nature* (2016). These progressively visitor-activated works will enliven the third-level outer ring galleries, providing an interactive exhibition that will draw both general visitors and focused groups of visitors seeking family experiences with contemporary art.

The Hirshhorn continues to further the strategic goal to Expand Digital Technologies by using the Museum's website to engage with local and remote audiences regarding exhibition offerings, upcoming public programs, and information about collections and artists. Content shared via the website includes audio and video from public programs, interviews with artists and curators, and searchable access to the

Museum's collections. The Hirshhorn's communication procedures will diffuse deep knowledge of contemporary art and culture, whether presented in the Museum or elsewhere, and not merely describe activities and exhibits in superficial terms. The Museum will continue to publish original catalogues to complement exhibitions, along with other books that examine modern art, design, and cultural shifts of the early 21st century.

Based on the overwhelming success of *Hirshhorn Eye!* (*Hi* for short), our revolutionary in-gallery art guide that uses image recognition to scan art and instantly provide access to exclusive artist videos and inside information, staff has increased interaction between visitors and the digital resources of the Museum. *Hi* content is updated regularly, in coordination with our rotating exhibitions. In FY 2021, we will continue to create and deliver content that builds on the in-gallery exhibition learning aids. In FY 2019, we began sharing this innovative technology across the Smithsonian and the nation. By working with the Office of the Chief Information Officer (OCIO), the Hirshhorn will continue to implement the *Hi* technology throughout the museums on the Mall.

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

In concert with educational foundation sponsors, the Hirshhorn will expand the *ARTLAB+* program throughout the Museum to create an environment where teenagers can attend workshops to learn about and explore digital media. The Museum will also sustain its “Gallery Guides” program, which brings advanced art students into the galleries to aid visitors' critical experience with art on display, and which develops the students' own education objectives and teaching skills. In FY 2021, we will continue to pilot programs to capture additional audiences such as: preschool-aged children, through *STORYTIME*, which explores contemporary art through stories and movement; families, through *Maker Mornings*; and underserved audiences through increased accessibility programs offered in Spanish and in American Sign Language (ASL).

Also, in FY 2021, the Hirshhorn will achieve the strategic goal to Preserve Our Natural and Cultural Heritage by continuing collections research in the Museum's state-of-the-art Conservation Lab and collections storage space. The improved space, which was finished in FY 2020, has improved natural light, greatly enhancing collections management and conservation activities. In addition, the Hirshhorn will further develop 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 efforts to photograph and catalogue the permanent collection, thereby bringing more of the collection to the public via extensive search features on the Hirshhorn's 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 Museum, along with Smithsonian Facilities, is planning two important projects: a revitalization of the Sculpture Garden, and repairs to the building envelope. These projects will enable the Hirshhorn campus to support the Museum's mission and its expanded programming and collections, as well as enhance the visitor experience and address critical infrastructure needs. The new vision will create spaces for large-scale contemporary works and performances, as well as more intimate spaces where visitors can enjoy the Museum's modern masterpieces.

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

EXPLANATION OF CHANGE

The FY 2021 budget request includes an increase of \$507,000 for necessary pay (\$151,000) and a programmatic increase (4 FTEs and \$356,000).

Exhibit Support (+\$356,000, +4 FTEs)

This budget request includes an increase of \$356,000 and 4 FTEs for additional art handlers and exhibition fabricators. As the Museum's exhibitions feature more elements involving audiovisual technology and innovative installation techniques, there is a growing need for skilled art handlers, cabinetmakers, and audiovisual professionals. These additional resources will allow the Hirshhorn to more efficiently fabricate and install exhibition cabinetry, mounts, and audiovisual equipment, while also keeping compensation competitive with similar positions in comparable museums and galleries. Additionally, these vital positions will enable the Museum to more effectively manage its resources to meet the long-term need for experienced art handlers, exhibit fabricators, and graphic installers who will support the Hirshhorn's goal to offer compelling, first-class exhibitions to the public.

NONAPPROPRIATED RESOURCES — General trust funds support salaries and benefits of administrative and development personnel, as well as some programs and public relations staff, advancement activities, and exhibition and program-related costs. Donor/sponsor-designated funds are essential to support 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 2019 ENACTED	28	4,654	5	1,165	2	1,210	0	0
FY 2020 ENACTED	31	4,854	6	1,027	8	1,568	0	0
FY 2021 REQUEST	31	5,022	6	1,386	8	2,117	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in vital arts and humanities research	3	578	3	594	0	16
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	4	333	4	355	0	22
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	3	544	3	560	0	16
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	8	1,532	8	1,576	0	44
<i>Education</i>						
Engage and inspire diverse audiences	4	542	4	564	0	22
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	5	678	5	705	0	27
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	3	432	3	448	0	16
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	1	215	1	220	0	5
Total	31	4,854	31	5,022	0	168

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 NMAfA 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 Institution’s goal of creating One Smithsonian and fulfilling the Grand Challenges of Valuing World Cultures, Understanding the American Experience, and Magnifying the Transformative Power of Arts and Design.

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

Substantial selections from the Museum’s large and important permanent collection of Africa’s historical and contemporary arts will remain on view in FY 2021, with ongoing displays on sublevel 1 and our *Currents: Water in African Art* exhibition that features aquatic-themed artworks from the permanent collection. A multi-year exhibition entitled *Heroes: Principles of African Greatness*, which opened in early FY 2020, will remain on view through FY 2021. It also features works from the Museum’s permanent collections and employs the technology to engage visitors with more detailed stories about Africans who exemplify the concepts of greatness explored in the exhibition. The Museum will continue to present *Visionary: Viewpoints on Africa’s Arts*, a permanent exhibition with changing elements, that features more than 300 works from the permanent collection of traditional and contemporary African arts and highlights the Museum’s Walt Disney-Tishman African Art Collection. The *Visionary* exhibition features cross-cutting themes that showcase particular strengths in the Museum’s collection. In addition, the Museum will revise its popular *Looking @ Art* gallery guide to complement the NMAfA’s permanent collection exhibitions and to assist visitors in understanding the forms, materials, messages, and global relevance of Africa’s traditional and contemporary arts.

In FY 2021, the Museum’s entrance pavilion, renovated in FY 2019, will continue to present artworks from the permanent collection. Touch-table technology will continue to deliver an expanded menu of options to orient visitors

to the Museum's collections and exhibitions and engage them in a range of ideas and issues about Africa and Africa's arts.

In 2021, the Museum expects to travel its temporary exhibition *I Am: Women's Voices in the Contemporary*, which opened in late summer of 2019 in the contemporary galleries on sublevel 1. It features selected works from the NMAfA's collection made by important modernist and contemporary women artists from Africa, and it is accompanied by a scholarly publication.

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

In FY 2021, the NMAfA will continue two temporary exhibitions, developed by the Museum in FY 2020. *Nollywood Portraits* features the work of Nigerian-born, New York-based artist Iké Udé, who explores the School of Nollywood films and their personalities. In this exhibition, Udé studies the mutative act of looking at the people who make up an emerging school whose practice is motion-picture performance. Udé's work strays from the tradition of this mode by his intervention in the design and organization of the photographed image. The work largely consists of photographic tableaux in which Udé performs in the role of a movie director by making the actors and actresses sitters. This creates a mimesis of the process of producing a motion picture itself — the very subject of the compilation.

FY 2021 will also see the continuation of the FY 2020 exhibition *From the Deep: In the Wake of Drexciya with Ayana V. Jackson*. Inspired by the Detroit-based Afrofuturist music duo of the same name, photographer Ayana Jackson revisits the history of the trans-Atlantic slave trade in this first solo Museum exhibition for the artist. "Drexciya" is the name given to a legendary underwater kingdom populated by the children of pregnant women who were thrown or jumped from the ships of their enslavers. According to legend, because the children were able to breathe in the amniotic fluid of the womb, they were able to survive in the ocean waters. Taking Drexciya as a point of departure, Jackson creates a new series of photographs in which she portrays African water spirits as manifestations of these powerful beings. The exhibition will also feature the artist's first video and a selection of the full costumes realized in collaboration with designers in Senegal and Angola, as well as individual elements displayed in vitrines, such as the treasured remains of historic shipwrecks. While addressing the horrors of a brutal history, *From the Deep* is, ultimately, empowering in its approach. The exhibition affirms the Museum's commitment to

working with outstanding artists in the production and presentation of cutting-edge new work, consistently highlighting the contributions of women artists, and activating Museum spaces as vehicles to discuss difficult and defining issues of history, race, representation, and the future.

The FY 2021 budget request includes an increase of \$168,000 for necessary pay and other related salary costs for existing staff funded under this line item.

MEANS AND STRATEGY

The NMAfA will achieve the Smithsonian strategic goals to be One Smithsonian and to catalyze new conversations and address complex challenges by directing resources to activities that will result in consistently high-quality programs, larger, more diverse audiences, and global engagement through improved Web and digital outreach. 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. Working closely with the Office of the Chief Information Officer (OCIO), the Museum will embark on a large-scale mass-digitization project to add a substantial number of new object records to the online collection database. This work will benefit from pilot digitization projects undertaken in FY 2020. 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 2021 to better engage audiences 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 diverse audiences through a robust schedule of exhibitions and educational 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. 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.

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. Museum educators will develop a range of digital K–12 curriculum materials designed to engage students and teachers in the arts of Africa.

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

To achieve the One Smithsonian and its "digital first" strategies, 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 support of the Smithsonian's goal of driving large, visionary, interdisciplinary research and scholarly projects, the Museum will continue to collaborate with Smithsonian colleagues on multi-year initiatives. Such initiatives include an AfricAsia project, and programs and initiatives associated with the Lilly Foundation's support for religious expression in the United States and worldwide. The Museum also seeks to enhance its networking with colleagues on the African continent in order to create partnerships and engage current debates, which will help develop sustainable strategies in support of collaboration and dialogue regarding colonial-era collections.

In FY 2021, the Museum will also devote staff resources to planning exhibitions in FY 2022 and beyond, including a possible traveling exhibition featuring major artworks from the NMAfA's permanent collection. Other possible Museum-developed exhibitions and accompanying scholarly publications include *Africa Pops*, an original exhibition built from the collections of the NMAfA with major targeted public and private loans, which seeks to look at African artists' use of irony, kitsch, and connections to comment on consumerism and international capitalism; *Visionary Leadership* on Lozi arts and the making of a nation; *African Minimalism*; the *Mechanics of Art*; and the *Creativity of Work*. The Museum also anticipates developing a small contemporary art exhibition that will

be guest-curated by a contemporary African artist and draw on the NMAfA's collection of carved ivory tusks, 3D digital scans of selected tusks, and images drawn from the Eliot Elisofon Photographic Archives.

Staff will enhance displays of permanent collection artworks and pay particular attention to audience engagement strategies. The Museum's emphasis on selected works from the NMAfA's permanent collection, displayed in galleries on all four levels of the Museum, is cost-effective and designed to attract general audiences, collectors, and scholars, as well as local school groups that rely on consistently available works of art for their themed tours and curriculum projects. In addition, the Museum will continue to develop rotating exhibitions from the permanent collection for the small *Point of View Gallery* and adjacent galleries on sublevel 1. In FY 2021, the Museum will also devote staff resources toward refining and expanding the menu of options for its touch-tables in the renovated NMAfA entry pavilion. The touch-tables are designed to orient visitors to Museum collections and exhibitions, and to engage them in a range of ideas and issues about Africa and Africa's arts.

To address the Smithsonian's strategic goal to reach one billion people a year with a digital-first strategy, the NMAfA will expand its use of digital technologies by focusing resources in several areas: information technology (IT) operations; staff performance and accountability; strategic audience engagement via social media; the development of curriculum materials to engage K–12 and university students in the arts of Africa; and effective relations with the media. The Museum's IT plan has integrated information technology functions for administration, collections management, exhibitions, and public access. The IT plan will continue to be reviewed on an annual basis, with updates made as needed. Museum administrators will continue to use the updated and revised vision document and gain insight via 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 2019 ENACTED	19	2,405	2	280	0	87	0	36
FY 2020 ENACTED	19	2,490	3	556	0	180	0	45
FY 2021 REQUEST	20	2,723	3	556	0	0	0	85

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in impactful scientific research and discovery	2	232	2	232	0	0
Engage in vital arts and humanities research	1	152	1	152	0	0
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	3	250	3	250	0	0
Exhibitions						
Offer compelling, first-class exhibitions	2	290	3	523	1	233
Education						
Engage and inspire diverse audiences	4	475	4	475	0	0
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	3	395	3	395	0	0
Facilities and Safety						
Improve Smithsonian facilities operations and provide a safe and healthy environment	1	119	1	119	0	0
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	3	577	3	577	0	0
Total	19	2,490	20	2,723	1	233

BACKGROUND AND CONTEXT

Since its founding in 1967, the Anacostia Community Museum (ACM) has been a means for people in urban neighborhoods to voice their concerns about city life, examine their role in society, and encourage local cultural expression. As the Smithsonian's community museum, ACM is uniquely positioned as a trusted convener and a bridge between organizations, academia, government, businesses, and community members in order to give voice to untold perspectives and uncover new solutions. Because of this work, the Museum has become a model for community representation, discussion, and artistry. From its strong foundation of community-based exhibitions, collections, and programs, ACM is now poised to undertake its next great challenge — to tackle complex and systemic issues that individuals cannot address alone, and catalyze collective action toward change.

The FY 2021 budget request includes an increase of \$233,000. The increase includes \$83,000 for necessary pay and other related salary costs for existing staff funded under this line item, and a programmatic increase of 1 FTE and \$150,000 for exhibit support.

MEANS AND STRATEGY

In 2019, the Museum implemented a revised strategic plan that focused on engaging with urban communities to activate their collective power for a more equitable future. To do this, the Museum realigned its goals to: 1) connect with our audiences; 2) deepen relationships with external and internal partners; 3) document and present community stories with social impact; and 4) strengthen our organization. In activating these goals, the Museum is positioned to achieve the priorities outlined in the Institution's Strategic Plan: engaging and understanding 21st-century audiences; catalyzing conversations; collaborating with the Washington, DC public school system; and employing a digital-first strategy.

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

ACM leverages mutually beneficial partnerships and networks that strategically expand the Museum's engagement, both locally and nationally. These partnerships include community organizations, residents, local governmental groups and others as well as Smithsonian entities. Instead of following traditional museum methods, ACM pursues a community-driven model through collaboration and co-creation, exploring

social issues that impact everyday lives. Additionally, Museum efforts focus on meeting people within the neighborhoods where they live, work and go to school, through increasing access of online content and neighborhood-based programming.

Enhanced Interdisciplinary Research

In FY 2021, ACM will enhance its interdisciplinary research with three projects: Urban Waterways; the Women's Environmental Leadership Initiative; and DC Eats: Food History, Culture, and Justice.

Urban Waterways

For the past 10 years, the Smithsonian's ACM has led the Urban Waterways Project, a collaborative research and educational initiative. The project was formed within the larger context of debates and discussions surrounding the restoration and development of the Anacostia River, and seeks to explore the many ways urban residents engage with and advocate for the health of their waterways and communities. The Urban Waterways current network includes Pittsburgh, Baltimore, Spartanburg, Biloxi, Gulfport, Los Angeles, Honolulu, and London, focusing on frontline communities most affected by development and environmental impacts. The Museum is developing an exhibition exploring the contemporary issues of urban waterways and the impact of civic engagement.

Women's Environmental Leadership Initiative

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

DC Eats: Food History, Culture, and Justice

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

Understand and Impact 21st Century Audiences

To more clearly serve the Museum's constituencies, a public-facing survey and audience analysis is being undertaken to better understand our current as well as

potential audiences' interests, backgrounds and perspectives. This information will be used to inform the development of Museum initiatives and public programs.

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 aligned with the Museum's strategic planning. 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 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.

Pop-up Programming and Exhibitions

"Pop-up" exhibitions and programs around the Washington, DC metropolitan area give the ACM the opportunity to engage with audiences on real-time topics and create immersive experiences. As the ACM moves to continue aligning operations with its community-driven, grassroots model and strategic plan, creating physical space outside of the Museum's Anacostia location is very important. Today, pop-up exhibitions are in place at four Washington, DC public libraries, with plans for other locations such as food banks and schools. Pop-up programming conducted within community locations 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 more flexible and relevant.

Exhibitions

A Right to the City — After more than 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 Community Garden Program is a collaboration with the local non-profit Martha's Table. The program takes community participants through a series of workshops that span planting to harvest, with a focus on healthy eating and historical practice.

Teen Initiative — ACM's teen initiative is geared toward encouraging civic engagement, providing access and educational opportunities, and promoting creativity among young people. The pilot project, *Gen Z*, presented immersive experiences designed to help teenagers become empowered and active participants in our democracy. The project gave students the opportunity to explore their communities from an asset-based perspective, research the issues, and ultimately develop an "action plan" via a public discussion forum and a public exhibition.

DC Public School Engagement — ACM is expanding its partnerships and work with Washington, DC public schools and other educational institutions to engage middle/high school students with ACM exhibitions and collections content. This project will develop specific engagement modalities for students' audiences, including on site, off site and online. This includes designing programs and engaging in Museum-based experiences for both on-site and classroom experiences.

Preserve Our Natural and Cultural Heritage

Collections

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

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

Enable Cost-Effective and Responsive Administration

With ACM's new leadership in place and the appointment of Melanie Adams as director in June of 2019, a focus is now on engaging with civic leadership and key stakeholders, properly aligning goals and priorities with Museum operations and activities, and staffing alignment, ownership and training.

In 2021, ACM will launch a branding and communication campaign to articulate the Museum's identity and focus, informing current as well as new audiences about programming activities. This effort will be essential in building participation and financial support for future activities. This plan is multi-media and multi-platform in nature.

EXPLANATION OF CHANGE

The FY 2021 budget request includes an increase of \$233,000. The increase includes \$83,000 for necessary pay and other related salary costs for existing staff funded under this line item, and a programmatic increase of 1 FTE and \$150,000 for exhibit support.

Exhibit Support (+ \$150,000, +1 FTE)

This request supports a new, high-quality exhibition program designed to activate citizen engagement on critical civic issues, which includes a program of off-site exhibitions within non-traditional community locations.

Today, communities are coming together to grapple with social, economic, and environmental challenges. This program of off-site exhibitions within non-traditional community locations will serve to explore issues, foster dialogue, build common ground, and develop community-based solutions.

To fully implement this program, this request will support a curator of community engagement who will be responsible for implementing public co-curation of exhibition projects and interpretative programs that explore important issues. This process will fully implement ACM's approach to sharing authority with and respecting the expertise of our community collaborators. Specifically, it will enable community members to explore challenging issues with their neighbors through an interpretive process, and present their findings within their communities.

NONAPPROPRIATED RESOURCES — The ACM's financial strength is closely tied to its strategic revitalization. In FY 2021, advancement staff will leverage the Museum's new leadership, direction and model to excite current donors while attracting new ones through the development of a comprehensive fundraising plan. The ACM also sees the activation and communication campaign as a key component to fund raising, as enhanced and widespread awareness will lead to better connections with community partners and local entities for giving and resource sharing.

ARCHIVES OF AMERICAN ART

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2019 ENACTED	17	1,933	3	982	19	2,279	0	0
FY 2020 ENACTED	17	1,933	1	721	18	2,639	0	0
FY 2021 REQUEST	17	2,011	3	849	18	2,452	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	3	342	3	326	0	-16
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	1	115	1	115	0	0
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	1	88	1	97	0	9
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	10	1,006	10	1,086	0	80
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	2	382	2	387	0	5
Total	17	1,933	17	2,011	0	78

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 30 million unique letters, diaries, photographs, financial records, sketchbooks, scrapbooks, and the like, AAA shares and exemplifies the Smithsonian's mission for "the increase and diffusion of knowledge."

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

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

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

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

This FY 2021 budget request includes \$78,000 for necessary pay and other related salary costs for existing staff funded under this line item.

MEANS AND STRATEGY

AAA will achieve the Institution's goal to Understand and Impact 21st Century Audiences by continuing to direct resources to optimize its presence in the DWRC and specifically by presenting compelling exhibitions in its Lawrence A. Fleischman Gallery. The exhibition *What Is Feminist Art?*, which opened in November of 2019, will be on view through the first quarter of FY 2021. This exhibition complements the National Portrait Gallery and Smithsonian American Art Museum's exhibitions focusing on women's history and speaks to the goal of creating One Smithsonian with collaborative programming.

Also in FY 2021, the Archives will conduct an external review of its exhibition program and develop a five-year plan for exhibitions, with the goal of broadening our audience and creating meaningful external and Smithsonian collaborations. 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 2021, the Archives will continue to improve its website's collections search and browser interface, based on results of usability studies, by incorporating emerging trends and technologies. 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; and online exhibitions.

Also, in FY 2021, AAA will continue to develop the Terra Foundation Center for Digital Collections with ongoing support from the Terra Foundation for American Art and other funding streams in the private sector. This effort, in combination with digitization completed for reference requests, exhibitions, loans, and special projects, will add an estimated 150,000 digital image files and continue to bring increased public Web access to AAA collections. In addition, AAA will continue developing its internal digitization and Collections Information System (CIS) application to ensure proper collections documentation and support increasingly complex workflows, as well as to provide proper logging and accessioning of materials in born-digital formats. These efforts will enable AAA to track the life cycle of all collections and oral histories from pre-acquisition to storage and access. AAA will work with the staff in the Office of the Chief Information Officer to leverage its investment in the description, digitization and management of its collections by participating in ArchivesSpace, SOVA (Smithsonian Online Virtual Archives), 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 addition, in FY 2021, the Archives' goal will be to process new collection acquisitions and at least 10 percent of AAA's backlog, or about 1,000 linear feet of archival collections, resulting in new, fully searchable finding aids on AAA's website. Finding aids will provide online access to many 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. System workflows will continue to integrate accelerated processing and preservation strategies to diminish the current backlog and prevent a new backlog.

Furthermore, in FY 2021, the Archives will continue focused efforts to develop holistic strategies, workflows, and internal policies and guidelines which effectively address collecting, preserving, describing, and making available collections materials created in born-digital formats.

AAA will continue to strengthen its collections stewardship through its ongoing, comprehensive collections assessment surveys for manuscript collections and at-risk audiovisual and born-digital holdings. Reports generated from this data provide valuable information about AAA's backlog and holdings, so the Archives' staff can make informed decisions about the best way to allocate

limited resources. AAA will continue to take a leadership role in working with the larger Smithsonian archival community to initiate and implement Institution-wide comprehensive collections assessment strategies and systems.

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

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

NONAPPROPRIATED RESOURCES — General trust funds support AAA’s advancement office, including salaries and benefits. Donor-designated funds support specific programs and projects, including exhibitions, internships, production of oral history interviews, collections and media processing, and publication of the *Archives of American Art Journal*. In FY 2021, the Archives will continue to work closely with its advisory board to position this publication as the leading scholarly journal in the field of American art history. During the past five years, AAA has expanded and diversified its board, increased the number of outstanding submissions, raised the visibility of the journal, strengthened the Archives’ relationship with the University of Chicago Press, and established more cost-effective, multi-year contracts for design and printing.

In FY 2021, the Archives will continue to develop strategies for sustaining its digitization program by building an endowment to support essential staff and implementing improved rapid-capture technologies and techniques. Funding from the Terra Foundation for American Art, the Roy Lichtenstein Foundation, and other donors supports AAA’s digitization program. AAA will continue to raise money for digitization, oral history projects, collections management, and general operating expenses.

NATIONAL MUSEUM OF AFRICAN AMERICAN HISTORY AND CULTURE

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2019 ENACTED	152	32,617	3	1,858	40	13,328	0	25
FY 2020 ENACTED	152	33,117	6	3,781	55	17,644	0	0
FY 2021 REQUEST	152	34,023	6	3,970	58	18,526	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in vital arts and humanities research	24	4,486	24	4,629	0	143
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	13	1,717	13	1,794	0	77
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	13	3,302	13	3,380	0	78
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	18	4,401	18	4,509	0	108
<i>Education</i>						
Engage and inspire diverse audiences	24	5,660	24	5,802	0	142
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	18	3,614	18	3,721	0	107
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	6	1,568	6	1,604	0	36
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	29	5,078	29	5,251	0	173
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	7	3,291	7	3,333	0	42
Total	152	33,117	152	34,023	0	906

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 African Americans. In 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. The Museum seeks to help all Americans and others around the world to understand 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 significant issues of the 21st century. The Museum also celebrates African American creativity and cultural expressions through art, dance, theater and literature.

The Museum opened to unprecedentedly large crowds in 2016. The building, exhibitions, information technology (IT), and Sweet Home Cafe have all been award-winning entities, creating even more excitement, and the shops continue to enjoy large crowds. FY 2021 will mark the continuation and expansion of major initiatives which fulfill the mission of looking at American history through the lens of African American history and culture: the building of a national collection; continued development of IT and digitization programs; and the development and continued implementation of a robust research and education programming initiative.

The FY 2021 budget request includes \$906,000 for necessary pay and other related salary costs for existing staff funded under this line item.

MEANS AND STRATEGY

In FY 2021, the Museum’s top priority will be to engage in long-term planning for the enhancement of its scholarly research and education programs. This includes 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.

In FY 2021, the IT office will continue to work closely with the NMAAHC education and curatorial affairs department to broaden the Museum’s reach and impact by leveraging technology and platforms to enhance education programs, promote engagement with visitors before, during and after a visit, and provide meaningful interaction with accessibility features to engage a global audience.

The Museum will expand its interactive, online, and mobile offerings to include innovative and engaging content that further connects visitors to collection objects and topics of interest. The Searchable Museum is a multi-year project that aims to make all of the Museum's content — including collections, scholarly efforts, and interpretive content for all exhibitions — searchable through digital channels. In FY 2021, the Museum will launch The Searchable Museum Prototype that will match the rich, interpretive experience of the Museum's *Slavery and Freedom* exhibition and ensure a broad national and global reach for new audiences.

Also in FY 2021, 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. Museum staff 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.

To achieve the goal of engaging in vital arts and humanities research, the NMAAHC will continue to advance the work of the Center for the Study of Global Slavery. The Center's Slave Wrecks Project network will continue research, preservation, capacity building, and community engagement efforts in South Africa, Senegal, Mozambique, St. Croix, Cuba and North America — with special emphasis on the recent *Clotilda* slave ship discovery in Alabama. 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. In addition, the NMAAHC is part of an academic consortium whose goal is the preservation, documentation, and dissemination of the Johnson Publishing Company archive, which was acquired in 2019 and includes more than four million prints and negatives from *Ebony* and *Jet* magazines — making it the most significant collection of photographs cataloguing African American life in the 20th century. The Museum will begin work on making the archive accessible, in order to ensure the broadest access for the general public and use by scholars, researchers, journalists, and others. The archive offers a remarkable insight into everyday life in Black America — including up-close and personal pictures of artists, celebrities and leaders — and also historic images that capture moments of grief and horror, such as Coretta Scott King at her husband's funeral.

To achieve the goal of Expanding Digital Technologies, the Museum's Web and emerging media team will continue to collaborate with the 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 to reach one billion visitors a year across all platforms. The Museum's website and mobile applications will continue to focus on enhancing the visitor experience and increasing the Museum's reach and impact through the digitization of objects from the collections and exhibitions, making the Museum more accessible to a more diverse, global audience. New "digital-only" experiences, building on The Searchable Museum, will also be developed in collaboration with other Smithsonian units, which will advance other Institution-wide goals of "being One Smithsonian" and "catalyzing new conversations that address complex challenges."

Also, the Museum'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 conversations and stimulate innovative interdisciplinary research. The Robert Frederick Smith Fund for the Digitization and Curation of African American History will enter its fifth year of public programming, collection digitizing, student professionalization, and visitor engagement through the Explore Your Family History Center (EYFHC). The Community Curation Program invites individuals, families, civic organizations, and community groups to share their stories of African American history and culture through the Community Curation, Web-based platform developed with 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 Museum's cloud-computing environment, allowing for a more scalable, cost-effective infrastructure solution for digital storage and delivery. The result is that the NMAAHC will offer curated and user-generated selections of collections via digital portals, on the Museum website, and through online partnerships, such as with Google Arts and Culture.

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

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 searchable, full-text transcriptions of the records and link them to the existing genealogical index. This effort will include partnering with organizations such as the University of Maryland Institute for Technology and the Humanities, the University of Delaware's interdisciplinary Colored Conventions Project, and other partners, to conduct Transcribe-a-Thons, where volunteers are brought together *en masse* to transcribe historical material.

To achieve the strategic goal of Understanding and Impacting 21st Century Audiences, the Office of Strategic Partnerships (OSP) will continue to deliver far-reaching and transformative support for under-resourced African American and African Diaspora history and culture organizations on a regional, national and international level. The OSP connects and builds awareness about the work of its participating institutions and provides access to training and resources that support and advance leaders and field-wide best practices. In FY 2021, the OSP will continue to address 21st-century needs, challenges and collective issues facing historically black colleges and universities (HBCUs) and their affiliated cultural institutions and resources. The initiative will strengthen the long-term institutional sustainability of these vital cultural organizations.

The NMAAHC continues to offer compelling, first-class exhibitions and to engage and inspire diverse audiences. In FY 2020, the Museum opened a temporary exhibition entitled *Now Showing: Posters from African American Movies*, exploring the history and visual culture of film posters featured in the Earl W. and Amanda Stafford Center for

African American Media Arts (CAAMA). Another temporary exhibition, *We Return Fighting: The African American Experience in World War I*, premiered in the Museum's Special Exhibitions Gallery. This exhibition commemorated the 100th anniversary of African American soldiers returning from France, and examined the experiences of African Americans who fought in combat for freedom and democracy on the home front, as well as the social, political, and cultural impact of World War I on African American history and culture.

In the spring of 2021, the NMAAHC will open the temporary exhibition *Reconstruction: Remaking America without Slavery*. This exhibition will explore how African Americans, in seeking to define themselves as free and equal citizens after the end of slavery, reshaped the nation in profound and lasting ways. The legacies of Reconstruction — its promises, successes, and failures — shed light on issues of race, citizenship, and social justice that continue to reverberate in American society. In addition to the exhibition, the Museum is planning related public programming and educational initiatives, as well as a potential publication and a traveling component of the exhibit.

In addition, the Museum will continue its intensive and comprehensive rotation program to replace loans and at-risk objects within the Inaugural exhibitions. The Museum replaces 200–300 objects per year on a twice-yearly cycle.

The NMAAHC will achieve the goal of engaging and inspiring diverse audiences by presenting 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. Programs will be presented within the Museum, and Web streaming and social media will enable audiences to participate across the globe. The Museum's Office of Education will continue ongoing educational initiatives for all audiences, locally and nationwide, by incorporating digitally based collections and exhibitions, curriculum development for classrooms, and educational programming in exhibitions and the Family Learning Center. The office will also operate the "*Save Our African American Treasures*" program and fully implement revised and tested visitor services operations.

To further the goal of disseminating information to the public, the NMAAHC will continue to educate the public about African American history and culture through media, marketing, and social media channels. Media cultivation and outreach, marketing, communications, and social media are avenues the Museum will continue developing to build and maintain a positive brand.

To achieve the strategic goal of Preserving Our Natural and Cultural Heritage, the Office of Curatorial Affairs will continue to identify, acquire, and process collections, and develop and refine its permanent collections. The Museum has collected more than 38,000 objects, and in FY 2021 will employ numerous collection management policies to safely handle, display, and store collections. In FY 2021, the Museum will continue to prepare for accreditation from the American Alliance of Museums.

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

The NMAAHC will achieve the goals of improving the stewardship of the national collections, and also improving Smithsonian facilities, by continuing to adapt to the Museum’s infrastructure and to 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 which directly impact facility planning, business, safety, and security programs. In addition, the safety program will continue to develop emergency operations, emergency communications, disaster management, and consolidation plans to include Museum staff in other facilities.

To meet the goal of improving the Institution’s information technology systems and infrastructure, the NMAAHC’s Web and emerging media team 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 which allow sharing of content through the NMAAHC’s website, interactive exhibitions, mobile tours, and other digital channels.

The NMAAHC will achieve the strategic goal of Enabling Cost-Effective and Responsive Administration by continuing to develop its organizational structure and make organizational and staffing revisions to accomplish program goals.

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; digitization and educational initiatives; publications and special events for exhibition openings; costs related to specific programs and projects, including educational programs, advertising, production of fundraising proposals, and member- and donor-related special events; and outreach activities.

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

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2019 ENACTED	164	25,373	29	4,023	54	12,738	1	66
FY 2020 ENACTED	165	25,478	29	4,100	55	13,500	1	100
FY 2021 REQUEST	167	26,899	30	4,250	55	15,000	1	200

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in vital arts and humanities research	22	3,450	22	3,590	0	140
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	12	1,905	12	1,981	0	76
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	13	2,430	13	2,513	0	83
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	46	6,750	46	7,042	0	292
<i>Education</i>						
Engage and inspire diverse audiences	6	930	6	968	0	38
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	45	6,848	47	7,507	2	659
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	3	590	3	609	0	19
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	14	1,735	14	1,824	0	89
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	4	840	4	865	0	25
Total	165	25,478	167	26,899	2	1,421

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. Our vision is to make the NMAH the most accessible, inclusive, relevant and sustainable history museum in the nation.

Approximately three million people visit the Museum every year, in addition to more than 8.5 million people who interact with 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 constructive 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 revitalized floor opened in 2015 and focused on American enterprise, innovation and invention. The second floor opened in 2017 and tells two essential American stories — the origins of the American people and the evolution of their democracy. In 2018, the Museum launched the reopening of the third floor of the West Wing with the opening of several new installations to introduce visitors to our American entertainment history exhibitions. The first phase involved the return of Dorothy's ruby slippers from the *Wizard of OZ* to display, opening introductory exhibitions of *America's Listening* and the installation of the iconic stained-glass image of *Nipper, His Master's Voice*, along with a rotating display of musical classical and jazz instruments from the Museum's collection, including rare Stradivarius violins in customized showcases in the *Hall of Music*.

The Museum will continue fund raising for the third-floor West Wing exhibitions and programs, which will captivate visitors with compelling stories, invaluable objects, state-of-the-art media, public spaces, and new exhibitions to make American history vital, fascinating, and central to understanding and embracing the American Experience. In the past nine years, the Museum has raised more than \$148 million for the West Wing exhibits, programs, and endowed curatorial positions to leverage the federal investment in the building's renovation.

The FY 2021 budget request includes an increase of \$1,421,000. The increase includes \$1,060,000 for necessary pay and other related salary costs for existing staff funded under this line item, and a programmatic increase of 2 FTEs and \$361,000 for collections managers essential for our stewardship of the nation's history collection.

MEANS AND STRATEGY

The NMAH supports the Smithsonian’s strategic goal to catalyze new conversations and address complex challenges. Through its research, scholarship, educational programs, exhibitions, and collaborations, 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.

In FY 2019, the Museum began developing its new strategic plan (2020–2027), which will prepare the NMAH for the 250th anniversary of the signing of the Declaration of Independence in 2026. Our strategic planning process is ambitious, transparent, and designed to include key audiences and stakeholders in decisions that will shape the Museum’s next seven years. The plan is organized around our new vision to be the “most accessible, inclusive, relevant, and sustainable history museum in the nation.”

The strategic planning work began in the summer of 2019 with the “Of/By/For All” boot camps, where more than 100 staff from across the Museum participated in two days of audience development workshops organized by audience engagement expert Nina Simon. From that work, the Museum identified several key audiences and further explored an audience-first methodology that will be incorporated into the final plan. During the fall, the Museum put together 10 staff-led “Deep Dive” teams to explore core areas of focus and opportunity for the Museum.

Additionally, the Museum hosted focus groups with key constituencies (the NMAH Docent Council, NMAH Board, and the Smithsonian National Board), and launched two surveys: 1) An internal stakeholder survey (involving staff, volunteers, board, history and Museum leaders), and 2) a bilingual (English/Spanish) national public survey advertised in *The Washington Post* and pushed through the Museum’s partner constituencies. The results of the Museum’s information gathering will feed directly into our strategic plan.

Once the strategic plan is finalized, NMAH senior leadership will develop a comprehensive tactical plan to map out how the Museum will achieve the plan’s high-priority goals and strategies, including tactics tied to clear timelines, deadlines, designated points of contact, budgets and funding needs, and metrics. The Museum will use both the strategic plan and related tactical plans as living documents to measure success and share results with staff, stakeholders and the public.

The new plan, to be completed in late spring of 2020, will update goals in the NMAH 2013–2018 strategic plan. Until then, the Museum continues to operate under the completed strategic plan, which established a vision and strategic direction, and set 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 programs, which examine significant eras and events from American history in the context of social, cultural, economic, political, scientific, and technological themes. The Museum experiments with innovative ways to think about and present American history as an encompassing, multi-faceted story, drawing on many strands, and illuminating many people, ideas, and experiences.

In 2020, the NMAH will open several exhibitions that explore the diversity and complexity of American history and the American experience.

Two exhibitions, *Creating Icons* and *Girlhood (It's Complicated)* have been developed as part of the expansive Smithsonian's American Women's History Initiative to coincide with the 100th anniversary of the passage of the 19th Amendment to the Constitution that granted women's suffrage. *Creating Icons: How We Remember Women's Suffrage* will use the Museum's unique collections to look at the women who fought for suffrage and explore how the memory of the suffragists and the quest for diversity in membership, leadership, and goals has affected modern women's activism. *Girlhood (It's Complicated)* commemorates the Centennial of Women's Suffrage by listening to girls' voices. The exhibition will tackle the long and complicated history of girls and the making of girlhood in the United States, from the early republic of the 1790s to the present. The exhibition mines the Museum's rich collections and covers key topics such as education, wellness, work, fashion and, first and foremost, girls' involvement in American political and social movements. The exhibition was developed with the Smithsonian Institution Traveling Exhibition Service (SITES) and will travel around the country, beginning in 2023.

Other exhibitions opening in 2020 include:

- *¡Pleibol! In the Barrios and the Big Leagues* takes audiences on a journey into the heart of American baseball to understand how generations of Latinas/os have helped make the game what it is today. Their inspirational stories gesture toward larger themes in American history that connect us all, on and off the baseball diamond. The SITES version of the exhibition will begin its national tour concurrently and will travel to at least 15 venues through 2025.
- *Patuxent and Plymouth* will commemorate the legacies of the encounter between colonial English Separatists ("Pilgrims") and indigenous Wampanoag people in the year 1620. Built on conversations with Wampanoag- and *Mayflower*-descendant communities, it explores historical myths and realities in the experience of both communities from the 17th century to today. It features a 17th-century chest that belonged to a *Mayflower* passenger, and artifacts from recent public "Day of Mourning" events organized by Native communities, ultimately making the point that the story of the Pilgrims' arrival has been remade several times and can be

remade again to reflect new evidence and promote understanding between different cultures.

In 2021, the Museum plans to open a major permanent exhibition, *Entertaining America*, and a large temporary exhibition space that will take innovative approaches to explore the ways in which American identity is shaped and shared through arts, sports and entertainment. *Entertaining America* is an approximately 7,000-square-foot exhibition that will remain open for 20 years in the West Wing of the Museum's third floor. The exhibition will rotate objects from the Museum's vast collections which chronicle the country's robust history of sports, music, film, television, and theater. The exhibition will explore how entertainment has generated important national conversations about society, politics, and what it means to be American.

The Museum also plans to open *In Sickness and In Health* in 2021, which will launch the first phase of experimenting with new approaches to topics in medicine, science, and technology. This will be the first of several exhibitions on the second floor of the East Wing to highlight collections and research into topics not currently covered in depth in the Museum, and will inform the Museum's thinking about how to completely transform the East Wing as part of the fourth phase of the Public Space Renewal Project (PSRP). In developing these exhibitions, staff will consider how the East Wing renovation can best showcase the Museum's extensive and unparalleled collection of national treasures; feature collections not previously shown or reinterpret them in new ways; and explore how exhibitions can address the Museum's mission, complement other exhibitions and programs, contribute to new scholarship, and foster the highest quality visitor experience. NMAH staff anticipate that all these gallery spaces will feature increased use of technology to support new and innovative ways for visitors to experience and interact with the Museum's exhibitions and other content. The East Wing renovation will also return converted public spaces to their original use as exhibition galleries instead of using them for storage and other purposes.

In the fall of 2021, the Smithsonian Latino Center will open the *Molina Family Latino Gallery* at the Museum. This 4,500-square-foot space will center the U.S. Latino experience within America's historical narrative via a series of changing exhibits, the latest in digital technology, and through robust educational and cultural programs for multi-generational audiences. The *Molina Gallery* will be the first physical space at the Smithsonian dedicated to highlighting the contributions of the Latino community in nation-building and shaping national culture.

In addition to exhibitions, the NMAH contributes to the discussion of the American Experience through its ongoing scholarship and research. In FY 2020, highlights of scholarly publications will include:

- Bemis, Bethanee. "Mirror, Mirror for Us All: Disney Theme Parks and the Collective Memory of the American National Narrative." *The Public Historian*, vol. 42, no. 1., February 2020.
- Blazich, Jr., Frank A. "*An Honorable Place in American Air Power*" *Civil Air Patrol Coastal Patrol Operations, 1942–1943*. Maxwell AFB, Alabama: Air University Press, 2020.

- Gonzalves, Theodore S. and Allan S. Manalo, eds., *Gossip, Sex, and the End of the World: Collected Works of Tongue in Mood*. San Francisco: Arkipelago Books, 2020.
- Manseau, Peter. *The Jefferson Bible: A Biography*. Princeton University Press, 2020.
- Salazar-Porzio, Margaret and Adrian Burgos, with Robin Morey. *¡Pleibol! In the Barrios and the Big Leagues / En los barrios y las grandes ligas*. Smithsonian Institution Scholarly Press, 2020.
- Shaw, Madelyn and Trish FitzSimons. *Wool, Paper, Dye: The Textile Legacy of the First World War*. Auckland Museum, 2020.
- Cohen, Kenneth, Mark Algee-Hewitt and Laura McGrath. "The Famous Celebrated Celebrity: Digital Methods for Tracking the Evolution of Renown." *Journal of Popular Culture*, Fall 2020.

NMAH contributors are also working on many substantial research projects which will lead to publications in FY 2021 and beyond. These include:

- Cohen, Kenneth and John Troutman, eds. *Entertaining America* (exhibition catalogue). Expected 2021.
- Lord, Alexandra. "The Root of All Knowledge: Planning for a Career In and Outside the Academy." In *Navigating the New Normal*. Rutgers University Press, 2021.
- Manseau, Peter. *Discovery and Revelation*. Smithsonian Books, June 2021.
- Salazar-Porzio, Margaret. *The Edges of Empire: Spanish Fantasies, Tropical Imaginaries and Public Memory in San Diego*. Under contract with University of Massachusetts Press, Public History Series. 2021.
- Troutman, John W., ed. *Biography of a Phantom: a Robert Johnson Blues Odyssey*, by Mack McCormick. Washington, DC: Smithsonian Books (under contract).

In addition, 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. In collaboration with the National Collections Program (NCP) and Smithsonian Facilities, it continues to plan the renovation of the Museum's PSRP IV in the Museum's East Wing, the development of Pod 6, a collections storage facility, at Suitland, Maryland, and the collections inventory and decontamination projects at the Garber Facility; these establish the framework for space and storage deliberation. To promote the use and enhance the value of its collections, the NMAH will focus on intensive inventory, digitization, and description efforts, increased access online, collaboration, and innovative uses of technology.

In FY 2019, the Museum continued its collections inventory projects to improve the process and focus its efforts, using and refining an accelerated approach to its

inventory efforts. This is the foundation for the inventories required for the PSRP IV, which will involve reviewing more than 50,000 objects over three years. With the support of the NCP, the Museum hired staff to begin that work, targeting storage areas destined for renovation. The actual inventoring will continue through FY 2020. By increasing essential intellectual and physical control of its collections, the Museum will have the foundation for a critical analysis of its space and storage needs through the next decade.

Also in FY 2019, the NMAH completed the inventory of 13,839 objects removed from Garber Facility Building 18 as part of a collection decontamination and re-housing project. Planning continues for similar work on the collections stored in Building 16. In FY 2020, facilities capital funds will be used for decontamination of Building 16 and the objects housed there, and also renovation of Building 15 so it can be used as swing space until permanent storage space is constructed. The renovation of Building 15 should be completed in FY 2020, with object decontamination and re-housing of collections from Building 16 to Building 15 to follow in FY 2021. In FY 2019, the NMAH also initiated an inventory of collections in Garber Facility Building 19, processing 4,869 objects to date. All these efforts support the Smithsonian's master plan for collections storage.

As a result of these projects and ongoing iterative documentation of collections, during FY 2019, the Museum added nearly 40,000 new records to its collections information system and exported almost 500,000 records to the Smithsonian's Enterprise Digital Asset Network (EDAN).

Digitization projects increase the richness and utility of collections information for both internal staff and external audiences. In FY 2019, the Museum continued its project to digitize accession files, making essential collections content readily available to staff across the Museum. Furthermore, the Museum added more than 30,000 files to the collections information system for the immediate benefit of inventory and reconciliation projects and the day-to-day work of the Museum (loans, exhibitions, publications, and more). The project is supported by the Collections Care and Preservation Fund, and digitization of all the remaining files will be completed in FY 2020.

To increase the digital content available to the public, the NMAH continues a cross-divisional collaboration to digitize photographs. It uses funds donated by a private sponsor to support this work; the focus in FY 2019 was on images from the rich jazz and blues collections, reflecting the Smithsonian's emphasis on the Year of Music. Approximately 20,000 images were scanned and processed. In partnership with the Smithsonian Digitization Program Office (DPO) and Google's Cultural Institute, NMAH scanned approximately 18,000 items in its poster collection, spanning three different curatorial divisions and collecting areas.

Through FY 2019, collections management and digital program staff prepared for two related initiatives to increase the accessibility of collections online: Data Share and Open Access. The former is the Museum's effort to make available online, through EDAN, the entirety of its catalogued collection. In December of 2019, Data Share resulted in the immediate release of almost 1.3 million object records and 600,000 images, as well as the prospect of sharing records when objects are acquired and

images are photographed. The availability of these records and images will enable immediate worldwide access to previously inaccessible collections, as well as set up the Museum for more digitization and data enhancement projects. The second project, Open Access, is a pan-institutional initiative to allow the unrestricted use of collections images. Open Access is scheduled to launch at the end of February 2020, and the NMAH plans to release at least 1,400 images into the public domain at that time.

Both initiatives required extraordinary levels of analysis, policy development, and technical preparation. For Data Share, the NMAH developed guidelines and training for staff to identify and remediate personal and sensitive information in collections, conducted an extensive review of existing data to ensure policy compliance with the initial release, and made several user interface and analytics improvements to ensure the usability of the online collection. The NMAH then leveraged this work to inform Institution-wide discussions about Open Access, collaborating closely with the Office of General Counsel and others across the Institution, to determine a legal and cultural framework that balances collections access with ethical considerations.

This work informed a variety of projects, including the Museum's participation in the review of Smithsonian Directive 600 on collections management, which in turn framed the ongoing work on the revision of the Museum's collections management policy. Taken together, these efforts, including the collections cataloguing and inventory projects, have prepared the NMAH to efficiently support plans for new storage facilities and the renovation of the East Wing, as well as position it to package and provide access to its collections for patrons across the globe, taking advantage of new technologies and partnerships.

Goal 3: Engage Diverse National and International Audiences

In 2020, the Museum continues its audience engagement vision to better serve our guests on the Mall and our online visitors from around the country and the world. Our signature programs and digital outreach help achieve this goal by using history to reach across the rifts that divide our nation to bring Americans into conversations with the Smithsonian and one another, exchanging ideas with new generations to search for common ground.

In June of 2019, cross-departmental working groups were convened to gather research, data and best practices to inform the next steps in developing multilingual offerings. These efforts are informed by the principles of language justice, and "the idea that everyone has the right to communicate in the language in which we feel most comfortable." Going forward in 2020, the Museum will continue exploring more multilingual offerings, including building infrastructure for more staff and contract translation, advertising the many multilingual offerings we currently have, and exploring possible connections between Hirshhorn Eye/Google Lens and similar translation technology.

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 2020, the Museum will conduct its ninth National Youth Summit (NYS) focused on youth and democracy. The NYS is a webcast event that brings middle and high school students together with scholars, teachers, policy experts, and activists in a national conversation about important events in America’s past which remain relevant to the nation’s present and future. The Museum will also continue the successful launch of “Becoming US,” an inclusive and accurate online curriculum for teaching the American Experience to middle and high school students, with historical and contemporary case studies, primary sources, lessons aligned with national standards, a glossary of terms used in critical conversations, and deliberation guides for challenging conversations.

The Museum will continue its successful Jazz Beyond Borders tour in 2020 with tour stops in Europe. Throughout the tour, the 18-piece Smithsonian Jazz Masterworks Orchestra (SJMO) has partnered with celebrated guest musicians to explore the global influences and evolution of this national treasure. Combining the musical prowess of our SJMO with the historical and cultural insights that only the NMAH can offer, this tour embodies the Museum’s mission to offer history-rich experiences that inspire learning and create a connected community with our audiences in Washington, DC, across the country, and around the world. Tour stops include evening concerts with acclaimed musical guests, as well as daytime educational experiences for learners of all ages. These enrichment activities are part of the orchestra’s ongoing work to exchange ideas with new generations and to highlight the Museum’s aim of prioritizing programs for underserved communities across the nation.

The Museum’s *Wegmans’ Wonderplace* continues 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 400,000 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.

The NMAH Wallace H. Coulter Unity Square program and events space continues to encourage visitors to explore “The Nation We Build Together” through compelling displays and unique hands-on activities. The heart of Unity Square is a reinstatement of the *Greensboro Lunch Counter*, an object that reflects the tremendous power of the actions of everyday people. This iconic civil rights object is brought to life by a “magic mirror” that connects the actions of the four young men who sat down at the lunch counter to the larger history of participation, protest, and change in America. Unity Square is also home to *American Experiments*, a suite of five interactive, hands-on activities which inspire visitors to talk to each other about the ideas and ideals that have shaped the country. Together, the exhibits, activities, and programs of Unity Square inspire our visitors to think about their own role in creating the nation of tomorrow.

The NMAH advances the idea of America as a place of invention, ingenuity, and innovation-based enterprise through its Lemelson Center for the Study of Invention and Innovation. The Lemelson Center leads research into the role of independent and corporate inventing, creates public programs to engage visitors from around the United

States, and provides education to empower the next generation of inventors and innovators. Within the Museum, Draper Spark!Lab provides hands-on invention challenges to 225,000 children and families from across the country. Visitors are challenged to invent solutions to real-world problems and learn that invention is a sequence that proceeds from problem identification to building prototypes to selling ideas to the market. Since opening, Spark!Lab has served more than one million visitors. Building on the success of Draper Spark!Lab, the Lemelson Center team has established a national network of Spark!Lab sites. By the end of FY 2020, the Center expects to operate Spark!Labs at 10 museums and science centers across the United States, serving more than 700,000 visitors annually.

Public programming initiated by the Lemelson Center reaches millions of Americans annually. Major initiatives in FY 2020 will include Military Invention Day, which draws active and veteran members of the armed forces (and the general public) to the Museum to see more than 30 displays of leading-edge military technology alongside historical innovations, and EurekaFest, a showcase of new ideas from high school and collegiate invention teams organized in collaboration with MIT. Through exhibitions, other daytime and evening programs, and its website and other digital channels, the Lemelson Center brings inspiring stories of American inventors to broader public awareness.

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

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

In FY 2019, the Museum continued to rebuild the scholarly foundation of its professional staff by hiring three new curators with federal funds. In FY 2020, the focus will be to continue the 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 146 interns and 38 Fellows in FY 2019. Beginning in the summer of 2019, the Museum made a commitment to offer stipends to all interns to broaden and diversify the pool of candidates. The Museum’s Inclusion, Diversity, Equity and Access (IDEA) Council is working on strategies to broaden and diversify the Museum staff, as well as establish a more inclusive work environment.

EXPLANATION OF CHANGE

The FY 2021 budget request includes an increase of \$1,421,000. The increase includes \$1,060,000 for necessary pay and other related salary costs for existing staff funded under this line item, and a programmatic increase of 2 FTEs and \$361,000 for collections managers.

Collections Stewardship (+\$361,000, +2 FTEs)

The budget request includes an increase of \$361,000 and 2 FTEs to continue building a robust collections stewardship program; supporting full implementation of the NMAH collections plan; providing access to the Museum's collections, research and programs by creating, managing and promoting the Museum's collections assets; managing projects and core functions; providing responsible stewardship of the Museum's collections; and managing and refining collections data. The additional staff will enable the NMAH to continue complying with the Smithsonian's Inspector General collections stewardship audit of the Museum's preservation efforts; support the increasingly active exhibitions and loans programs and rapid-capture digitization initiatives; and restore mission-critical operations for collections stored off site. The NMAH will seek diverse, multilingual candidates as part of the ongoing goal to make the Museum more diverse, inclusive, and accessible.

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

NATIONAL MUSEUM OF THE AMERICAN INDIAN

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2019 ENACTED	216	33,648	5	1,775	24	9,796	0	115
FY 2020 ENACTED	206	33,885	10	2,070	24	12,069	0	35
FY 2021 REQUEST	206	34,982	10	1,990	24	9,570	0	35

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in vital arts and humanities research	14	2,491	14	2,593	0	102
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	8	1,323	8	1,365	0	42
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	16	2,451	16	2,534	0	83
Exhibitions						
Offer compelling, first-class exhibitions	25	5,910	25	6,074	0	164
Education						
Engage and inspire diverse audiences	41	5,233	41	5,426	0	193
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	31	4,308	31	4,459	0	151
Facilities and Safety						
Improve Smithsonian facilities operations and provide a safe and healthy environment	16	1,855	16	1,905	0	50
Security						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	0	1,214	0	1,214	0	0
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	43	6,374	43	6,613	0	239
Information Technology						
Improve the Institution's information technology systems and infrastructure	12	2,726	12	2,799	0	73
Total	206	33,885	206	34,982	0	1,097

BACKGROUND AND CONTEXT

In partnership with Native peoples and their allies, the National Museum of the American Indian (NMAI) fosters a richer shared human experience through a more informed understanding of Native peoples.

In keeping with its authorizing statute, the NMAI is one Museum in three locations: NMAI-DC on the National Mall, NMAI-NY in lower Manhattan, and the Cultural Resources Center in Suitland, Maryland. The NMAI will focus its resources to support research, exhibits, and programs concerning the cultures and histories of Native communities and to present contemporary works of art to the public. These exhibits and programs attracted more than 1.3 million visitors in FY 2019. 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. 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 2021 budget request includes \$1,097,000 for necessary pay and other related salary costs for existing staff funded under this line item.

MEANS AND STRATEGY

To achieve the strategic goal to Understand and Impact 21st Century Audiences, the NMAI is directing its resources to: 1) activities that will result in increased visitation; 2) public programming and exhibits that will encompass information about the indigenous peoples of the Western hemisphere and Hawaii (as mandated in the NMAI enabling legislation) and that will demonstrate the presence and cultural contributions of contemporary Native peoples; 3) outreach to Native communities, tribes, and organizations through programming methodologies that include consultations, loans from NMAI collections, Web-based access to collections and content, videoconferences, internships, and publications; and 4) amplify the civic discourse on issues facing Native Americans by conducting seminars and symposia on matters of public interest. Major exhibitions opening or under development in FY 2021 include:

- *Preston Singletary: Raven and the Box of Daylight* — Featuring works by the internationally acclaimed Tlingit artist Preston Singletary. Countless generations of Tlingit children have heard Raven’s adventures through an oral tradition that plays an essential role in the survival of Tlingit culture by preserving its rich histories and narratives. Now, Singletary shares this story

with others through a dynamic multi-sensory environment. The exhibition is organized by the Museum of Glass in Tacoma, Washington, and curated by Dr. Miranda Belarde-Lewis (Zuni Pueblo/Takdeintaan Clan of the Tlingit Nation). (October 2020–October 2021).

- *Why We Serve* — This exhibition will coincide with the unveiling of the National Native American Veteran’s Memorial on November 11, 2020. The story will trace the significant history of Native American service in the U.S. military from the Revolutionary War until today’s armed conflicts worldwide. It will include a total of 18–20 panels, supplemented by a short, in-gallery film and NMAI-produced publication. It will expand upon and add to the research and stories presented in the panel exhibition *Patriot Nations* currently traveling across the United States. (November 2020–December 2021).
- *Oscar Howe (Working title)* — In partnership with the Portland Museum of Art, NMAI will organize a retrospective exhibition on the art of Yanktonai artist Oscar Howe (1915–1983), opening in NMAI-NY on November 6, 2021 and traveling thereafter to Portland in 2022. Howe was known for both his iconic, modernist approach in his work as a painter and for his defense of the rights of Native artists to choose their own artistic path. The exhibition will include approximately 70 paintings by Oscar Howe lent from museums, historical institutions, and private owners from across the United States, including many that have never been exhibited publicly. The exhibition will be accompanied by a fully illustrated catalogue produced by NMAI and a seven-to-nine-minute gallery film that adds biographical dimension to the presentation. The exhibition will trace Howe’s development as an artist in addition to illustrating how his work was informed by indigenous aesthetics and modern art. (November 2021–June 2022).

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 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 model materials that schools across America can use and expand upon for their own students. 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 schoolchildren 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 expanding access to the NMAI collections online, and enhancing our website, 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. In addition, NMAI will maintain its project of loaning objects to tribal museums and, where appropriate, repatriating sacred objects and items of cultural patrimony to their original tribes.

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

NONAPPROPRIATED RESOURCES — General trust funds support salary and benefit costs for the Museum director and other program-related costs. Donor/ sponsor-designated funds support salaries and benefits for development staff; costs associated with reaching NMAI's fundraising goals; training of future conservators; conservation of objects for exhibits and community loans; publications and special events for exhibition openings; costs related to specific programs and projects, including the National Native American Veterans' Memorial, 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 2019 ENACTED	56	6,556	3	1,557	14	3,128	0	0
FY 2020 ENACTED	56	6,646	3	3,057	21	2,470	0	0
FY 2021 REQUEST	57	7,060	3	2,000	21	3,963	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in vital arts and humanities research	4	538	4	551	0	13
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	2	295	2	304	0	9
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	2	241	2	254	0	13
Exhibitions						
Offer compelling, first-class exhibitions	18	2,140	18	2,226	0	86
Education						
Engage and inspire diverse audiences	6	722	6	762	0	40
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	18	1,932	19	2,163	1	231
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	6	760	6	782	0	22
Total	56	6,646	57	7,060	1	414

BACKGROUND AND CONTEXT

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

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

The NPG devotes a major portion of its resources to the strategic goal of Understanding and Impacting 21st Century Audiences, thereby increasing the availability and accessibility of the NPG's collections through exhibitions, public programs, and publications. The exhibitions explore themes in history, biography, and art in a way that brings out new meaning and understanding of the American experience. The NPG's exhibitions in FYs 2020 and 2021 will continue to support the Smithsonian's American Women's History Initiative (AWHI), examining as never before the contributions of women to shaping America. Highlights of special exhibitions opening in FY 2020 include:

- *The Outwin 2019: American Portraiture Today* — This exhibition is the result of our fifth Outwin Boochever Portrait Competition. The 2019 triennial competition — open to all media, including performance art — resulted in 46 finalists, with the first Latino artist winning first prize. The competition focuses on broadening the definition of portraiture while highlighting the genre's relevance in contemporary art and culture.
- *Recent Acquisitions/Gala Installation* — Displaying recently acquired and commissioned works, this exhibition includes portraits of the newest recipients of the NPG's *Portrait of a Nation* prize: Frances Arnold, Jeff Bezos, Earth Wind and Fire, Lin-Manuel Miranda, Indra Nooyi, and Anna Wintour.
- *Portraits of the World: Denmark* — The third installation in our international portrait series highlights Danish artist Michael Ancher's **Kunstdommere**. This monumental group portrait of four of Denmark's most significant cultural figures, several of whom contributed to the Modern Breakthrough that transformed Danish art and literature during the late-19th and early-20th centuries, speaks to the transnational

phenomenon of artists' communities, which advanced art in Denmark as well as in the United States.

- *John Singer Sargent: Portraits in Charcoal* — Co-organized with the Morgan Library and Museum in New York, this is the first exhibition of Sargent's portrait drawings in more than 50 years. At the height of his success as a portraitist, John Singer Sargent (1856–1925) astonished the transatlantic art world by suddenly abandoning oil painting in 1907. For the rest of his life, he explored likeness and identity through the medium of charcoal, producing several hundred portraits of individuals recognized for their accomplishments in fields such as art, music, literature and theater. The exhibition features compelling depictions of an international network of trailblazing men and women who helped define 20th-century Anglo-American culture.
- *Visionary: The Cumming Family Collection* — This exhibition reveals the results of more than 25 years of inspired collecting on the part of Ian M. and Annette P. Cumming. Beginning in 1995, the Cummings commissioned or acquired over two dozen portraits of national and global leaders created by important American artists, including Chuck Close, Robert McCurdy and Nelson Shanks.
- *“Warranted to Give Satisfaction”: Daguerreotypes by Jeremiah Gurney* — This exhibition of portraits by American daguerreotypist Jeremiah Gurney (1812–1895) will continue the practice of highlighting works by a single daguerreotypist or studio in the NPG's Daguerreian Gallery. A jeweler by profession, Gurney gave up that trade in favor of daguerreotypy in 1840 and established one of New York City's first daguerreotype studios.
- *One Life: Will Rogers* — An American original whose insightful humor was surpassed only by his generosity of self and inestimable goodwill, Rogers was born in 1879 on Indian Territory, of Cherokee ancestry, in what became the state of Oklahoma. His life in vaudeville, Hollywood, and journalism won for him the hearts of Americans throughout the country.
- *Her Story: A Century of Women Writers* — This exhibition drawn from the NPG collection will highlight 24 noted women writers from the past 100 years. Their writings and books are well known, and many titles have become classics of American literature. The medley of authors has collectively won every literary award. Pulitzer Prize winners include Joyce Carol Oates, Anne Tyler, Alice Walker, Marilyn Robinson, Jhumpa Lahiri, and Gwendolyn Brooks, the first African American writer to win a Pulitzer and earn election to the National Institute of Arts and Letters.

In addition to permanent collection rotations and the conclusion of existing traveling exhibitions, in FY 2020 NPG will begin the four-venue tour of *Eye to I:*

Self-Portraits from the National Portrait Gallery to the Boca Raton Museum of Art in Florida; the Albuquerque Museum in New Mexico; the Springfield Museum of Art in Missouri; and the Art Museum of South Texas in Corpus Christi. Within the Museum, NPG continues its plans to refresh *The Struggle for Justice* and *American Origins* permanent installations.

The combined Audience Engagement Department, consisting of Communications, New Media, and Education staff, has helped the Museum appeal to 21st-century audiences by defining overarching goals, strategies that support each goal, actionable tactics for each strategy and key performance indicators to measure success. The NPG will make further strides to raise its national visibility, as well as to increase local visitorship and engagement. The Audience Engagement team accomplishes these goals through targeted outreach, Web, and social media campaigns. As we continue to build off of diverse representation, the NPG leverages social media platforms to attract more followers and convert them to visitors, and also expand our engagement with international media.

In FYs 2020 and 2021, 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 individuals to extend the educational value of the NPG's collection both programmatically and digitally. The Accessibility Task Force will bring NPG staff up to par with accessibility issues and demands. Other popular programs, including afterhours events, curator tours, and Family Days events, will continue to anchor the NPG's educational offerings. The NPG docent corps remains a vibrant and diverse group well versed in the collection and trained in inquiry techniques to engage audiences, and one-quarter of the docents are fluent in Spanish and English. *Explore!*, the NPG education space for 18-month to 8-year-olds and designed to help young people explore portraiture as art and history, will continue operations and draw more families to the Museum.

The NPG's primary publication projects in FY 2020 include *The Obama Portraits* (February 11, 2020), a co-publication with Princeton University Press, which examines the creation and impact of the portraits of President Barack Obama, by Kehinde Wiley, and that of the former First Lady Michelle Obama, by Amy Sherald. The publications office will also produce *Visionary: The Cumming Family Collection* (in April of 2020) in connection with a major gift of portrait commissions that were funded by Ian and Annette Cumming. The publications office will also be working on an exhibition catalogue for *Every Eye Is Upon Us: First Ladies of the United States*. While the book will be released in FY 2021, the printing is set for the summer of 2020. We plan to begin the production of a children's book (*ABCs of the National Portrait Gallery*) in FY 2020, and there have been recent conversations about moving forward with a major publication on the portraits of African Americans in the Museum's collection. In FY 2021, the office will also begin work on two major scholarly exhibition catalogues (*Hung Liu* and *Brilliant Exiles*) and will produce some brochures in addition to hundreds of

extended label texts. Furthermore, the NPG remains dedicated to the Museum's bilingual initiative by continuing to translate new label texts and other materials into Spanish.

The NPG will Preserve Our Natural and Cultural Heritage by featuring prioritized acquisitions of portraits of underrepresented Americans. The NPG also continues several projects to produce digital images of its collection items, and to address cataloguing backlogs, to enhance the study and appreciation of its portraits in all media by researchers and the public around the world. The NPG will digitize more than 4,000 collection objects, primarily works on paper, and will load the resulting images and files into the Smithsonian Digital Asset Management System (DAMS), complete with object condition reports. Other conservation work continues, including necessary conservation of paintings and sculptures of notable American women, and other paintings requiring treatment, as well as delicate frames of numerous painted portraits.

The FY 2021 budget request includes an increase of \$414,000. This includes \$256,000 for necessary pay and other related salary costs for existing staff funded under this line item, and a programmatic increase of \$158,000 and 1 FTE for a collections manager.

MEANS AND STRATEGY

In FY 2021, the NPG will continue to concentrate its efforts and resources on exhibitions, developing and maintaining its collection, expanding public education offerings, and pursuing new research directions.

The NPG will pursue the strategic goal of offering compelling, first-class exhibitions in FY 2021 with an ambitious and active on-site and traveling exhibition schedule, featuring the following:

- *Recent Acquisitions (Corcoran Gift)* — Following the Corcoran's closure in 2014, the Portrait Gallery received 80 works as part of the collection dispersal from the country's first private museum. This exhibition will present more than 25 gifted works, including portraits of cultural figures Louis Armstrong, Katharine Graham and Frida Kahlo, presidents James Madison and Zachary Taylor, and the first Secretary of the Smithsonian Institution, Joseph Henry, in a mix of mediums.
- *Every Eye Is Upon Me: First Ladies of the United States* — Part of "Because of Her Story," the Smithsonian Institution's American Women's History Initiative, this major exhibition spans nearly 250 years, from Martha Washington to Melania Trump, and is the first to explore the historical significance of this prominent national position through portraiture. Working closely with the White House and the National First Ladies' Library, *Every Eye Is Upon Me* — a quote taken from an 1844 letter written by First Lady Julia

Tyler to her mother — will bring viewers closer to understanding the challenges and triumphs of the dozens of dynamic women who embraced, sometimes reluctantly, the duties of serving as “First Lady.”

- *Portraits of the World: Australia* — Highlighting the global context of American portraiture, this exhibition will feature the large-scale oil portrait of **Emily Kame Kngwarreye with Lily**, by Jenny Sages, on loan from the National Portrait Gallery in Canberra. The portrait of this prominent indigenous Australian artist who created most of her work while in her 80s will be presented with likenesses of her American contemporaries, including Ansel Adams, Ralph Waldo Emerson, Georgia O’Keeffe, Alice Waters, and Walt Whitman.
- *Portraiture Now: Kinship* — Seven contemporary artists explore intergenerational relationships, whether among blood relatives or friends, to examine the shifting notions of family. The works evoke the mutable aspect of the kinships they depict, attending to both internal and external forces that affect those relationships. Njideka Akunyili Crosby and Ruth Buentello portray the effects of migration and transnational lives, while LaToya Ruby Frazier’s photographs of Flint, Michigan depict the impact of industrial neglect on a single family. Jessica Todd Harper probes the subtle tensions underlying daily interactions between family members. Jess T. Dugan’s work explores her relationship with her wife, Vanessa, as they traverse daily life as a queer couple embarking on parenthood. In paintings he describes as a “form of prayer,” Sedrick Huckaby addresses the memorialization of family members and loved ones whose lives have been lost to gun violence. Performance artist Anna Tsouhlarakis will present an exhibition-related IDENTIFY performance about her experiences as a Native American woman navigating motherhood in a world of child-rearing classes created by, taught by, and meant for upper middle-class white women in Washington, DC.
- *Block to Block: Naming Washington* (Riley Gallery) — Each day people in Washington, DC travel on streets, cross bridges, or relax in squares whose names belong to others. Crittenden, Davenport, Farragut, Fessenden, and Upshur are among the names that may be well known to those who live and visit here; however, do we know who these people were? Why were they chosen in the first place? This exhibition includes a selection of images from the Portrait Gallery’s collection, depicting the people whom city planners deemed worthy of memorializing through streets and other urban space names.
- *Hung Liu: Portraits of Promised Lands* — This first large-scale retrospective of internationally acclaimed, Chinese-born American artist Hung Liu will feature more than 50 artworks made by the artist from her time in Maoist China in the 1960s, through her immigration to California in the 1980s, to the height of her career today. Having lived through wars, political revolutions,

exile and displacement, Liu's story presents a complex, multi-faceted picture of an Asian Pacific American experience. Her portraits offer a personal and yet universal look at themes of feminism, the freedom of self-expression, history and personal memory, migration and immigration.

- *One Smithsonian: Directors' Choice* (175th Anniversary Show) — In celebration of the 175th anniversary of the Smithsonian and, in the Provost's words, taking the "opportunity for us to come together and look back at our history and forward to the future," the Portrait Gallery will ask each Smithsonian museum and research center director to select an individual American from the last 175 years who has made a significant impact that will continue to resonate into the future.
- *Brilliant Exiles: American Women in Paris, 1900 to 1939* — During the first four decades of the 20th century, American women made crucial contributions to the vibrant creative milieu of Paris. Drawn by a strong desire for independence, they crossed the Atlantic to pursue personal and professional ambitions in a city viewed as the epicenter of modernity.

In addition to these on-site temporary exhibitions, the Outwin 2019 four-venue tour will launch in October of 2020, and the Outwin Boochever Portrait Competition of 2022 will be under way with a call for entries in the fall of 2020. We will also launch the national tour of the Barack and Michelle Obama Portraits to five major cities, while continuing the *Eye to I* national tour through the fall of 2021. The permanent collection refresh of *The Struggle for Justice* will occur in the spring of 2021, with in-depth planning occurring for the 2022 reinstallation of *American Origins*.

The NPG's major publication projects in FY 2021 will include completion of the *Hung Liu* exhibition catalogue; *Brilliant Exiles* exhibition catalogue; and the completion of the *ABCs of the National Portrait Gallery*. We will also begin work on the Outwin 2022 catalogue in FY 2021. With each publication, we aim to engage and inspire diverse audiences through high-quality printed works that reach far beyond the Museum walls nationally and internationally.

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 underrepresented minorities and women. The Museum will also seek to expand its holdings of contemporary Americans by acquiring portraits, including commissioned portraits, of leading figures in disability rights, the sciences, business, and the arts. The Museum is a leader in the collection, study, and conservation of artworks created in digital formats — a broad and dynamic art form evolving with technology. The NPG will continue working with the Digitization Program Office until its entire collection is 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. The Museum will also continue to expand analytical state-of-the-art analysis of works of art.

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

EXPLANATION OF CHANGE

The FY 2021 budget request includes an increase of \$414,000. This includes \$256,000 for necessary pay and other related salary costs for existing staff funded under this line item, and a programmatic increase of \$158,000 and 1 FTE for a collections manager.

Collections Manager (+\$158,000, +1 FTE)

The NPG collections are growing in quantity and complexity, and augments to our staff will realize the full value of these national resources to make them available for research, interpretation, and for displays to the public in Washington, DC and around the country. The Museum is also addressing increasingly complex collection management and conservation challenges with new accessions and existing collections. The position will enable the NPG to accomplish several goals even as the collection expands: to make Audio Visual Special Collections and Catalogue of American Portraits research information accessible to the general public; work on in-house uses and licenses for external requests; and to broaden the reach of NPG programs and further both the NPG and Smithsonian strategic goals to serve a larger national and global audience.

NONAPPROPRIATED RESOURCES — General trust funds support essential positions and help defray costs of special events for exhibition openings, loan exhibition development, outreach, fund raising, management, and research. The NPG must support exhibitions, publications, public lectures and gallery programs, symposia, and some collection acquisitions with donor/sponsor-designated funds. Private donations are thus critical 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 2019 ENACTED	6	1,581	2	581	2	2,862	19	3,034
FY 2020 ENACTED	6	1,831	2	515	2	2,985	23	3,285
FY 2021 REQUEST	6	1,865	2	500	2	3,165	23	3,355

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		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	98	0	6
Understand and Impact 21st Century Audiences						
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	1	160	1	166	0	6
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	4	536	4	558	0	22
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	0	1,043	0	1,043	0	0
Total	6	1,831	6	1,865	0	34

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 Strategic Plan, *One Smithsonian*.

The FY 2021 budget request includes \$34,000 for necessary pay and other related salary costs for existing staff funded under this line item.

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 June of 2020, the Museum will open the exhibition *Baseball: America's Home Run*, exploring America's national pastime. Featuring hundreds of U.S. and international stamps commemorating historic moments and drawing on original artwork and archival material from the United States Postal Service's (USPS) esteemed Postmaster General's Collection, the display of stamps and mail will be complemented by dozens of objects loaned by other Smithsonian Institution museums, law-enforcement agencies, and private collectors. The exhibition will be presented in English and Spanish through a collaboration with the Smithsonian Latino Center, and will have broad appeal.

In FY 2021, there will be a rotation of baseball-themed philatelic and postal history objects from the Museum's collection, as well as loaned items from more than 25 different lenders. This represents one of the largest and most complex special exhibitions that the Museum has ever produced, with more than 120 objects spread across multiple galleries, and with three rotations scheduled. Various programs and events targeting a wide audience will be planned to enhance the exhibition experience. The exhibition will be in place until January of 2023.

The NPM's Department of Education and Visitor Services (DEVS) will continue to expand K-12 school programs and create new learning opportunities in the Byrne Education Center of the *William H. Gross Stamp Gallery* and in new and existing Museum exhibitions. The Byrne Center will provide enhanced

learning opportunities for visiting student groups, which incorporate the newest digital pedagogical tools. The Byrne Center will also continue to be used for NPM and Institution-wide meetings and programs. A second educational space supports the Museum's on-site school tours, community engagement activities, and family programming such as the NPM's traditional programs, including *First-Class Problem Solvers* and *Listen, Look and Do!* In addition, the NPM will continue to collaborate with local museum studies students at Stuart-Hobson Middle School, and with our *History Makers* program that was originally supported through a Youth Access Grant. Efforts to expand the program to other area public schools will continue to be pursued.

The NPM recently installed three new educational stations in the Museum's galleries. These stations provide additional interactive learning opportunities for children and adults, supporting the Museum's effort to make its exhibitions and educational offerings more accessible to a younger audience and provide new hands-on learning opportunities to discover more about the NPM's collections and the history of philately in America. FY 2021 will also see the continuation of the NPM's dedication to creating *One Smithsonian* by engaging the resources of multiple museums and research centers to produce quality educational products. Collaborative programming will continue with initiatives being planned with the Smithsonian Latino Center, Smithsonian American Art Museum, and the Archives of American Art.

In FY 2021, the Museum will also focus on initiatives to improve the visitor experience by engaging the entire NPM staff and security contractors in visitor-related activities through the Coordinated Visitor Experience Team (CVET) program. The Visitor Services team is continuing to improve the visitor experience both through physical changes, such as facilities and signage, and by fostering an atmosphere of customer service, cooperation and teamwork Museum-wide. The planned public lactation privacy pod comes from the need to supply a private, clean, and comfortable place for our visitors to use a breast pump or breastfeed their child at the Museum. FY 2021 will include the planning and design of a family-style bathroom to augment this service. Both amenities are significant and needed improvements for Museum guests.

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

At NPM, federal resources are dedicated to improving the stewardship of the six million objects which represent the national collection of philatelic material and postal history.

Working closely together, the Museum's collections and curatorial teams will continue to increase the number of collection objects that are available online. Associated initiatives include partnering with the Smithsonian's Digitization Office to carry out mass-digitization projects of 2D and 3D material, and participating in the SI-wide Open Access initiative by identifying materials that can be made available to the public for download and re-use.

In FY 2021, the collections and curatorial departments will build on FY 2020 goals to participate in Institution-wide digital initiatives, carry out exhibition rotations, identify and consolidate material in storage, process deaccessions, and maintain normal business operations. The collection will be made available to Museum visitors, researchers who contact the team for an appointment to see material not on view, and to audiences around the world via the Museum's website.

Also in FY 2021, the collections department will continue to undertake all aspects of collections management, deliberately developing, maintaining, preserving, and making the national collection accessible to the public. For example, the team will continue to document and add data to the Museum's database. The Museum's conservator will carry out conservation treatments on the Museum's permanent collection, ensuring that the objects are preserved for future generations. And finally, the team will process new acquisitions that enhance the Museum's ability to fully capture philatelic and postal history.

A major initiative to improve accessibility to off-site collections will remain a Museum priority. The Museum will continue to coordinate with the staff of the National Museum of American History (NMAH) on the decontamination of NPM collection objects stored in Garber building number 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 can then be made available to the public in displays on site and via the Museum's website.

The collections department will continue to catalogue, image, and conserve the Postmaster General's (PMG) collection of original stamp art. The PMG collection, which began transferring 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. As USPS continues to transfer new PMG

material to NPM, the collections department will examine, treat, and re-house the collection, as well as process related archival collections.

Finally, in FY 2021, the team will look to refine collections policies, plans, and procedures that are due for review. Policies and plans include the Museum's collections management policy, its lending policies, its collections emergency plan, and, perhaps most importantly, its collections stewardship plan. The collections stewardship plan will guide the content and development of NPM's collection. The collections department will lead the staff in a coordinated and uniform direction to draft this plan, which will allow NPM to gain better control of its collections and ensure that it has appropriate staff and resources to manage them.

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

SMITHSONIAN AMERICAN ART MUSEUM

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2019 ENACTED	89	10,389	6	1,703	50	9,762	1	100
FY 2020 ENACTED	89	10,412	5	1,300	48	10,748	2	100
FY 2021 REQUEST	90	11,089	7	1,987	51	11,617	2	136

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in vital arts and humanities research	6	722	6	754	0	32
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	7	849	7	886	0	37
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	13	1,493	13	1,562	0	69
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	25	2,845	25	2,977	0	132
<i>Education</i>						
Engage and inspire diverse audiences	2	271	2	282	0	11
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	19	2,101	20	2,407	1	306
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	1	128	1	133	0	5
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	13	1,721	13	1,790	0	69
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	3	282	3	298	0	16
Total	89	10,412	90	11,089	1	677

BACKGROUND AND CONTEXT

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

To achieve the strategic goal of Enhanced Interdisciplinary Research, SAAM curators and research Fellows-in-residence use the collection and other resources to develop new insights into America's cultural and artistic legacy as well as current themes and explorations. The resulting knowledge informs collections development and serves as the basis for exhibitions, associated award-winning catalogues and scholarly publications, and educational programs. The Fellowship program, which is celebrating its 50th anniversary in 2020, cultivates the next generation of professors and curators. SAAM has hosted more than 700 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, 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 renovated restaurant greet visitors with a broad range of activities to maintain their interest. The Lunder Conservation Center provides a window on preservation of the national collections, and the Luce Foundation Center for American Art displays 3,500 collection objects in an inviting, visible storage center. The Renwick Gallery has additional space for exhibitions, public programs, and rotating displays of its permanent collection of American crafts. Multiple traveling exhibitions organized by the Museum are shared with other museums throughout the United States, enriching people's lives by giving them direct access to their nation's artistic and cultural heritage.

National education programs directly reach K–12 teachers and students. These include adoption of the latest technologies where most effective, as well as incorporation of art into social studies, history, and language arts. Resident teacher institutes are supplemented by online/on-demand courses for the K–12 community. The Museum regularly collaborates with private and public organizations to provide teachers with new tools and resources. In addition, students are brought into the Museum as often as possible to provide that 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 2019, SAAM hosted 318 programs and events.

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

SAAM also has a robust 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.

The FY 2021 budget request includes an increase of \$677,000. The increase includes \$477,000 for necessary pay and other related salary costs for existing staff, and a programmatic increase of 1 FTE and \$200,000 for a collections manager.

MEANS AND STRATEGY

Research on the collections and related American art topics by curatorial staff continues in support of exhibitions and the permanent collection, including two new exhibition catalogues scheduled for publication in FY 2021. Endowments and multi-year private support have allowed the Museum to hire a full slate of curators with specialties ranging from sculpture, photography and contemporary crafts to Media Arts. The Museum's award-winning, peer-reviewed journal, *American Art*, will publish

three issues of new scholarship. The Museum hosts approximately 20 research Fellows every year from throughout the country and internationally, thereby increasing the number of scholars using the collections. The resulting discoveries and interpretations by staff and Fellows help Americans understand and appreciate their rich and diverse cultural heritage as well as advance scholarship in American art. Research also feeds into educational programs and provides content for the Museum's website and new media.

The Museum embraces the Web by making as much of its artwork and related data as possible freely available online to the public. Ninety-nine percent of SAAM's collection now is online. The Museum hosts dynamic websites for visitors, researchers, and educators, most notably through the popular website at AmericanArt.si.edu. SAAM participates in collaborative digital initiatives with other organizations, implementing powerful tools such as Linked Open Data (LOD). The publication of SAAM's collections data as LOD has established the Museum as a leader in promoting semantic Web standards in the museum community. SAAM maintains an active social media presence across many 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 six exhibitions for FY 2021. Major exhibitions include *Subversive, Skilled, Sublime: Fiber Art by Women*; *Sargent, Whistler, and Venetian Glass: American Artists and the Magic of Murano*; *I Am an American: The East Baltimore Survey*; *Alma Thomas: Creating Color*; and *Chihuly at the Smithsonian*. The Renwick Gallery hosts *Janet Echelman's 1.8 Renwick*, a Grand Salon installation, and *Venice and American Studio Glass*.

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

National outreach includes the touring exhibitions *African American Art*, *Kara Walker*, and *William H. Johnson: Fighters for Freedom*. 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 tours in American Sign Language 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 American public and their cultural history. The Chinese New Year celebration, held in conjunction with the Chinese Embassy, remains a visitor favorite. Public programs in the galleries, McEvoy Auditorium, and Kogod Courtyard occur nearly every day. These are supplemented by new Web content, as well as by making all content accessible regardless of the media platform used.

Education initiatives continue to expand as the Museum takes advantage of new online tools and assets. SAAM continues to develop its highly successful distance-learning program with staff and 22 volunteers who create content that reaches classrooms worldwide. Three videoconference centers, including the MacMillan Education Center, enable the Museum to serve more students than ever before. Contracts and partnerships with Government agencies such as the Department of Defense, the Kennedy Center, and the Washington, DC Public Schools expand the Museum's reach to more diverse audiences. The internship program hosted 48 students in FY 2019 (from 20 states, Washington, DC, Italy and Japan), and helps to prepare the next generation of museum professionals. In addition, the Museum facilitated three-week-long teacher training institutes; in FY 2019, 78 teachers from 24 states and Taiwan attended.

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

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

EXPLANATION OF CHANGE

The FY 2021 budget request includes an increase of \$677,000. The increase includes \$477,000 for necessary pay and a programmatic increase of 1 FTE and \$200,000 for a collections manager.

Collections Manager (+\$200,000, +1 FTE)

The budget request includes an increase of \$200,000 and 1 FTE to hire a registration specialist, collections manager to provide the severely understaffed SAAM Registrar's Office the ability to work more effectively and efficiently. This position will allow SAAM to more consistently oversee and perform core collection needs such as storage maintenance and planning, object data entry and management, rehousing inventory, digitization, serving public visitors, and all other tasks associated with the oversight and care of more than 44,000 works in the permanent collection. This collections manager will provide an essential service that will allow SAAM to generously share the national collections. This position will enable smooth operations for SAAM loans and traveling exhibitions and support programs. These programs enhance the Museum's and the Smithsonian's visibility and prominence locally, nationally, and internationally. SAAM collections and their proper management represent a key facet of our successful public service. Rising to meet 21st century expectations, the Museum's programming, outreach, and collection needs have rapidly escalated in recent years. This hire is an essential first step in building SAAM staffing to levels commensurate with its ambitions to achieve its own mission, sustain core functions, and operate as a fully functioning and engaged unit within the Smithsonian.

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 2019 ENACTED	64	9,333	47	6,758	9	5,552	1	183
FY 2020 ENACTED	64	9,333	33	6,371	21	4,806	3	581
FY 2021 REQUEST	64	9,804	30	5,866	24	5,184	5	1,028

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	3	1,385	3	1,400	0	15
Engage in vital arts and humanities research	1	845	1	851	0	6
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	3	352	3	369	0	17
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	2	209	2	218	0	9
<i>Exhibitions</i>						
Offer compelling, first-class exhibitions	39	4,672	39	5,018	0	346
<i>Education</i>						
Engage and inspire diverse audiences	11	1,428	11	1,487	0	59
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	5	442	5	461	0	19
Total	64	9,333	64	9,804	0	471

BACKGROUND AND CONTEXT

All of the Institution's outreach activities link the Smithsonian's national collections, research, and educational resources with Americans from coast to coast.

These programs aim to: 1) broaden the audiences who share in the nation's rich cultural heritage; 2) enhance widespread research-based knowledge of science, history, and art; and 3) provide opportunities for educators and scholars to further increase and diffuse knowledge.

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

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

The FY 2021 budget request includes an increase of \$471,000, including \$284,000 for necessary pay and other related salary costs for existing staff funded under this line item, and \$187,000 in exhibit support for SITES.

MEANS AND STRATEGY

Smithsonian Institution Traveling Exhibition Service (SITES) (39 FTEs and \$5,018,000) — For more than 69 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 2021 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 2021 resources will continue to support and broaden our outreach to these communities, in addition to generating public engagement through exhibition topics related to the Grand Challenges of the American

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

FY 2021 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 has won the Smithsonian Education Innovation Award in recognition of its outstanding accomplishments exemplifying the Smithsonian's commitment to innovation in education. In FY 2021, MoMS will tour *Crossroads: Change in Rural America*, looking at profound transformations in 20th-century small towns and how they are reinventing themselves by creatively focusing on new opportunities for growth and economic development. In addition, MoMS will continue to travel exhibitions examining the cultural and scientific relationships between people and water, and how hometown sports teams energize communities and instill local pride.

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

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

Smithsonian Affiliations (2 FTEs and \$380,000) — Now in its 24th year, Smithsonian Affiliations continues to build a strong national network of affiliated museums, educational, and cultural organizations that facilitate the display of Smithsonian artifacts and the dissemination of the Institution's resources and expertise in communities across America. By working with both emerging and well-established museums of varying sizes, subject areas, diverse audiences, and scholarly disciplines, Smithsonian Affiliations creates the framework through which people unable to visit the Institution's facilities in Washington, DC can still experience the Smithsonian in their own communities. In addition, the Smithsonian works closely with affiliated organizations to increase their audiences, expand their professional capabilities, and gain greater recognition in their local communities.

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

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

Smithsonian Center for Learning and Digital Access (SCLDA) (13 FTEs and \$1,596,000) — The Smithsonian is creating new digital platforms for scholars and educators to better access Smithsonian collections, research, and education resources. SCLDA's Smithsonian Learning Lab is a digital platform for educators and students, enabling everyone to find and customize resources for educational use and share them with others. Based on continual research and evaluation, the Lab evolves to provide valuable services to its global audiences. SCLDA also develops content and materials for classrooms and provides professional development to teachers. Within the Institution, SCLDA offers many services and technical support to other units. These range from collaborations to create and disseminate content, technical modifications to the Learning Lab in response to unit requests, and outreach to broaden access and engage audiences with the Smithsonian's educational offerings. SCLDA's expertise in research also supports education and access initiatives across the Institution.

Office of Fellowships and Internships (OFI) (6 FTEs and \$1,993,000) — The OFI has the central management and administrative responsibility for the Institution's programs of research, Fellowships, and other scholarly appointments. One of its primary objectives is to facilitate the Smithsonian's academic interactions with students and scholars at universities, museums, and other research institutions around the world. The Office administers Institution-wide research support programs, and assists other Smithsonian museums, research centers, and offices with diversifying and developing additional Fellowships and visiting appointments.

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

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

Smithsonian Institution Scholarly Press (SISP) (4 FTEs and \$817,000) — Through the Smithsonian Contributions Series program, continually published since 1875, SISP publishes and disseminates research conducted by Smithsonian staff and collaborators. The federal funds support the production of first-class research results in science, art, culture, and history, with widespread distribution to the public and to libraries, universities, and other education and research organizations. SISP publishes open-access series, in digital and print formats, in core subject areas of anthropology, art, botany, history, marine sciences, museum conservation, paleobiology, and zoology, as well as open monographs in other disciplines, and disseminates interdisciplinary research and conference proceedings.

Furthermore, federal resources underwrite the publication of scholarly books closely related to the national collections and SISP administration of the initiative to advance science by increasing public access to peer-reviewed scholarly articles and papers authored by Smithsonian staff. Toward this end, SISP recently revised Smithsonian Directive (SD) 806, Publishing at the Smithsonian Institution and by Smithsonian Employees, to provide updated guidance on disseminating the results of federally funded research. 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.

EXPLANATION OF CHANGE

The FY 2021 budget request includes an increase of \$471,000, including \$284,000 for necessary pay and other related salary costs for existing staff funded under this line item, and \$187,000 in exhibit support for SITES.

Smithsonian Institution Traveling Exhibition Service (SITES) — Exhibit Support (+\$187,000)

This budget request includes an increase of \$187,000 to support SITES' landmark Museum on Main Street (MOMs) initiative. The MOMs program continues

to enrich the underserved populations of rural America. The increased funding will support the broad array of educational resources each MoMS exhibition uses to reach local communities, engage and inspire more people where they are, and create deep and impactful educational experiences for youth while catalyzing critical conversations on issues affecting them.

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 2019 ENACTED	23	2,839	26	4,306	0	235	0	0
FY 2020 ENACTED	23	2,839	34	4,620	0	0	0	0
FY 2021 REQUEST	23	2,947	34	4,530	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Understand and Impact 21st Century Audiences						
Public Programs						
Provide relevant reference services and disseminate information to the public	17	1,996	17	2,080	0	84
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	6	843	6	867	0	24
Total	23	2,839	23	2,947	0	108

BACKGROUND AND CONTEXT

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

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

unit collaboration to help the Smithsonian better achieve its strategic goals and core mission.

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

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

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

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

The FY 2021 budget request includes \$108,000 for necessary pay and other related salary costs for existing staff funded under this line item.

MEANS AND STRATEGY

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

In addition, the OPA initiates and responds to all media inquiries in a timely manner with accurate, concise information, and generates story ideas for the media, featuring Smithsonian experts, exhibitions, research, and programs. In terms of new initiatives, the OPA also has a leading role in coordinating the rollout of the Institution's *One Smithsonian: Greater Reach, Greater Relevance, Profound Impact* Strategic Plan and many other 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 2019 ENACTED	0	16,784	0	0	0	0	0	0
FY 2020 ENACTED	0	23,284	0	0	0	0	0	0
FY 2021 REQUEST	0	23,284	0	0	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	0	1,300	0	1,300	0	0
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	0	966	0	966	0	0
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	0	10,600	0	10,600	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	23,284	0	23,284	0	0

BACKGROUND AND CONTEXT

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

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

In 1993, Congress approved the Smithsonian's reallocation of funds to create two Institution-wide funding programs: the Research Equipment Pool (REP) to support the units' needs for state-of-the-art research equipment, and the Information Resources Management (IRM) Pool to systematically address information technology needs throughout the Institution. The Institution first received funds in FY 1995 to support the development of a third Institution-wide program, this one for Latino initiatives, including research, exhibitions, and educational programming. In FY 1998, Congress approved a \$960,000 increase to the IRM Pool specifically dedicated to collections information systems' needs. The FY 2006 appropriation included an increase of \$1 million to establish the Collections Care and Preservation Fund (CCPF). The CCPF provides resources for the highest priority collections management needs to improve the overall stewardship of the national collections. The FY 2016 appropriation included an increase of \$400,000 to establish the Asian Pacific American Initiatives Pool (APAIP) to explore and share the contributions of Asian Pacific Americans to the American Experience. More recently, In FY 2018, Congress approved a \$2,000,000 increase to Institution-wide programs in support of the new American Women's History Initiative (AWHI). Congress also approved increases to the Smithsonian Institution-wide programs in FY 2020, including \$100,000 to the REP, \$200,000 to the IRM Pool, \$3,000,000 to the Latino Initiative Pool, \$200,000 to the APAIP, and \$3,000,000 to the AWHI.

MEANS AND STRATEGY — RESEARCH EQUIPMENT POOL (\$1,300,000)

The Smithsonian's ambitious research agenda requires appropriate equipment to achieve its goal of Enhanced Interdisciplinary Research. This basic equipment infrastructure requires regular maintenance, upgrades, and routine replacement. With the current allocation, the Institution will continue striving to prioritize and address the many research needs throughout the Smithsonian community. REP funds have enabled Smithsonian museums and research centers to undertake groundbreaking research in numerous areas. For example, genomics is offering new opportunities for exploring biodiversity. To be successful, biodiversity genomics requires a set of cutting-edge genetic technologies such as next-generation sequencing. Similarly, the Institution's efforts in materials conservation have been greatly enhanced by using highly specialized equipment that has enabled conservators to better identify the age and provenance of artifacts as well as improve the preservation of fragile materials. Investing in equipment and maintenance

contracts will allow the Smithsonian to better leverage its collections and expertise in these important areas of research.

MEANS AND STRATEGY — INFORMATION RESOURCES MANAGEMENT POOL (\$3,187,000)

Digitization funding directly supports the Smithsonian’s ambition to serve a national and international audience online, offering open 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 capture some of the Institution’s most commonly held collection materials will help establish an infrastructure for standardized high-throughput digitization that brings the Smithsonian one step closer to sharing its vast collections with the world. Therefore, this funding supports the Smithsonian’s mission for the “diffusion of knowledge.”.

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

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

MEANS AND STRATEGY — LATINO INITIATIVES POOL (\$5,000,000)

To achieve the strategic goals of Enhancing Interdisciplinary Research and Understanding and Impacting 21st Century Audiences, the Latino Initiatives Pool (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 \$32.6 million in funding to more than 560 Smithsonian programs and projects.

In addition, the Latino Curatorial Initiative has supported 10 Latino curators and eight curatorial assistants at various Smithsonian units. The Initiative was designed to increase Latino representation and scholarship at the Smithsonian. Furthermore, the expanded funding of the LIP has broadened the Smithsonian’s outreach efforts nationwide. This includes an increased number of traveling exhibitions, public and educational programs, and institutional partnerships. These funds ensure that Smithsonian content is available to

more visitors throughout the country and the world, including audiences using digital platforms.

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

The Smithsonian is also working toward opening the first exhibition and public program space in the National Museum of American History dedicated to the U.S. Latino experience. With a major gift from the Molina family and other private donors, along with LIP funding, this 4,500-square-foot gallery is scheduled to open in the fall of 2021. The Molina Family Latino Gallery will present stories of discovery, identity, migration, innovation, entrepreneurship, and success to millions of diverse, intergenerational visitors.

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

Collections stewardship is a key component and core priority of the Smithsonian's Strategic Plan. Assembled throughout the Institution's history, Smithsonian collections are fundamental to carrying out the Institution's mission and serve as the intellectual base for scholarship, exhibition, and education.

Currently, Smithsonian collections total 155 million objects and specimens; 162,300 cubic feet of archives; and 2.1 million library volumes that include irreplaceable national icons, examples of everyday life, and scientific material vital to the study of the world's natural and cultural heritage, covering subjects from art to zoology. The proper stewardship of the collections is essential to the nation's research and education infrastructure, enabling researchers to address such significant challenges as the spread of invasive species and the loss of biological and cultural diversity and its impact on global ecosystems and cultures.

To achieve the strategic goal of Preserving Our Natural and Cultural Resources, the CCPF provides essential resources to make targeted improvements in the accountability, documentation, care, preservation, storage, and accessibility of the Smithsonian's vast and diverse collections. With this funding, the Smithsonian continues to strategically address important Institution-wide collections care needs in a pragmatic and systematic manner, based on sound collections assessment data, innovative collections care methodologies, economies of scale, and project-driven activities, including collections moves, re-housing, and digitization. Smithsonian senior leadership acknowledges that an effective strategy for addressing our shared collections challenges depends on a coordinated, Institution-wide approach. Holistic collections-level management has enabled comprehensive

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

Collections Physical and Digitization Assessments

In FY 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 limited 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 to biomaterials, in the most efficient and cost-effective manner possible.

The NCP has strategically directed central collections care resources to specific collections across the Institution to improve substandard aspects of collections care to an acceptable level and meet professional standards. Working closely with the DPO, the NCP has provided essential resources to support the collections care activities required for the success, efficiency, and completion of numerous DPO-supported, unit mass-digitization projects. In addition, these funds have enabled staff to correct specific collections management deficiencies identified in the Smithsonian's Inspector General audit recommendations; facilitate collections moves from substandard facilities and conditions; replace obsolete, substandard storage equipment; support the management and preservation of the Smithsonian's cryo-collections; improve the preservation and management of time-based media, digital art, and audiovisual collections across the Institution; and strengthen Institution-wide collections emergency management and professional development.

Collections Space Planning

In FY 2015, the Smithsonian completed a multi-year, Institution-wide collections space planning initiative, culminating in the Collections Space Framework Plan (CSFP), that included 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, storage equipment, accessibility, environmental conditions, security, and fire safety. The CSFP includes recommendations and a 30-year implementation plan for addressing current and projected pan-Institutional collections space requirements in a strategic, integrated, and collaborative manner. The plan is a road map to guide short- and long-term facilities, real estate, and collections care project decisions, and provides renovation and 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 reliance on leased space for collections storage.

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

The Smithsonian has robust Institution-wide data on the national collections, their physical condition, state of digitization, and current collections space conditions. When combined, this information provides key tools and direction for improving the management, care, and accessibility of Smithsonian collections. In FY 2021, the Smithsonian will continue to build on collections initiatives and strategically address the preservation, digitization, and storage space needs of collections, based on the results of the Institution-wide physical and digitization collections assessments and collections space survey.

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

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

Projects are selected on a competitive basis from proposals that demonstrate effective deployment of the pool funds, coordination with other Smithsonian resources, and successful external fund raising from the private sector. Since its inception in FY 2016, the APAIP has provided funding to more than 40 Smithsonian programs and projects, and increased the Asian Pacific American presence in the Smithsonian's presentation of and research into the American Experience. In FY 2018, the APAIP supported its first curator dedicated to Asian Pacific American History at the National Museum of American History. With the additional funding provided in FY 2020, the pool will be able to provide funding to more projects and contract for two curatorial assistants.

MEANS AND STRATEGY — AMERICAN WOMEN'S HISTORY INITIATIVE POOL (\$5,000,000)

The American Women's History Initiative (AWHI), first funded by Congress in FY 2018, will heighten the public's knowledge and appreciation of the transformational role

women have played in constructing our national identity and culture. The Smithsonian Institution, through AWHI, will: (1) magnify the contributions of women through exhibitions, programs and educational content; (2) increase the representation of women online by building on the Institution's trusted resources; (3) hire curators committed to amplifying American women's history; and (4) expand the national collection, both online and on site, to better portray how women have shaped this country. The Smithsonian Institution is partnering with public and private entities to secure funding for its outreach and impact. In FY 2019, the Institution established a national advisory committee to play a key role in shaping the initiative and securing resources for representing the constituencies and stakeholders of the AWHI. The FY 2020 appropriation included an additional \$3 million to expand the AWHI and to amplify women's history for local, national, and international audiences.

In FY 2019, the American Women's History Initiative launched the March opening of the *Votes for Women: A Portrait of Persistence* exhibit at the National Portrait Gallery (NPG). AWHI funds continued to support the development of *Girlhood: It's Complicated*, which is scheduled to open in 2020 at the National Museum of American History and then tour the nation. In FY 2019, AWHI funds also supported exhibits such as *Tiffany Chung: Vietnam, Past Is Prologue* at the Smithsonian American Art Museum, and *Reforestation of the Imagination* at the Renwick Gallery. AWHI-funded curators worked across the Institution, and AWHI teams launched an ambitious digital strategy and identified key technology industry partners to better serve target audiences. This includes outreach to middle-school students, college students, and women and girls of color.

In FY 2020, the Smithsonian Institution continues to support and hire curators, promote research and education, and fund digital pool awards with federal allocations. We anticipate a new acquisitions fund to help collecting units purchase important historical objects, personal papers, and works of art relating to American women's history. We also plan to inaugurate an exhibitions pool to fund research for new women-centric exhibitions and expand the women's history content of exhibitions already in the planning stages. With these funds, we plan to support the NPG's new exhibition about First Ladies, which is scheduled to open later this year.

Presently and into FY 2021, the goal for the AWHI program includes continued private/federal partnership. With the combination of federal and non-federal funds, we have hired a women's history digital content coordinator, who will generate online stories and narratives around key Smithsonian objects, and we anticipate hiring a data scientist to provide a more sophisticated analysis of our collections data around women's history. We will use trust funds to hire a director to oversee the American Women's History Initiative. Lastly, the AWHI Education and National Access Committee will continue to implement the *#Because of Her Story* internship program while developing programming and tools for audiences ranging from early learners through undergraduates.

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 2019 ENACTED	28	3,169	19	394	0	0	0	0
FY 2020 ENACTED	28	3,169	17	276	0	0	0	0
FY 2021 REQUEST	28	3,308	17	276	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		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	2,698	0	119
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	4	590	4	610	0	20
Total	28	3,169	28	3,308	0	139

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 exhibit development, design, refurbishing, signage, acrylic casing, cabinetry, model making, crating, and artifact mounting.

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

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

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

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

The FY 2021 budget request includes \$139,000 for necessary pay and other related salary costs for existing staff.

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 plans, designs and produces approximately 100 projects, large and small, for almost every office and museum in the Smithsonian.

In FY 2021, 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 planning, design, 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 the SIE to share 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 planning, design, and production of museum 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 in the field of exhibition design and production.

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

MUSEUM SUPPORT CENTER

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2019 ENACTED	18	1,906	0	1	0	0	0	0
FY 2020 ENACTED	18	1,906	0	1	0	0	0	0
FY 2021 REQUEST	18	1,967	0	1	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		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	1,967	0	61
Total	18	1,906	18	1,967	0	61

BACKGROUND AND CONTEXT

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

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

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

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

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

The FY 2021 budget request includes \$61,000 for necessary pay and other related salary costs for existing staff funded under this line item.

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 2021 funding will be used to further enhance pest management, improve storage of hazardous collection materials, and assist museum staff in improving storage of collections at MSC. Additionally, with base funding the MSC will focus on integrating collections support and shipping functions. Shipping has become more complex and dynamic with the fast expansion of e-commerce, international sanctions, customs and duties changes, and security threats to transportation systems. Irreplaceable objects are often received or sent out through loan programs. The integration of collections support and shipping staff will allow the Smithsonian to mitigate risks to the collections and museums by ensuring compliance with both national and international rules and regulations, including oversight of prohibited items.

In FY 2021, MSC staff will continue to support maintenance of the national collections and the research equipment needed to protect staff and collections, including projects to upgrade old environmental control systems for collections spaces. In addition, the MSC staff will support Smithsonian Facilities to replace aging HVAC equipment and do a comprehensive study of the electrical infrastructure. Both projects will improve and update support systems and laboratory spaces at the facility. Staff will continue to work on space reallocations and collections improvement projects.

MUSEUM CONSERVATION INSTITUTE

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2019 ENACTED	22	3,359	0	74	4	598	0	0
FY 2020 ENACTED	22	3,359	0	58	3	634	0	0
FY 2021 REQUEST	22	3,503	0	4	3	477	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	7	1,140	7	1,180	0	40
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	1	123	1	133	0	10
Understand and Impact 21st Century Audiences						
<i>Public Programs</i>						
Provide relevant reference services and disseminate information to the public	1	157	1	163	0	6
<i>Education</i>						
Engage and inspire diverse audiences	1	106	1	108	0	2
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	8	1,145	8	1,212	0	67
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	4	688	4	707	0	19
Total	22	3,359	22	3,503	0	144

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.

The FY 2021 budget request includes \$144,000 for necessary pay and other related salary costs for existing staff funded under this line item.

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 2021, 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 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 achieve 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 online 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 endangered irreplaceable world cultural heritage, and efforts require consistent support to help the local citizenry recover from the destruction wrought by ISIS and ensure that these treasures are safe and preserved. Currently, an interagency agreement with the Department of State and other grants are supporting salvage and recovery at the important archaeological site of Nimrud and other major cultural heritage sites in Iraq. The Smithsonian continues raising additional funds for operations and expanded programs at the Iraqi Institute. Given adequate support, the Institute can become a regional center to educate the local population in the preservation of cultural heritage.

To achieve the strategic goal to Preserve Our Natural and Cultural Heritage, the MCI will support Smithsonian museums and research centers in their efforts to improve stewardship and scholarship of the national collections and will disseminate collections information to the larger museum community and the public. To this end, MCI is chairing the new committee, Council of Conservators and Conservation Scientists, that seeks to share best practices, current research, and laboratory facilities and equipment across the Institution. In addition, 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 Institute 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 co-chairing the Smithsonian Collections Space Committee's new preservation

environments subcommittee and participating in the PRICE team, the MCI supports the development of best practices in collections care across the Institution. Through continued development of the 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 working with the Institution's employees, Fellows, interns, volunteers, and vendors. The MCI will also 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 \$300,000. The funds generated by the endowment will remain in the MCI budget to strengthen conservation science research.

SMITHSONIAN LIBRARIES AND ARCHIVES

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2019 ENACTED	115	14,258	15	2,539	7	1,551	0	0
FY 2020 ENACTED	115	14,458	16	2,538	8	1,611	0	0
FY 2021 REQUEST	115	15,292	16	2,584	8	1,692	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in impactful scientific research and discovery	20	3,298	20	3,457	0	159
Engage in vital arts and humanities research	26	3,253	26	3,442	0	189
Expand Digital Technologies						
Digitization and Web Support						
Provide improved digitization and Web support	18	2,151	18	2,284	0	133
Understand and Impact 21st Century Audiences						
Exhibitions				0		
Offer compelling, first-class exhibitions	1	109	1	117	0	8
Education						
Engage and inspire diverse audiences	1	105	1	113	0	8
Public Programs						
Provide relevant reference services and disseminate information to the public	5	431	5	459	0	28
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	33	3,459	33	3,689	0	230
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	11	1,652	11	1,731	0	79
Total	115	14,458	115	15,292	0	834

BACKGROUND AND CONTEXT

The Smithsonian Libraries and Archives (SLA) was formally established with the approval of Congress in FY 2020 through the integration of Smithsonian Libraries and Smithsonian Institution Archives. FY 2021 will provide the opportunity to fully integrate the operations of the two units under a unified budget and leadership operations. The creation of SLA is a timely opportunity to develop a new organization with redefined priorities to better help the Smithsonian meet existing and new challenges.

The SLA serves as the institutional memory of a unique cultural organization and is responsible for ensuring institutional accountability. SLA's archival collections document the history of the Smithsonian, from its founding in 1846 to the present, and support the Smithsonian community, scholars, and the public by acquiring, evaluating, and preserving the records of the Institution and related documentary materials. Accordingly, SLA manages the care, storage, and retrieval services for the Institution's records in a wide variety of analog and digital formats. These permanent records are safeguarded and preserved in leased, specialized environments in facilities in Washington, DC; Landover, Maryland (Pennsy); and Iron Mountain in Boyers, Pennsylvania. Additionally, research library collections are held in the SLA's network of libraries from the Republic of Panama to New York City.

The library research collections play a dynamic role in advancing scientific and cultural understanding. Collections acquired and managed by SLA on behalf of Smithsonian researchers provide them with the resources and infrastructure needed to participate in the cycle of scholarly communication. SLA develops policies, provides guidance for managing and preserving the Institution's vast archival collections, and offers a range of reference, research, and record-keeping services. The expert staff who manage and preserve these collections are a crucial resource for research and education communities at the Smithsonian, within the United States, and around the world.

The FY 2021 budget request includes an increase of \$834,000 for necessary pay and other related salary and administration costs.

MEANS AND STRATEGY

The core activity for FY 2021 will be to fully integrate the two existing units into the combined Smithsonian Libraries and Archives. Under the guidance of a new director of SLA, the integration strategy will incorporate the following areas:

- **Finance and Administration.** The combined SLA will leverage and extend existing financial resources for maximum value to the Smithsonian. Streamlining financial services and providing Smithsonian administrators with clear spending plans and resource needs will clarify SLA finances.

The SLA administration will develop and sustain a skilled and engaged workforce that can succeed and thrive in an ever-changing environment; it will nurture and foster the development of talented archivists, librarians, and staff as well as develop an organizational culture of innovation, service, and collaboration.

- **Digital Infrastructure.** In addition to re-factoring and envisioning a combined sustainable digital infrastructure to support SLA collections and services, the SLA digital infrastructure will grow to support expanding modes of research, scholarly communication, and public outreach. Key areas will include linked data systems and services which will help connect Smithsonian museum collections with SLA collections, research data management programs, and digital preservation. SLA will participate in the Smithsonian Open Access Initiative.
- **Collections.** Both library and archives collections have long been a core component of scholarly research and knowledge creation. The scholarly communications cycle remains firmly based in library and archival research collections even while those collections are increasingly moving to a digital and online environment. Legacy physical library and archives collections will remain an important component of the overall Smithsonian culture and means of conducting deeper research. The official records of the Institution under the stewardship of trained archivists provide depth to Smithsonian history as well as fulfill legal requirements. SLA will build on and establish new processes and support structures to ensure we can select, acquire, preserve, and provide access to the full spectrum of research materials.
- **Education and Internships.** SLA will expand its current engagement across the Smithsonian's broader K–12 educational initiatives and continue expanding service to the unit-level education departments as well as support central Smithsonian education programs. Existing SLA internship programs will benefit from central SLA program management, and SLA will expand the diversity of the intern community and aspire to 100 percent funding of all internship opportunities.
- **Internal Management and Relationship Building.** SLA will build upon the collaborative environment found at the Smithsonian to continue to introduce staff across the Institution to relevant data sets and digital tools and services. SLA will foster enhanced communication between technology staff inside the SLA as well as across the Smithsonian. There will also be renewed efforts to streamline and develop more effective

communication about the array of services offered to different stakeholders.

- **External Collaborations.** SLA will build on existing national and global networks to promote Smithsonian resources for the public and the scholarly community. Robust involvement with organizations such as the Digital Public Library of America, the Society of American Archivists, the Biodiversity Heritage Library, the Coalition for Networked Information, Wiki-data information, and others promote not just SLA collections and services but provide a gateway for the Smithsonian to reach a broader community. SLA will build on existing tools (e.g., Smithsonian Research Online and Smithsonian Profiles) as well as relationships with federal agencies (and libraries) around such topics as open science and public access to federally funded research and data.

NONAPPROPRIATED RESOURCES — General trust funds help defray the costs of providing archival and information services to Smithsonian units, support outreach (including publications, social media, and public programs), and fundraising efforts. The funds also support the work to manage and preserve the collections of the Institution and efforts to provide professional conservation expertise throughout the Smithsonian, to other institutions, and to the public. In FY 2021, SLA will continue to raise funds through its own advancement efforts. The even deeper cataloguing of collections and compelling stories provided by the combined SLA will provide further advancement opportunities. SLA 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 2019 ENACTED	105	52,509	18	4,022	1	225	0	0
FY 2020 ENACTED	107	54,447	18	3,681	0	0	0	0
FY 2021 REQUEST	107	56,110	18	3,681	0	350	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
<i>Research</i>						
Engage in impactful scientific research and discovery	4	1,648	4	1,681	0	33
Expand Digital Technologies						
<i>Digitization and Web Support</i>						
Provide improved digitization and Web support	15	4,720	15	4,844	0	124
Preserve Our Natural and Cultural Heritage						
<i>Collections</i>						
Improve the stewardship of the national collections	11	2,653	11	2,744	0	91
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	10	1,917	10	2,000	0	83
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	23	12,806	23	12,997	0	191
<i>Information Technology</i>						
Improve the Institution's information technology systems and infrastructure	44	30,703	44	31,844	0	1,141
Total	107	54,447	107	56,110	0	1,663

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 2021 budget request includes an increase of \$1,663,000. The increase includes \$887,000 for necessary pay and other salary-related costs for existing staff, and an increase of \$776,000 to cover higher communication costs, which are both 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, Greater Reach, Greater Relevancy, and Profound Impact. The OCIO collaborates with industry partners, cultural organizations, academia, and the public to develop innovative solutions for research and digitization challenges, and to realize the vision of creating a Virtual Smithsonian.

The following strategies are cross-cutting and central to the Smithsonian’s strategic plan and mission of connecting Americans to their history and heritage, as well as to promote innovation, research, and discovery in science:

- Leverage commercially available and open-source technologies to provide digital platforms for the Institution to increase public access to digitized collections and research data;
- Use state-of-the-art, secure information systems to modernize financial, human resources, facilities management, collections, education, and research processes;
- Replace network equipment, servers, desktop computers, and scientific workstations on an industry best practice life cycle to increase reliability and improve the security of information systems and the data that they contain;
- Maintain and enhance the Institution’s telecommunications infrastructure to provide reliable, secure, and cost-effective voice and data communications systems that support Smithsonian missions;
- Meet federal requirements for providing timely and accurate financial information;
- Increase the use of data science and artificial intelligence to drive innovation in research and collections management in a cost-effective manner;
- Invest strategically in creating a standard mass-digitization process that enables replicable, cost-effective, high throughput, and high-quality 2D digitization for all Smithsonian priority collections. Digitization efforts to implement this process have resulted in digital images for 3.8 million collection objects to date, thereby doubling the rate of digitization at the Smithsonian;
- Develop automation processes to scale up our 3D digitization efforts while ensuring that our 3D data models remain durable over time; and
- Continue to improve and refine the Institution’s IT Security Program.

NONAPPROPRIATED RESOURCES — General trust funds support salaries and benefits costs of personnel and other related costs of the OCIO. Donor/sponsor-designated funds cover costs related to some 3D digitization projects and a portion of the biennial Digitization Fair that opened to the public for the first time in FY 2017.

ADMINISTRATION

	APPLICATION OF OPERATING RESOURCES							
	FEDERAL APPROPRIATIONS		GENERAL TRUST		DONOR/SPONSOR DESIGNATED		GOV'T GRANTS & CONTRACTS	
	FTE	\$000	FTE	\$000	FTE	\$000	FTE	\$000
FY 2019 ENACTED	189	36,255	205	44,752	12	10,771	2	604
FY 2020 ENACTED	198	36,924	213	45,717	19	9,859	2	670
FY 2021 REQUEST	202	38,714	217	46,748	26	11,149	2	675

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enhanced Interdisciplinary Research						
Research						
Engage in vital arts and humanities research	0	0	0	0	0	0
Exhibitions						
Offer compelling, first-class exhibitions	0	0	1	150	1	150
Education						
Engage and inspire diverse audiences	1	398	4	909	3	511
Preserve Our Natural and Cultural Heritage						
Collections						
Improve the stewardship of the national collections	3	494	3	514	0	20
Enable Cost-Effective and Responsive Administration						
Management Operations						
Enable efficient and responsive administrative infrastructure	194	36,032	194	37,141	0	1,109
Total	198	36,924	202	38,714	4	1,790

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 Deputy Secretary/Chief Operating Officer, the Under Secretary for Museums and Culture, the Under Secretary for Science and Research, the Under Secretary for Education, and Under Secretary for Administration. Other central activities include human resources, diversity, financial and contract management, and legal services.

The FY 2021 budget request includes an increase of 4 FTEs and \$1,790,000. This includes \$1,140,000 for necessary pay and other related salary costs for existing staff funded under this line item and \$650,000 and 4 FTEs for programmatic increases.

MEANS AND STRATEGY

The Smithsonian will continue to use best practices in management to enhance its mission for the “increase and diffusion of knowledge” and to achieve the Institution’s goals while translating James Smithson’s 19th century vision into a modern 21st century reality. The following strategies are cross-cutting and central to performing the Smithsonian’s mission and also help promote innovation, research, and discovery:

- Ensure the financial strength of the Smithsonian and provide the Institution with effective and efficient financial, contracting, and management support services, including reliable financial evaluation, auditing, and reporting.
- Provide oversight of the Smithsonian budget process as it is developed and executed to support the operating and facilities capital programs of the Institution, establish and enforce budgetary policies and procedures, and ensure that sufficient resources enable the Institution to achieve its goals.
- Conduct a comprehensive enterprise risk-management program to identify, monitor, and mitigate risk at all levels.
- Provide leadership and guidance for Institution-wide collections initiatives, policies, and programs to ensure the proper stewardship of the national collections.
- Support the Institution’s Board of Regents and its committees.
- Develop and implement necessary internal controls as recommended by the Board of Regents’ Governance Committee, which involves strengthening non-collections property management and meeting increased demands for acquisition of goods and services.
- Provide legal counsel to the Board of Regents and the Institution on issues such as museum administration, intellectual and real property, collections management, contracts, privacy and cyber security, finance, employment, ethics, conflicts of interest, international agreements, and requests for information.
- Manage human resources, foster diversity, hire a skilled workforce in a timely manner, and align human capital with the Institution’s goals and performance objectives. Conduct ongoing workforce and performance gap analyses, strengthen training and leadership policies and programs, develop succession planning, and evaluate and improve assessment tools for human resources performance.

- Provide leadership and oversight for all policies, programs, and activities of the Institution's museums and research centers by attracting, recruiting, and retaining leaders with superior talent.
- Provide leadership, support, and resources to enable educators across the Smithsonian to share the depth and breadth of the Smithsonian's collections and research; connect with diverse audiences; invite dialogue and exchanges; and build on and contribute to best practices in teaching and learning.
- Increase the Latino Center's public and educational outreach in collaboration with Smithsonian units and affiliated institutions by developing exhibitions and programs on Latino history, art, culture, and scientific achievement; support Latino research, collections, exhibitions, publications, online content, and related projects; promote professional development opportunities for Latino youth leaders, emerging scholars, and museum professionals; continue innovation in new media, including the Latino Virtual Museum, social media, mobile applications, and educational games; and continue developing a Smithsonian Latino Gallery at the Arts and Industries Building.
- Support the Smithsonian's commitment to teaching Americans about their rich heritage by increasing the capacity and resources of the Asian Pacific American Center (APAC) to produce exhibitions and programs on Asian Pacific American history, art, and culture; continue innovative online initiatives that provide educational, programmatic, and outreach materials nationwide; and form national partnerships with museums and research centers to enrich the Smithsonian's collections, research, and activities relating to Asian Pacific Americans.
- Establish and maintain partnerships with the various Administration agencies and initiatives related to underrepresented groups, such as Asian Americans and Pacific Islanders, Hispanic Serving Institutions, Historically Black Colleges and Universities, the American Association of University Women, and Tribal Colleges and Universities, and perform the necessary public outreach to enhance the Smithsonian presence in these communities.
- Coordinate efforts among the Secretary's executive diversity committee, Office of Human Resources, and Office of Equal Employment and Minority Affairs to ensure compliance with federal Equal Employment Opportunity Commission mandates, promote the Smithsonian's Equal Employment Opportunity (EEO) and workforce diversity policies, (in accordance with Smithsonian Directive [SD] 214, Equal Opportunity Program), and advocate for the use of small, disadvantaged, woman- and veteran-owned businesses throughout Smithsonian procurement operations (in compliance with the recently revised SD 216, Supplier Diversity Program).

EXPLANATION OF CHANGE

The FY 2021 budget request includes a programmatic increase of 4 FTEs and \$650,000 as described below:

Asian Pacific American Center (APAC) (+\$150,000, +1 FTE) — The Smithsonian has a long tradition of raising private funds to design and install new exhibitions. For generations, these exhibitions have been the reason why millions of visitors have come to the National Mall. However, the Institution requires federal funding to manage these exhibits and to leverage the private funding necessary to install and maintain these exhibitions. The APAC requires additional resources to continue to expand the Asian Pacific American presence in the Smithsonian's presentation of and research into the American experience.

Office of the Under Secretary for Education (+\$500,000, +3 FTEs) — The Smithsonian has a long history of being a trusted educational resource. The Institution provides authentic and inspiring science, technology, engineering, art, and mathematics (STEAM) experiences for teachers and students by drawing on the scientific and engineering assets of the federal Government, including scientists, laboratories, satellites, museums, and research centers. Accordingly, the Smithsonian plans to translate our nation's treasures and stories through digital technology and cultivate the next generation of STEAM and history learners by sharing high-quality education content aligned with national education priorities. As we continue to make new discoveries, we must share them with future generations. The Institution is dedicated to ensuring we are a national leader in K–12 education, bringing the research and collections of the Smithsonian into classrooms across the nation through comprehensive, standards-aligned programming. Educational materials based on our science and scholarship can profoundly affect how students and teachers engage in 21st-century learning.

In addition, with the leveraging of private funds, the Institution plans to develop a model of the future of education and museums, through a collaboration with the Washington, DC public school system. Sharing that work nationwide and abroad while drawing on best practices and lessons learned will expand our impact and help us make the most effective use of our resources.

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 2019 ENACTED	24	3,538	0	0	0	0	0	0
FY 2020 ENACTED	27	4,077	0	0	0	0	0	0
FY 2021 REQUEST	27	4,231	0	0	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Enable Cost-Effective and Responsive Administration						
<i>Management Operations</i>						
Enable efficient and responsive administrative infrastructure	27	4,077	27	4,231	0	154
Total	27	4,077	27	4,231	0	154

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. Furthermore, the Act requires the Inspector General to transmit a budget submission specifying the aggregate amount of funds requested for the operations of the OIG, including the amount needed to satisfy training requirements, as well as any resources necessary to support the Council of the Inspectors General on Integrity and Efficiency (CIGIE).

The FY 2021 budget request includes \$154,000 for necessary pay and other related salary costs for existing staff funded under this line item.

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.

This request includes \$60,000 for required training, and \$14,000 needed to support the CIGIE.

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 Smithsonian stakeholders and Congress. The audit plan also includes mandatory audits, such as the annual financial statement audits that the OIG oversees.

The Office of Investigations pursues allegations of waste, fraud, abuse, gross mismanagement, employee and contractor misconduct, and criminal violations of law that have an impact on the Smithsonian's programs and operations. It refers matters to federal, state, and local prosecutors for action whenever the OIG has reasonable grounds to believe there has been a violation of criminal law. The Office of Investigations also presents any evidence of administrative misconduct to Smithsonian senior management for appropriate 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 2019 ENACTED	483	79,545	0	0	0	0	0	0
FY 2020 ENACTED	492	114,545	0	0	0	0	0	0
FY 2021 REQUEST	492	115,999	0	0	0	0	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		Change	
	FTE	\$000	FTE	\$000	FTE	\$000
Preserve Our Natural and Cultural Heritage						
Facilities and Safety						
Deliver an aggressive and professional maintenance program	486	106,768	486	108,182	0	1,414
Security						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	6	7,777	6	7,817	0	40
Total	492	114,545	492	115,999	0	1,454

BACKGROUND AND CONTEXT

The Facilities Maintenance program is responsible for the maintenance and repair of the infrastructure of just under 14 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 680 buildings and structures range from historical, one-of-a-kind landmarks and well-known museums to critical research and state-of-the-art laboratories that support global efforts to save wildlife species from extinction and ensure long-term and cutting-edge ecological research. The primary role of Facilities Maintenance is to identify and manage facility reliability risks that could adversely affect the Institution's operations, and preserve and conserve our national treasures. This broad role can be divided into three smaller, more manageable roles: system downtime elimination, risk management, and system (or asset) life-cycle management. The goal is to prevent failure and ensure full functionality of essential systems and maximize their useful life cycle.

The Facilities Maintenance program 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 program also maintains

systems related to electronic security, screening equipment, radio systems, and perimeter barrier equipment. The mission of Smithsonian Facilities (SF) is to provide world-class services and stewardship by building, operating, maintaining, and ensuring a safe, secure, and healthy environment to enhance the Smithsonian experience for all visitors. The Smithsonian attracts about 25 million visits annually.

As new and renovated museum and research center spaces open, maintenance requirements rise due to increased square footage, technological advances, and the growing number of infrastructure-supporting systems. For example, with the opening of the National Museum of African American History and Culture and the full renovation of the Renwick Gallery of Art, the total number of assets requiring periodic maintenance increased to more than 22,000. These new assets added new functionality, new technology, and a new, more complex level of maintenance requirements.

SF 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." In a "Showpiece Facility," equipment and building components are fully functional and in excellent condition, service and maintenance calls are responded to immediately, and buildings and equipment are regularly upgraded, keeping them current with modern standards and usage.

According to the National Research Council (NRC), "an appropriate budget allocation for routine Maintenance and Repair for a substantial inventory of facilities will typically be in the range of 2 to 4 percent of the aggregate current replacement value (CRV) of those facilities." The CRV for the Smithsonian is \$8.77 billion, including the National Museum of African American History and Culture. With this budget request, the Institution's maintenance budget would be at \$116 million.

With the increased funding received in the FY 2020 enacted appropriation, substantial improvements are being made in addressing the deferred maintenance backlog. The FY 2021 budget request will sustain this increased level of maintenance funding. Although the maintenance budget is below the two percent recommended CRV level, the total FY 2021 maintenance funding, along with the Facilities Capital request, will enable the Institution to continue to make progress in addressing the maintenance backlog issue.

The FY 2021 budget request includes an increase of \$1,454,000 for necessary pay and other related salary costs for existing staff.

MEANS AND STRATEGY

To support the Institution's strategic goal to Preserve Our Natural and Cultural Heritage, SF continues an aggressive, long-range facilities maintenance and repair program, using the reliability-centered maintenance (RCM) approach, which is a widely accepted industry philosophy that incorporates a cost-effective mix of predictive, proactive, preventive, and reactive maintenance practices. With existing resources, the Smithsonian will operate at the lower end of APPA's maintenance Level 3 "Managed Care," which provides a minimal level of preventive maintenance and building system reliability to ensure that proper environmental conditions are maintained for collections and public expectations are met.

The Smithsonian's goal is to reduce its maintenance backlog, currently estimated at \$1.02 billion, 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 frequency and cost of major repairs. Through proper preventive maintenance, the Institution can address deficiencies in a timely manner and realize the originally anticipated useful life of facility systems and avoid the accelerated degradation of its infrastructure. The amount of deferred maintenance backlog is directly related to the rate of deterioration expressed as a percentage of CRV per year according to *A Framework for Facilities Lifecycle Cost Management*, a standards document created by a committee of representatives of the National Association of State Facilities Administrators, the Association of Higher Education Facilities Officers/APPA, the Federal Facilities Council, and the International Facility Management Association. The document further states, "while degradation rates vary as a function of multiple variables such as building type, current conditions, geographic location..., a benchmark deterioration rate for a well-maintained facility is approximately 2.5 percent per annum." The average degradation rate for Smithsonian facilities from 2014 to 2018 was 5.8 percent, more than double the "well-maintained facility" rate.

The deferred maintenance backlog poses a risk to our most prized national treasures. Environmental conditions such as temperature, humidity, and water intrusion are the Smithsonian's most important facilities management issues. The Institution's top three systems with the highest deferred maintenance backlog are roofs, exterior, and HVAC, which are essential systems for controlling temperature, humidity and water intrusion.

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. With the increased funding level for FY 2020 and FY 2021, the Institution can make progress in addressing the top priorities listed above.

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 2019 ENACTED	1,286	230,248	18	3,165	2	334	0	0
FY 2020 ENACTED	1,286	236,163	20	2,843	2	355	0	0
FY 2021 REQUEST	1,286	242,697	20	2,890	2	280	0	0

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2020		FY 2021		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	601	151,593	601	155,376	0	3,783
<i>Security</i>						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors and volunteers	681	84,096	681	86,847	0	2,751
Total	1,286	236,163	1,286	242,697	0	6,534

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 millions of visitors 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 2021 budget request includes an increase of \$5,205,000 for necessary pay and other related salary costs for existing staff, and a net increase of \$1,329,000 for utilities and other costs, which is justified in the Fixed Costs section of this budget submission.

MEANS AND STRATEGY

SF will pursue the Institution's strategic goal to Understand and Impact 21st Century Audiences by continuing to develop exhibits and public programs for horticulture, architectural history, and historic preservation.

To support the Institution's strategic goal to Preserve Our Natural and Cultural Heritage, OSS base resources will focus on meeting the growing operational requirements of the Institution's facilities. SF will continue to effectively and efficiently use resources to operate and secure facilities and grounds, and to provide safe, attractive, and appealing spaces to meet program needs and public expectations. In addition, SF will continue benchmarking the Institution's custodial staffing and service levels with other museums and professional organizations, including Leadership in Educational Facilities (referred to as APPA). SF is committed to measuring performance and staffing levels to ensure that the highest affordable levels of cleanliness, as well as efficient operations, are maintained.

The Institution is committed to achieving APPA's appearance Level 2 (out of 5) cleaning standard, referred to as "Ordinary Tidiness." This level of appearance will provide an acceptable level of cleanliness that meets public expectations. With current resources, on average, SF achieves appearance Level 3, "Casual Inattention." This level of appearance ensures a generally clean and odorless environment.

In addition to providing the highest level of facilities care, the Smithsonian is equally committed to maintaining the highest levels of security. In support of that goal, the Institution is continuing a strategic security staffing analysis to determine exactly how many security and law-enforcement staff are needed at each of the Smithsonian's major facilities. The ongoing analysis includes pay levels, training/skill requirements, armed versus unarmed coverage, and the appropriate mix of Smithsonian officers versus contract security guards.

SF continues its commitment to ensure that Smithsonian employees have a safe and healthy workplace by creating a culture that embraces and promotes zero injuries; provides professional services promoting a culture of health and wellness; and ensures that all Smithsonian facilities comply with local building codes, environmental regulations, and management best practices.

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 2019 Enacted	\$303,503,000
FY 2020 Enacted	\$253,700,000
FY 2021 Request	\$290,000,000

Federal Resource Summary by Performance Objective and Program Category

Performance Objective/ Program Category	FY 2019		FY 2020		FY 2021	
	FTE	\$000	FTE	\$000	FTE	\$000
<i>Facilities and Safety</i>						
Improve Smithsonian facilities operations and provide a safe and healthy environment	48	295,003	48	245,200	48	277,250
<i>Security</i>						
Provide world-class protection for Smithsonian facilities, collections, staff, visitors, and volunteers	0	8,500	0	8,500	0	12,750
Total	48	303,503	48	253,700	48	290,000

BACKGROUND AND CONTEXT

The Facilities Capital Program underpins the Smithsonian’s mission and represents an investment in the long-term interest of the nation. It is intended to help the Smithsonian provide modern facilities, often within our country’s national historic and culturally iconic buildings, which satisfy public programming needs, facilitate world-renowned research efforts, and house our priceless national collections.

In the Facilities Capital Program, revitalization involves making major repairs or replacing declining or failed infrastructure to address the problems of advanced deterioration. Once completed, these projects will enable the Smithsonian to avoid the failures in building systems that can create hazardous conditions for visitors and staff, harm animals, damage collections, and cause the loss of precious scientific data.

The Institution uses the National Research Council’s (NRC) Facility Condition Assessments to calculate a Facilities Condition Index (FCI) rating. The FCI is the industry standard for the analysis of the condition of a facility or group of facilities that may vary in terms of age, design, construction methods, and materials. The FCI is calculated by dividing the sum of the deferred maintenance (based on the assessed condition ratings) of eight building systems (roofs, electrical, plumbing, HVAC,

conveyance — i.e., elevators and escalators — interior, exterior, and structure) by the Current Replacement Value (CRV) of the facilities. FCI values of less than 90 percent are considered “poor.” The most recent overall FCI rating for Smithsonian facilities worsened from 88.9 percent in 2017 to 88.4 percent in 2018, remaining in the “poor category.” This percentage is based on an estimated overall CRV of \$8.77 billion and an estimated \$1,021 million value of the Smithsonian’s backlog of deferred maintenance and repair.

The individual FCI of nine of the 11 Smithsonian facility zones has declined. Two facility zones fell from the good to fair category, five remained in the poor category, two remained in the fair category, and two zones are in the good category. The NRC’s recommended goal of “good” is a rating of 95 percent or greater. Accordingly, to reverse a continuing downward trend in the FCI of many essential facilities, reduce the growing backlog of deferred maintenance and capital repairs, and achieve an FCI equal to or greater than 95 percent, so that our national treasures and cultural properties are preserved and enhanced for generations to come, the Smithsonian requests \$290 million for its Facilities Capital Program in FY 2021.

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 \$290,000,000 and 48 FTEs for the Facilities Capital Program in FY 2021. The requested funds will enable the Institution to continue the major renovation project at the National Air and Space Museum (NASM) and begin new major renovation projects needed for the Smithsonian Institution Building (the “Castle”) and the Hirshhorn Museum and Sculpture Garden (HMSG). Revitalization of building systems and infrastructure will continue at the National Zoological Park (NZIP), the National Museum of Natural History (NMNH), the Suitland Collections Center, the Smithsonian Tropical Research Institute (STRI) in Panama, and the Smithsonian Environmental Research Center (SERC) in Edgewater, Maryland. These funds will also continue to address safety and security hazards throughout the Institution.

The following chart summarizes the Institution’s request for the highest priority FY 2021 Facilities Capital projects.

SMITHSONIAN INSTITUTION
Federal Facilities Capital Program Summary
FYs 2019 – 2021

CATEGORY	Federal Enacted	Trust* Estimate	Federal Enacted	Trust* Estimate	Congress Request	Trust* Estimate
REVITALIZATION						
Major Projects						
Arts & Industries Building						10.0
Anacostia Community Museum			0.5			
Cooper Hewitt, Smithsonian Design Museum	2.8				5.1	
Donald W. Reynolds Center	1.0		3.5	1.7	3.5	0.5
Freer Gallery of Art			2.0		2.5	
Hirshhorn Museum and Sculpture Garden		0.7	8.5	0.8	16.3	
National Air and Space Museum	210.0	50.0	135.0	53.3	55.0	60.0
NASM Steven F. Udvar-Hazy Center	10.0		18.4			
National Museum of American History	4.3		3.0		7.9	0.3
National Museum of the American Indian	4.0				7.5	
National Museum of Natural History	3.5		1.5		13.4	0.1
National Zoological Park	15.4	5.0	25.0	7.8	25.0	3.7
Quadrangle			2.0		6.1	
Smithsonian Astrophysical Observatory	0.9		0.8		3.4	
Smithsonian Environmental Research Center	2.0	2.0			5.9	2.7
Smithsonian Institution Building (Castle)	1.5	5.0	1.0	5.0	52.5	25.0
Smithsonian Tropical Research Institute	1.5		1.7	1.0	4.5	0.9
Collections Space & Support Program	7.0	0.5	5.5	0.8	9.0	0.8
Fire-Alarm Panel Replacement and Transfer Switch	4.0		2.0		4.6	
Multiple Site Projects and General Capital Support	18.6		14.0		16.9	2.1
PLANNING AND DESIGN	17.0		29.3		50.9	
TOTAL PROGRAM	303.5	63.2	253.7	70.4	290.0	106.1

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	55,000
Smithsonian Institution Building (Castle)	Revitalize Historic Core	52,500
National Zoological Park (NZN)	Upgrade Living Collections Infrastructure	1,950
	Improve Site Systems and Site Safety	8,300
	Upgrade Fire Protection and Life Safety	4,500
	Improve and Replace Building Envelopes at Great Cat House	2,000
	Improve and Replace Building Systems: Amazonia Elevator	700
	Renew Old Administration Building	3,000
	Improve Long-Term Electronic/Physical Security	<u>4,500</u>
	Total	24,950
National Museum of Natural History (NMNH)	Upgrade Electrical Systems and Components	6,000
	Upgrade Fire-Alarm Panel / Mass-Notification	5,000
	Replace Rotunda Copper Roof	1,000
	Modernize Elevators 32, 33, and 36	900
	Upgrade Electronic Security (Ft. Pierce)	<u>500</u>
	Total	13,400
National Museum of American History (NMAH)	Replace Center Core Finishes and Lighting	3,000
	Replace MXL Fire-Alarm Panels	2,700
	Improve Lower Level Workplace Pilot	<u>2,200</u>
	Total	7,900

Facility	Project	\$000
National Museum of the American Indian (NMAI)	Replace Air-Handling Units (AHUs)-1 through AHU-4 (NY)	5,500
	Replace Fire-Alarm Panels (DC)	<u>2,000</u>
	Total	7,500
Hirshhorn Museum and Sculpture Garden (HMSG)	Replace Roof and Exterior Wall Panels	12,900
	Modernize Elevators	<u>3,400</u>
	Total	16,300
Quadrangle	Refurbish Elevators and Escalator	600
	Quad and Freer Upgrade Electronic Security System	4,500
	Refurbish NMAfA Education Center	<u>1,000</u>
	Total	6,100
Donald W. Reynolds Center (DWRC)	Replace Gallery Lighting	3,500
Smithsonian Tropical Research Institute (STRI)	Galeta, Replace and Improve Facilities (Ph 2)	2,500
	Tupper, Renovate Kitchen and Dining Area	400
	Tupper, Replace and Reinforce Library Roof	300
	Gamboa, Refurbish Santa Cruz Building	<u>1,300</u>
	Total	4,500
Smithsonian Astrophysical Observatory (SAO)	Repair Roads at FLW Observatory (AZ)	800
	Install Emergency Generator Ph 2 (AZ)	600
	Replace PACU at SMA Control Bldg (HI)	<u>2,000</u>
	Total	3,400
Smithsonian Environmental Research Center (SERC)	Consolidate Maintenance Facilities	4,000
	Install Site Infrastructure for Green Village	1,500
	Implement Stormwater Management Campus Plan, Phase 1	<u>400</u>
	Total	5,900
Suitland Collections Center (multiple facilities)	Replace MSC Air-Handling Units (AHUs)	5,000
	Replace MSC Botany Greenhouse	2,000
	Upgrade Garber Fire Protection	1,500
	Consolidate Garber Folklife Containers	<u>500</u>
	Total	9,000
Cooper Hewitt Smithsonian Design Museum (CHSDM)	Repair Miller-Fox Facade	3,000
	Add Exterior Lighting, Power & Accessibility	<u>2,100</u>
	Total	5,100

Facility	Project	\$000
Freer Gallery of Art	Improve Courtyard Accessibility	2,500
Multiple Facilities	Replace Fire-Alarm Panels, Install Transfer Switch	4,650
Multiple Locations	Building projects less than \$1,000,000 and Miscellaneous Repairs	8,900
	Construction Supervision and Administration	<u>8,000</u>
	Total	16,900
TOTAL, REVITALIZATION PROJECTS		\$239,100
Smithsonian Institution Building (Castle) Design Revitalization of Historic Core		27,000
Other Facilities Planning and Design		23,900
TOTAL, FACILITIES PLANNING AND DESIGN		<u>\$50,900</u>
FY 2021 TOTAL REQUEST		\$290,000

REVITALIZATION PROJECTS

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

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$55,000*
<u>PRIOR-YEAR FUNDING:</u>	\$543,000*
<u>FUTURE-YEAR FUNDING:</u>	_____ \$0*
Total	\$598,000*

* Does not include funding in Facilities Planning and Design (\$52 million)

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 \$55.0 million in FY 2021 to fund construction activities, award contract(s) for artifact protection and swing space moves, and to prepare staff swing space.

PROGRESS TO DATE:

The Smithsonian erected a temporary covered walkway around vulnerable portions of the building in January of 2015 to protect pedestrians from falling objects and in case the exterior stone panels should fail. Pre-construction services began in January of 2017 with award of the Construction Manager as Constructor (CMc) contract. Based on the final construction documents, released in January of 2018, the CMc submitted a Guaranteed Maximum Price (GMP) in May of 2018, which was revised in August of 2018 following a series of value engineering proposals and scope clarifications. The construction contract was awarded at the GMP on August 20, 2018 and a notice-to-proceed (NTP) was issued on September 17, 2018. On-site mobilization activities started in the first quarter of FY 2019 and construction activities started in the second quarter of FY 2019. By the fourth quarter of FY 2020, artifacts will be moved out (or protected in place) and construction will be well under way in Zones 1 through 4-South. Construction will be complete in Zones 1 through 4-South by the second quarter of FY 2022. Construction in Zones 4-North through 7 will occur from the second quarter of FY 2022 through the third quarter of FY 2024. The following diagram provides a high-level view of the incremental sequence approach the Smithsonian will undertake throughout the renovation. The Smithsonian intends to keep approximately half of the Museum open during the project, while working on the exterior and interior projects in parallel by zone, as outlined below.

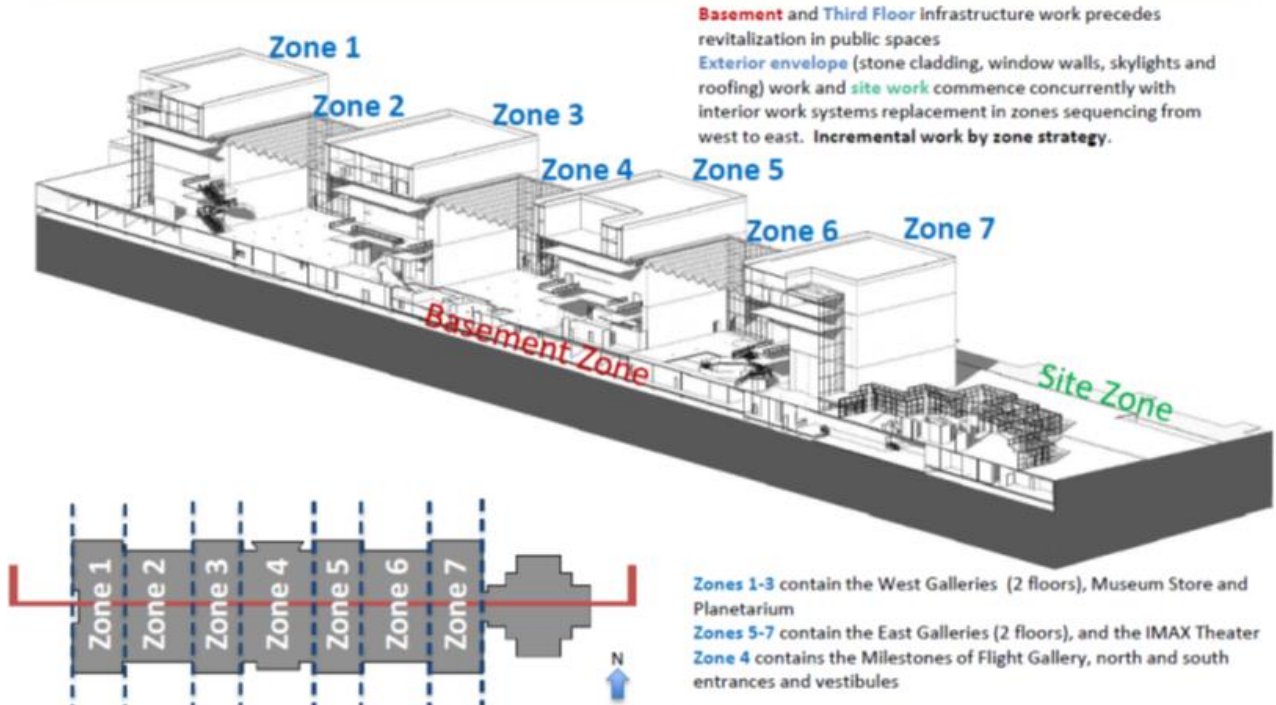
IMPACT OF DELAY:

During phased construction, building systems in zones yet to be renovated will remain open to the public and therefore must stay operational until they are ultimately replaced. If federal funding is delayed, the pace of revitalization work begun in FY 2018 will slow. The 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. Building system breakdowns will become more frequent and unpredictable and will likely result in emergency building closures.

National Air and Space Museum (NASM)

Major Systems / Exterior Envelope Revitalization Project

BUILDING ZONE AND INCREMENTAL WORK SEQUENCE APPROACH



PROJECT TITLE: Revitalize Historic Core
INSTALLATIONS: Smithsonian Institution Building (SIB) and Arts and Industries Building (AIB)
LOCATION: Washington, DC

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$52,500*
<u>PRIOR-YEAR FUNDING:</u>	\$0
<u>FUTURE-YEAR FUNDING:</u>	<u>\$551,500*</u>
Total	\$604,000*

* Does not include funding in Facilities Planning and Design (\$46 million)

BUILDING BACKGROUND:

The Smithsonian Institution Building, often referred to as the “Castle,” is the Institution’s first home and its symbolic heart. The Arts and Industries Building opened in 1881 as the first home of the National Museum. Together, these two buildings make up the Smithsonian’s Historic Core. The Castle has historic architectural and institutional significance and is the public’s doorway to, and the symbol of, the Smithsonian Institution. Both buildings are listed by the Department of the Interior as National Historic Landmarks.

PROJECT JUSTIFICATION:

Both buildings are in need of major revitalization work that will include new heating, air-conditioning, ventilation, electrical, and plumbing systems; and telecommunications, security, and life-safety systems. A goal of the revitalization will be to provide efficient and accessible space for visitors and staff. Public spaces will be restored after years of piecemeal remodeling that has diminished their original proportions and appearance. The last comprehensive refurbishment of the Castle occurred more than 50 years ago. Although the exterior shell of the AIB was revitalized six years ago, the interior is unfinished.

PROJECT DESCRIPTION:

The Smithsonian requests \$52.5 million in FY 2021 to refurbish these historic buildings into world-class facilities. This will include replacing or restoring all building elements and systems, including mechanical, electrical, plumbing, life-safety, security, telephone, and data systems. The Castle windows, roof, and exterior stonework will also be revitalized. Both buildings will be made compliant with modern construction and life-safety codes. Blast and seismic vulnerability will be addressed. A new, underground Central Utility Plant will provide mechanical and electrical infrastructure, and a newly expanded loading facility will improve the efficiency and safety of materials handling on the South Mall Campus.

PROGRESS TO DATE:

Programming was completed in FYs 2019 and 2020. Design was initiated in FY 2020.

IMPACT OF DELAY:

If the project does not move forward, the Castle is at risk of catastrophic systems failure. All staff in the building will be relocated to swing space and the facility will be closed to visitors. The AIB will remain closed to the public.

PROJECT TITLE: Upgrade Living Collections Infrastructure
INSTALLATION: National Zoological Park and Smithsonian Conservation Biology Institute (NZN/SCBI)
LOCATIONS: Washington, DC and Front Royal, Virginia

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$1,950*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$0*</u>
Total	\$1,950*

* Does not include funding in Facilities Planning and Design

BACKGROUND:

Multiple facilities, at both the 163-acre Zoo at Rock Creek Park, in Washington, DC and the 3,200-acre research center in Front Royal, Virginia, have major capital systems renewal needs due to failed and failing living collections infrastructure required to fulfill the mission of the National Zoological Park’s (NZN) endangered species program. These systems are unique and vastly different from systems required for non-living collections found elsewhere within our museum facilities. It is a struggle to keep the facilities current with constantly changing, improving, and evolving animal care codes and standards required to maintain accreditation by the governing body of the Association of Zoos and Aquariums (AZA), and by the United States Department of Agriculture (USDA). Areas and systems requiring work include: improvements to animal habitats and yards; refurbishment of perimeter and interior separation/containment fences and barriers; human/animal safety separation barriers, which include shift gates, chutes, ladders, and dig barriers; predation and invasive species exclusion systems; highly pathogenic avian influenza (HPAI) mitigation; pools/water systems: and quality improvements and controls required for captive animals living under human stewardship.

PROJECT JUSTIFICATION:

The existing hydraulic shift animal doors at the Reptile Discovery Center (RDC), the Great Ape House and Think Tank buildings (home to gorillas and orangutans) at Rock Creek Park in Washington, DC are failed or failing, causing the doors to drift open and closed, risking animal escape and animal or human entrapment. In addition to being a safety hazard, they do not meet current codes and requirements. They must be replaced or modified with a new hydraulic system upgrade. In addition, funds are needed to upgrade living collections infrastructure to meet animal health, safety and welfare (HSW) requirements mandated by the AZA and the USDA and enforced with five-year cycle inspections, due in 2023. This infrastructure includes animal pools and primary and secondary containment fences, systems, and assemblies, including anti-predator measures to keep out local bears, coyotes, and foxes. These requirements, which are continually evolving, include taller fences, fence hot wire and associated electrical infrastructure, fence dig barriers, animal shift and human access safety gates, enrichment and climbing structures. These funds will also be used to upgrade multiple perimeter and interior containment fences at the SCBI animal yards in Front Royal, Virginia.

PROJECT DESCRIPTION:

The Smithsonian requests \$1.95 million in FY 2021 to upgrade living collections infrastructure, including \$1.0 million to replace or modify the hydraulic shift animal doors at the Reptile Discovery Center (RDC), Great Ape House and Think Tank buildings at Rock Creek Park; \$375,000 for animal Health, Safety and Welfare (HSW) pools and containment projects at Rock Creek Park; \$375,000 for animal HSW pools and containment projects at Front Royal, Virginia; and \$200,000 to upgrade perimeter and interior animal containment fences at Front Royal, Virginia. The shift doors at Rock Creek Park, in Washington, DC must be replaced or modified with a new hydraulic system upgrade, including new hydraulic lines, pumps, controllers, actuators, safety devices and door hardware. The living collections infrastructure projects will include required AZA and/or USDA improvements to ensure the health, safety and welfare of captive animals under the stewardship of the Smithsonian. This work is part of ongoing major capital renewal efforts to replace living collections infrastructure systems, pools and containment at both the Rock Creek Park and Front Royal campuses.

PROGRESS TO DATE:

Previously completed living collections infrastructure projects include numerous animal gates, fences, and stainless steel exterior cable containment systems; dig-barriers, hotwire and hot grass containment improvements; chutes, commissary repairs, aquatic filtration system and pool repairs; Kiwi and other animal cages and pens; sloped soil stabilization, erosion control and animal huts/gates at the cheetah yards in Front Royal; cushioned concrete floor coatings in hoof stock stalls at the Veterinary Hospital in Front Royal; installation of thermal heating and cooling systems at the quarantine holding rooms at the Veterinary Hospital at Rock Creek Park; installation of a clean steam humidification system at the orangutan holding spaces at Rock Creek Park; and predator prevention fencing at the Rivinnus Barn complex at Front Royal (home to endangered cheetahs, Eld's deer, and extinct-in-the-wild scimitar-horned oryx antelope).

IMPACT OF DELAY:

Failure to replace or modify the hydraulic animal shift doors at these facilities, which are failed or failing, causing the doors to drift open and closed (in one case, the door takes more than 20 minutes to close properly), will continue the increased risk of animal escape and animal or human entrapment, and potentially deadly accidental animal/human interaction. Failure to address the evolving AZA and USDA requirements for HSW pools and containment could result in loss of the Smithsonian's AZA accreditation. As the Nation's Zoo, the Smithsonian establishes standards for animal care both nationally and internationally. Other negative impacts could result in animal predation of extinct-in-the-wild and highly endangered species, and animal escapes. Non-functioning pools waste precious freshwater natural resources or result in substandard water quality levels for endangered species. As exemplified by these projects, failure to upgrade NZP/SCBI living collections infrastructure will result in operational emergency responses that are costly, disruptive, and preventable. In addition, not making these improvements and repairs could threaten NZP/SCBI's accreditation by the AZA. The potential impact of delaying living collections system replacements and upgrades could result in serious harm to visitors, staff, and the animals in our care, along with the loss of precious scientific research data essential to ensuring the survival of rare and endangered species.

PROJECT TITLE: Improve Site Systems and Site Safety
INSTALLATION: National Zoological Park and Smithsonian Conservation Biology Institute (NZP/SCBI)
LOCATIONS: Washington, DC and Front Royal, Virginia

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$8,300*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$0*</u>
Total	\$8,300*

* Does not include funding in Facilities Planning and Design

BACKGROUND:

Multiple facilities, at both the 163-acre Zoo at Rock Creek Park, in Washington, DC and the 3,200-acre research center in Front Royal, Virginia, have major capital systems renewal needs due to failed and failing living collections infrastructure required to fulfill the mission of the National Zoological Park’s (NZP) endangered species program. These systems are unique and vastly different from systems and utilities found elsewhere within our museums. Unlike our National Mall facilities, within the boundaries of both campuses of NZP/SCBI, the Smithsonian is required to operate and maintain site utilities. These include: domestic potable water systems and fire-suppression water distribution; emergency fire-hydrant systems; waste/recirculation water treatment plants for our aquatic exhibits; sanitary sewers and storm sewers; high-voltage power distribution systems, electrical sub stations, step-down transformers and emergency generators; data cabling and fiber networks; Federal Highway Administration traffic-rated bridges, public and staff area roads, curbs and gutters, public trails and walkways; public, staff, volunteer, and special events parking lots and pathways; stormwater management and storm flood mitigation/barrier systems; street light and pathway light systems; and, multiple localized cooling towers and chillers. Additionally, the NZP has a central boiler plant at Rock Creek Park to generate distributed steam for heating via a combination of steam tunnels and direct-buried steam lines and a load-rated parking deck. At Front Royal, the SCBI has a natural spring/well water distribution system and a separate Front Royal city water distribution system. Also, at Front Royal, the SCBI has a two-acre green energy, ground-mounted, photo-voltaic power-generating system and 50 miles of perimeter fence to maintain. In FY 2021, for the Rock Creek Park, Washington, DC site, this project will implement phases 3–9 of the Utility Master Plan, implement comprehensive stormwater management strategies, the repair or replacement of failing faux rock, and the replacement of the next section of the Asia Trail pavement. In FY 2021, for the Front Royal, Virginia campus, this project will include the revitalization of the natural spring and well water system and upgrades to the post area utilities phase 4 (city water, sewer, storm water management and electric power).

PROJECT JUSTIFICATION:

At Rock Creek Park, in Washington, DC, phases 3–9 of the Utility Master Plan includes renovations to an 80+ year-old steam plant, as well as water, telecom, electric power and natural gas systems, which are essential animal and human life-safety systems. Much of this infrastructure is obsolete and failing and therefore insufficient to protect and support the safety of animals, staff and visitors. These deficiencies must be

addressed with appropriate upgrades to allow for the continued safe operation of the National Zoo. In addition, the Washington, DC Department of Energy and the Environment (DOEE) requested that NZP develop a 20-year stormwater management master plan to mitigate periodic flooding episodes. This project will initiate the implementation of this plan. Also, at Rock Creek Park, failing faux rock creates the potential for severe injury or death to animals and staff. This condition must be addressed with repairs or replacements, as well as warning signage and safety rails for humans and hot wires to deter animals from climbing on these structures. The *Asia Trail* pavement has deteriorated, creating tripping hazards for pedestrians and must be replaced. At the Front Royal, Virginia campus, the World War I-era natural spring and well water distribution system does not meet current health safety standards and must be upgraded. Aging post area utility systems, including city water, sewer, stormwater management and electric power, are obsolete and must be upgraded to avoid the risk of service interruptions, and modernized to meet current safety codes and standards. All of this work is part of the ongoing major capital renewal project to replace site utilities, including infrastructure and safety systems throughout both the Rock Creek and Front Royal campuses.

PROJECT DESCRIPTION:

The Smithsonian requests \$8.3 million in FY 2021 to continue the NZP/SCBI's major capital renewal program. For the Rock Creek campus in Washington, DC, this includes \$2.0 million for the final phase of the repairs and replacement of the 80+-year-old centralized steam heat distribution system (part of the Rock Creek campus-wide Site Utilities Master Plan implementation), \$750,000 for Phase 1 of the Stormwater Master Plan flooding repair work, \$1.25 million to repair/replace deteriorated interior and exterior faux rock, and \$1.8 million to replace deteriorated paved pedestrian walkways at Asia Trail. For the Front Royal campus in Virginia, this includes \$500,000 to replace the World War I-era natural spring and well water distribution system and \$2.0 million to modernize the World War I-era sewer and city domestic water distribution systems, as well as the buried electric power lines, site lighting, and fiber optic/data communications cable. This project will also implement code-mandated stormwater management strategies.

PROGRESS TO DATE:

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. Visitor safety/fall-protection improvements at the Giant Panda House rooftop overlook are complete, as are new visitor safety rails inside the Great Ape House and at the prairie dog exhibit. Site utilities completed to date at Rock Creek Park include steam line replacement of approximately 85 percent of buried piping, new electrical substations at Lot A and at the Lower Zoo, new site utilities serving the new Conservation Pavilion and Police Station, and the data and fiber backbone along Olmsted Walk. Upcoming work includes total replacement of 85-year-old steam and condensate return lines in the steam tunnels connecting the Small Mammal House to the Reptile Discovery Center and up Olmsted Walk to the Elephant House. The next phase of the project will focus on high-voltage electrical switchgear and motor control centers throughout most of the animal houses, followed by rebalancing the high-voltage distribution system main feeders. The site utilities project will continue with the steam system modernization and upgrades to the electric power, water, sewer and stormwater management systems. At Front Royal, Phase 1 of the site utilities project was completed as part of the Smithsonian/Mason School of

Conservation work in 2013. Phase 2 was completed in 2017, also serving the central post area of the campus, and Phase 3 is currently about 60 percent complete. There are six more phases needed to complete site utilities at Front Royal, costing approximately \$2.0 million each. The project will provide buried power lines, and new sanitary sewers, site lighting, and water and backflow prevention. Additionally, the master plan requires the complete replacement of the 100-year-old spring water system.

IMPACT OF DELAY:

Failure to upgrade NZP/SCBI site utilities, infrastructure and safety systems will result in operational emergency responses that are costly, disruptive and preventable, and if not implemented, could result in the loss of NZP/SCBI's accreditation by the Association of Zoos and Aquariums. Delaying such system replacements and upgrades could result in serious harm to visitors, staff, and to the animals in our care, along with the loss of scientific research essential to the survival of rare and endangered species. At the Rock Creek Park site in Washington, DC, failure to replace the steam plant and upgrade the water, telecom, electric power and natural gas systems as part of the next phase of the Utility Master Plan will continue to endanger the lives of animals, staff and visitors with insufficient heating/cooling during cold/hot weather, and continued risk of interrupted water, telecom, electric power and natural gas service. Failure to begin implementation of the EPA requirements as delegated to the District of Columbia's Department of Energy and Environment (DOEE) could result in hefty fines and penalties to the Smithsonian. Implementation of the DOEE-requested Stormwater Management Master Plan started in FY 2019 and will mitigate continued periodic flooding at vulnerable areas of the site. Failure to make repairs and replacements, and to implement warning systems at the deteriorated interior and exterior faux rock, will continue to put animals, staff and visitors at risk of serious injury. The failure to replace deteriorated pavement will make tripping hazards more likely, causing an unsafe condition for visitors. At the Front Royal, Virginia campus, failure to revitalize the obsolete spring and well water system will continue contributing to a health safety hazard, and failure to modernize utilities, including sewer, city water, electric power, site lighting, fiber-optic communications cable, and stormwater management strategies, will increase the risk of disrupted service.

PROJECT TITLE: Upgrade Fire Protection and Life Safety
INSTALLATION: National Zoological Park and Smithsonian Conservation Biology Institute (NZIP/SCBI)
LOCATIONS: Washington, DC and Front Royal, Virginia

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$4,500*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$0*</u>
Total	\$4,500*

* Does not include funding in Facilities Planning and Design

BACKGROUND:

Multiple buildings, at both the Rock Creek, Washington, DC and Front Royal, Virginia 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, and in the case of the General Services Building (GSB), require emergency structural life-safety repairs. The Panda House, Think Tank, Small Mammal House, and Lion/Tiger House need smoke control and smoke-evacuation systems. At Front Royal, many animal barns and outlying facilities beyond the central post area still require fire-suppression, detection, and alarm systems.

PROJECT JUSTIFICATION:

At the Rock Creek Park, Washington, DC site Small Mammal House (SMH) maintenance staff must climb above animal cage enclosures to access electrical power receptacles, lighting and heat lamps positioned above the cages, risking falls into the animal exhibit cages below. Fall protection methods must be developed and installed to allow maintenance staff safe access to service these devices. The parking “Lot C” roof deck above the GSB has a known risk of “punching shear,” where the structural columns of the GSB can potentially “punch” through the parking surface above, likely resulting in the catastrophic collapse of the parking deck and several stories of the GSB floors below, causing injury or death to the people below as well as significant property damage. Structural reinforcement must be designed and installed to prevent this from occurring. At the Giant Panda House, smoke controls allowing for smoke evacuation in the event of fire must be installed to allow the animals, which are captive within the building, to continue to breathe safely. In addition, the primary containment animal-to-human separation window wall is failing and needs replacement to maintain separation for staff safety. At the Front Royal, Virginia campus, there is no fire-protection for the outlying Meade, Green Hill and Waller barns. In the event of fire, a fire-protection system must be installed to protect the animals which are held captive within these structures. This work is part of the major capital installation and renewal of life-safety infrastructure systems throughout both the Rock Creek and Front Royal campuses.

PROJECT DESCRIPTION:

The Smithsonian requests \$4.5 million to address a known risk of structural failure at the GSB and install fall protection, fire-protection, smoke evacuation and other life-safety infrastructure systems at both the Rock Creek Park and Front Royal campuses. At the Rock Creek Park, Washington, DC site, this includes \$400,000 to address SMH fall

hazards, \$2.0 million for reinforcements to address the risk of catastrophic structural failure at the parking lot C / GSB, and \$800,000 for a smoke-evacuation system and to replace the primary containment animal-to-human separation window wall at the Giant Panda House. At the Front Royal, Virginia site, this includes \$1.3 million to install fire-protection systems at outlying animal facilities.

PROGRESS TO DATE:

The North Road structural retaining wall and fire-protection/life-safety systems were completed at the General Services Building, as was the smoke-evacuation and fire-safety system at the Great Ape House. Designs for the Giant Panda House smoke-evacuation system and mechanical systems improvements are complete and await Animal Care Science's approval for implementation and coordination with the Giant Panda breeding program. Multiple projects are in the planning and design stages for the current Five-Year Capital Plan.

IMPACT OF DELAY:

At the Rock Creek Park, Washington, DC site, failure to install fall-protection measures at the SMH will continue to put maintenance staff at risk of falling into animal enclosures when servicing devices located above. Failure to reinforce the structure of the parking lot C over the GSB will continue the risk of catastrophic collapse, potentially killing or severely injuring staff housed below. Failure to install a smoke-evacuation system and replace the animal-to-human separation window wall at the Giant Panda House will continue to put the animals at risk of death due to smoke inhalation during fires, and put the staff at risk if the physical separation wall between them and the animals fails. At the Front Royal, Virginia campus, failure to install fire-protection systems at the outlying barns will continue to put the animals housed within these facilities at risk during fires. Failure to upgrade NZP/SCBI fire and life-safety infrastructure systems 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 precious scientific research essential to the survival of rare and endangered species.

PROJECT TITLE: Improve and Replace Building Envelope at Great Cats House
INSTALLATION: National Zoological Park and Smithsonian Conservation Biology Institute (NZN/SCBI)
LOCATIONS: Washington, DC and Front Royal, Virginia

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$2,000*
<u>FUTURE-YEAR FUNDING:</u>	\$0
Total	\$2,000*

* Does not include funding in Facilities Planning and Design

BACKGROUND:

Multiple buildings, at both the Rock Creek, Washington, DC and Front Royal, Virginia locations, have major capital systems renewal needs due to failed and failing infrastructure, including building envelope roofs, skylights, window walls, exterior cladding, curtain walls, exterior walls, and regular and overhead doors. Many of these envelope systems were constructed before the 1970s-era energy crisis, before current thermal, air, water, and vapor barrier assemblies were invented, and some before the advent of indoor air conditioning. This project will renew building roofs and exteriors, replace failed and failing systems that are beyond their life expectancy, stop active leaks allowing stormwater to penetrate the interiors, causing damage and other indoor air quality and adverse health issues to both human and animal occupants. This project will provide state-of-the-art roof and wall assemblies to conserve energy by reducing heat and cooling loads, air infiltration, and interior condensation and mold, using current building technologies with energy efficient and environmentally sustainable designs.

PROJECT JUSTIFICATION:

The roof assembly at the Great Cats House, which also serves as the asphalt paved surface pedestrian walk above, has completely failed. It is an ongoing tripping hazard and leaks stormwater into offices, archives, and animal holding spaces below. This roof and pedestrian walkway must be completely replaced to properly address these safety and water infiltration issues. Along with improving the integrity of the building envelope by replacing this roof structure, four 1970s-era air-handling units which are well past their service life must be replaced to adequately address chronic internal environment issues.

PROJECT DESCRIPTION:

The Smithsonian requests \$2.0 million in FY 2021 to replace the Great Cat House (Lion/Tiger) roof and circular visitor path as well as four obsolete air-handling units.

PROGRESS TO DATE:

At Rock Creek Park, building envelope projects have typically been incorporated into larger major capital renewal projects like the LEED certified Seals/Sea Lion buildings on *American Trail*, all the animal buildings along *Asia Trail One*, *Asia Trail Two* (LEED Gold Elephant Trails), and the currently active LEED Gold candidate Bird House Project. At Front Royal, the LEED Gold Smithsonian/Mason School of Conservation project included a new roof and new exterior envelope, as does the currently active LEED Silver candidate Building 1 Bio-repository project.

IMPACT OF DELAY:

Failure to replace the roof assembly and pedestrian walk at the Great Cat House will allow the asphalt roof/walk surface to continue to deteriorate, increasing tripping hazards for the visiting public and worsening water infiltration into offices, archives, and animal holding areas below. Failure to replace air-handling units, which are more than 40 years old, will risk complete failure in the near future, potentially making the building uninhabitable until emergency replacement of long lead equipment can take place. Failure to upgrade these NZP/SCBI building envelope systems 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 precious scientific research essential to the survival of rare and endangered species.

PROJECT TITLE: Improve and Replace Building Systems: Amazonia Elevator
INSTALLATION: National Zoological Park and Smithsonian Conservation Biology Institute (NZIP/SCBI)
LOCATIONS: Washington, DC and Front Royal, Virginia

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$700*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$0*</u>
Total	\$700*

* Does not include funding in Facilities Planning and Design

BACKGROUND:

Multiple buildings, at both the Rock Creek Park, Washington, DC and Front Royal, Virginia locations, have major capital systems renewal needs due to failed and failing infrastructure, including: elevators; American with Disabilities Act (ADA) accessibility chair lifts; air-handling units; variable-air volume and terminal boxes; building automation controls and interlocks/interlinks with security and fire-alarm systems; chillers, duct work and fire/smoke dampers; actuators; controls; emergency generators and load test banks; emergency lighting; electrical panels; loading dock levelers and compactors; composting stations; grease ducts and grease hoods with related dry-chemical and wash-down systems; heat hoods; fume hoods; laboratory exhaust systems; and specialized veterinary hospital systems. Many of these systems are beyond their useful life and are in need of replacement and/or upgrades to meet current life-safety and building codes.

PROJECT JUSTIFICATION:

The elevator at the *Amazonia Rain Forest* exhibit at Rock Creek Park in Washington, DC is past its useful life and is frequently out of service for repairs. To continue to allow code compliant public access to the exhibit, it must be completely overhauled with waterproof / water-resistant components above and beyond minimum code requirements to endure extremely wet conditions and condensation in this environment that simulates a high-humidity rain forest.

PROJECT DESCRIPTION:

The Smithsonian requests \$700,000 in FY 2021 to replace and refurbish all major components of the *Amazonia Rain Forest* exhibit elevator. This will include the elevator shaft, cab, all equipment, controllers, safety devices, cables and hoist way.

PROGRESS TO DATE:

Phased refurbishment of the elevators at the Rock Creek campus began in 2012 and will be completed with this project. Additionally, the Smithsonian partnered with the Department of Energy (DOE) to implement a \$25 million Energy Savings Performance Contract (ESPC) at both campuses. This project replaced most of the least efficient mechanical air handlers, two chillers, and a cooling tower; replaced thousands of light fixtures with new energy-saving LED ones; and installed many water conservation measures. This project will continue the master plan implementation and provide funding to replace equipment not addressed via the ESPC.

IMPACT OF DELAY:

Failure to refurbish the Amazonia elevator will continue to risk complete breakdown of these mechanical components, especially in the harsh environment of high humidity necessitating the closure of this exhibit to visitors. Failure to upgrade NZP/SCBI systems equipment will result in operational emergency responses that are costly, disruptive, and preventable. The 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 scientific research essential to the survival of rare and endangered species.

PROJECT TITLE: Renew Old Administration Building
INSTALLATION: National Zoological Park and Smithsonian Conservation Biology Institute (NZIP/SCBI)
LOCATIONS: Washington, DC and Front Royal, Virginia

FY 2021 COST ESTIMATE (Thousands of Dollars): \$3,000*

FUTURE-YEAR FUNDING: \$0*

Total \$3,000*

* Does not include funding in Facilities Planning and Design

PROJECT BACKGROUND:

Multiple buildings, at both the Rock Creek Park, Washington, DC and Front Royal, Virginia locations, have major capital systems renewal needs due to failed and failing infrastructure. The 2008 Comprehensive Facilities Master Plan (CFMP) calls for a series of major capital renewal projects to be executed in order of priority during the next 20–25 years. Much progress has been made renewing the failing buildings, but there are several buildings that still need renewal. At Front Royal, the next building in the master plan to be renewed is the Old Administration Building, to be followed by the Veterinary Hospital, Police Station, Building 2, and other major research and support buildings of the Central Post Area, including Residence Row and all World War I-era animal barns. At Rock Creek Park, buildings that still need renewal are the Reptile Discovery Center, to be followed by the Small Mammal House, Think Tank, Lion/Tiger House, Amazonia, Science Building, Veterinary Hospital, Visitors Center, and Holt House.

PROJECT JUSTIFICATION:

This project will continue the major renewal projects in the Old Administration Building at Front Royal. The HVAC system in this facility is outdated and currently fails to keep occupants warm in the winter and cool in the summer. It needs to be upgraded to new standards and current code requirements. Other building systems, such as plumbing, electrical, fire protection and security systems, are also outdated and must be renewed, along with the HVAC system, to avoid the risk of service disruptions which could make this facility uninhabitable unless these systems are modernized to meet current safety codes and requirements.

PROJECT DESCRIPTION:

The Smithsonian requests \$3.0 million in FY 2021 to renew the Old Administration Building at Front Royal. The HVAC system will be upgraded to new standards and current code requirements. In addition, plumbing, electrical, fire-protection and security upgrades will be made to comply with current codes and requirements.

PROGRESS TO DATE:

At Rock Creek Park, major capital and long-term master plan renewal projects completed to date include the Seals/Sea Lions Facility along *American Trail*, *Asia Trail Phase 2* “Elephant Trails,” and the Conservation Pavilion/Public Restrooms/Police

Station Renovation. The Bird House is being renovated and is expected to reopen to the public in 2021. Additionally, multiple site utilities and visitor safety/animal separation projects have been completed. At Front Royal, major renewal projects completed to date include work on the Smithsonian Mason School of Conservation, with partnership funding provided by George Mason University for a new dormitory and dining hall. Central post site utilities phases 1 and 2 and multiple fire-protection projects were completed at the Veterinary Hospital, the Auditorium, Small Mammal Facility, and the new Administration Building renovation. The State Route 522 turning lanes were provided at Gates 2 and 3, along with a new main entrance guard booth and security access controls at Gate 2.

IMPACT OF DELAY:

Failure to renew the Old Administration Building HVAC and other building systems will allow interior environmental conditions to continue to deteriorate to the point of complete failure, necessitating the closure of the building and the relocation of staff on an emergency basis. Failure to upgrade NZP/SCBI life-safety systems and infrastructure will result in operational emergency responses that are costly, disruptive, and preventable. 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 vital scientific research essential to the survival of rare and endangered species.

PROJECT TITLE: Improve Long-Term Electronic and Physical Security
INSTALLATION: National Zoological Park and Smithsonian Conservation Biology Institute (NZP/SCBI)
LOCATIONS: Washington, DC and Front Royal, Virginia

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$4,500*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$0*</u>
Total	\$4,500*

* Does not include funding in Facilities Planning and Design

BUILDING BACKGROUND:

Multiple buildings, facilities, and perimeter fences, at both the Rock Creek Park, Washington, DC and Front Royal, Virginia locations, have major capital security renewal and upgrade needs due to antiquated or non-existent electronic and/or physical security systems, equipment, and perimeter fencing. Many of the facilities have not been updated to meet current Smithsonian Office of Protection Services (OPS) security codes and standards. Site security systems which need to be upgraded, repaired, or installed include: perimeter and interior security fences; automatic and motorized vehicular and pedestrian gates; bollards; traffic-rated safety fences; access controls; and electronic security devices such as card readers; cameras and motion sensors; glass break sensors; door and window contact sensors; emergency call stations/kiosks for visitors; animal holding areas; staff offices; control equipment; wiring; conduits, and security panels.

PROJECT JUSTIFICATION:

These projects continue the major capital renewal of security infrastructure, including devices, badge readers and electronic door lock interfaces, to replace the failed and/or failing electronic and physical security systems throughout both the Rock Creek Park and Front Royal campuses. The security fence project was partially funded in FY 2019 to include the segments along North Road from the vehicular entrance from Connecticut Avenue, past Lot A, the Bus Lot, Lot B, down the hill to the entrance to Lot C by the Boiler Plant, and from the Boiler Plant to the Lower Zoo Entrance. All new fencing will be able to withstand the impact of vehicles traveling at up to 50 miles per hour to reduce the risk of accidental and terrorism-related vehicle strikes.

PROJECT DESCRIPTION:

The Smithsonian requests \$4.5 million in FY 2021 for the following projects: \$3.0 million to continue replacing the perimeter security fence, consolidate visitor entrances and bus lots, and add bollards; and \$1.5 million to upgrade the Rock Creek and Front Royal campus-wide electronic security systems. This project will also address fencing segments from the Lower Zoo entrance around Kid’s Farm to the Stone Bridge at Amazonia. At Rock Creek Park, the project will also complete the blue light emergency kiosks around the Bird House plateau and will enable individual animal houses to receive electronic security devices, including cameras, access controls, including door badge readers and electronic lock interfaces, glass break sensors, door and window sensors, and motion detectors. At Front Royal, the project will enable ongoing upgrades to vehicle and pedestrian gates for access controls. The project will

help bring both campuses closer to full compliance with OPS security standards for Smithsonian's facilities.

PROGRESS TO DATE:

At Rock Creek Park, new security panels and head-end devices have been installed in all major animal houses along Olmsted Walk, and all buildings were re-keyed on a new grandmaster keying system. New electronic security system devices and venomous snake-bite and dangerous carnivore alarm systems were completed at the Reptile Discovery Center. Public-staff separation projects were completed at the Visitor Center and elsewhere throughout the campus, and emergency blue-light call stations were added throughout the campus and in the visitor/staff parking lots. At Front Royal, emergency blue-light call stations were added throughout the Central Post area of the campus, all buildings were re-keyed on a new grandmaster keying system, the main gates 2 and 3 were secured, and a guard booth was installed at Main Entrance Gate 2. In addition, thousands of feet of fencing along State Route 522 was upgraded to meet current perimeter fencing standards, and multiple buildings had card readers, doors, and gates upgraded.

IMPACT OF DELAY:

For the first time in its 130-year history, the NZP implemented visitor screening during the 2019/2020 Zoolights Winter Holiday event, confirming the need to address security threats. This funding is for risk reduction and mitigation measures identified in the threat assessment report developed by the Smithsonian's Office of Protection Services and associated local and federal law enforcement agencies, including fencing, consolidated visitor entrances and bollards. Failure to upgrade NZP/SCBI electronic and physical security systems and infrastructure, including the fence, consolidated entrances and bollards, will result in operational emergency responses that are costly, disruptive and preventable. The impact of delaying such system replacements and upgrades has already resulted in serious harm to visitors. Further delays in this project could result in future harm to visitors, staff and volunteers, as well as to the animals in our care, along with the loss of scientific research essential to the survival of rare and endangered species.

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

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$6,000*
<u>PRIOR-YEAR FUNDING:</u>	\$1,500*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$2,500*</u>
Total	\$10,000*

* Does not include funding in Facilities Planning and Design

BUILDING BACKGROUND:

The NMNH building opened to the public in 1910. The East and West Wings were added in the early 1960s. Two infill buildings were constructed in the original building's East and West courtyards in the late 1990s. In addition to its wide array of public exhibits, the 1.5-million-square-foot-building houses more than 60 million specimen collections (used by both resident and visiting researchers), and educational, scientific, and administrative facilities serving approximately 1,200 people. The NMNH is one of the most visited museums in the world and hosts between seven and eight million visitors annually.

PROJECT JUSTIFICATION:

Most of the building's electrical systems were installed in the early 1960s and they need major replacement. Breakdowns of the systems are frequent, repair parts are often difficult to find, and the systems are not code-compliant, presenting a safety hazard to visitors and collections. The reliability of the electrical system is compromised by the deteriorated condition of the antiquated switchboards, bus ducts, network protectors, generators, transfer switches, and distribution and branch circuit panel boards.

PROJECT DESCRIPTION:

The Smithsonian requests \$6.0 million in FY 2021 to continue the ongoing renovation process, with a particular focus on upgrading the electrical systems. To that end, specific electrical work includes correcting all inadequate short-circuit rating equipment, replacing obsolete equipment, installing new dedicated life-safety panels, and abating hazardous material encountered during this upgrade.

PROGRESS TO DATE:

As part of ongoing renovations, an exhaustive survey and analysis of current electrical systems was completed to inform a feasibility study. In 2018, the scope was expanded to include relocation of life-safety circuits to new panels and coordinate changes with the Building Automated System. The completed contract documents are expected in February of 2020. For each discreet area of the building — Main Building, wings and courts — there is a plan for what needs to be replaced and upgraded, including emergency device coordination. This well-defined infrastructure renovation is essential to maintain the NMNH's continued service to the public. Award of the construction contract is expected in July of 2020.

IMPACT OF DELAY:

Electrical currents introduce large amounts of destructive energy into a facility in the form of heat and magnetic force. The reliability and safety of an electrical system depend on protective devices and electrical equipment being updated regularly and checked for code compliance. If a building is not properly protected, equipment will be damaged and maintenance personnel will be at risk of injury. An upgrade is required to protect the Museum's collections, staff, and visiting public. Ultimately, a compromised electrical system would also impede the Museum's ability to maintain regular operations and delay the exhibit re-installation program.

PROJECT TITLE: Upgrade Fire-Alarm Panels and Mass-Notification Systems
INSTALLATION: National Museum of Natural History (NMNH)
LOCATION: Washington, DC

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$5,000*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$12,000*</u>
Total	\$17,000*

* Does not include funding in Facilities Planning and Design

PROJECT JUSTIFICATION:

The current NMNH fire-alarm panels are out of date and became obsolete when production ended in September of 2018. Over time, parts will become difficult or impossible to find and eventually they will be incompatible with newer equipment. Fire-alarm panels must be upgraded to the new Siemens XLS model in order to stay current and maintain the safety and reliability of the system. A simultaneous upgrade to the mass-notification system is well-timed because the two systems are integrated. Currently, NMNH has no comprehensive way to notify the public and staff during emergencies. The speakers installed as part of the fire-alarm upgrade would provide mass-notification capacity.

PROJECT DESCRIPTION:

The Smithsonian requests \$5.0 million in FY 2021 to begin upgrading the fire-alarm panels and mass-notification system. The Museum's existing Siemens MXL panels must be upgraded to the new Siemens XLS panels, and a comprehensive mass-notification system needs to be designed and implemented as well. There is economy and efficiency in combining the fire-alarm panel replacement with the new speaker installation. The speaker layout for the mass-notification system will take into account the Museum's acoustic issues, which are significant due to the grand and historic nature of the building with its many high ceilings and large galleries.

PROGRESS TO DATE:

The final feasibility report, completed in March of 2019, provided the basis for the design contract scope, which was awarded in July of 2019 with expected completion in spring of 2021. The construction contract award is planned for the third quarter of FY 2021.

IMPACT OF DELAY:

An aging and out-of-date system runs the risk of failure and the possibility of endangering collections, visitors, and staff. In the worst-case scenario, a malfunctioning fire-alarm system could shut down the building. In addition, mass-notification systems are rapidly becoming an essential feature in public buildings, because they are necessary to quickly broadcast life-saving information in the event of natural or manmade emergencies.

PROJECT TITLE: Replace Rotunda Copper Roof
INSTALLATION: National Museum of Natural History (NMNH)
LOCATION: Washington, DC

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	<u>\$1,000</u>
Total	\$1,000

PROJECT JUSTIFICATION:

The slate dome of NMNH's Rotunda is surrounded by large areas of a flat copper roof. This flat-seam copper roof is in very poor condition. It has a lot of broken solder seams which have led to multiple water leaks throughout the Museum, endangering both the priceless collections and sensitive equipment below.

PROJECT DESCRIPTION:

The Smithsonian requests \$1.0 million in FY 2021 to begin the project, which will include the removal and replacement of the existing copper roof, existing flashing around the curbs, and repair of other roof penetration such as around pipes and drains. Additionally, the project will include removal (and then later replacement) of the first three rows of slate on the Rotunda dome in order to install the new copper and waterproofing sub-layers to continue up under the slate — a best practice for avoiding water infiltration. Replacement of the Portico roof is also included in this scope.

PROGRESS TO DATE:

A feasibility report for the Rotunda copper roof replacement was recently completed and formed the basis for a scope-of-work and cost estimate for the project.

IMPACT OF DELAY:

If the corroded copper roof is not replaced in a timely manner, water leaks will damage the building fabric, sensitive equipment, and collections, as well as pose a danger to staff and the public.

PROJECT TITLE: Modernize West Court Elevators
INSTALLATION: National Museum of Natural History (NMNH)
LOCATION: Washington, DC

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$900
<u>FUTURE-YEAR FUNDING:</u>	<u>\$900</u>
Total	\$1,800

PROJECT JUSTIFICATION:

Elevators 32, 33, 35 and 36 were installed when the West Court of the Museum was newly constructed in 1996, and are overdue for an upgrade because of their high usage and age. Many of the elevator door operators and controllers require constant maintenance and are always at risk of failure.

PROJECT DESCRIPTION:

The Smithsonian requests \$900,000 in FY 2021 to begin the modernization of the four elevators that are more than 20 years old. Elevators 32 and 33 provide access to food service areas and therefore have had high usage since their installation. The door operators, controllers, and other door components have developed many problems and should be replaced with modern parts. The elevator door upgrade will provide an opportunity to address the other numerous deficiencies of these two elevators. Elevator 35 is a passenger/freight elevator that requires new counter rollers. Elevator 36 is a freight elevator that is used more often than any other elevator in the West Court and therefore requires complete modernization.

PROGRESS TO DATE:

By working with vertical transportation experts, the Smithsonian has identified the new parts and equipment required to bring the four elevators up to modern standards, including life-safety compliance. Preliminary scopes of work have been developed for each of the deficient elevators.

IMPACT OF DELAY:

If any of the elevators were to fail, it would have a significant impact on operations in the West Court area of the Museum. Due to the advanced age of the equipment, it takes a long time to locate replacement parts, keeping the elevators out of service. Without reliable elevators, food service and trash removal into the basement would be very difficult, which would negatively affect the visitors' experience to a great extent.

PROJECT TITLE: Upgrade Electronic Security
INSTALLATION: National Museum of Natural History (NMNH)
LOCATION: Fort Pierce, Florida

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	<u>\$500</u>
Total	\$500

BUILDING BACKGROUND:

Fort Pierce is the NMNH's Florida outpost for marine biology research. The property consists of a small campus with a main building, offices, lab space, and a small marine animal collection. To facilitate its mission, the facility is located close to the Florida Intracoastal Waterway and is within eyesight of beach access.

PROJECT JUSTIFICATION:

The Smithsonian Office of Protection Services (OPS) determined the Facility Security Level (FSL) of Fort Pierce is a Level 2. OPS then conducted a risk assessment by using the Interagency Security Committee (ISC) Risk Management Process and the Smithsonian's Security Design Criteria (SDC). Based on the FSL determination and risk assessment, additional security measures are required.

Fort Pierce has operated as an open facility with limited physical and electronic security, generally controlling access through the use of cipher locks and the situational awareness of the staff. This practice fails to meet ISC and SDC requirements or industry best practices. New infrastructure and equipment to include physical access control and video surveillance are required to bring the current configuration into greater alignment with ISC and the Smithsonian's OPS standards for a Level 2 facility.

PROJECT DESCRIPTION:

The Smithsonian requests \$500,000 in FY 2021 to design and install electronic security system (ESS) equipment for physical access control and video surveillance as well as to do the necessary work to bring the Fort Pierce site into closer compliance with ISC and SDC standards for an FSL 2 facility.

PROGRESS TO DATE:

At the beginning of FY 2018, the OPS performed a risk assessment/security management review for the Fort Pierce facility to identify and prioritize the security needs of the site. This review identified key deficiencies that must be fixed to bring the site into closer compliance with FSL 2.

IMPACT OF DELAY:

As initially outlined, security at Fort Pierce is below the overall standards that an FSL 2 property requires. Delaying the electronic security upgrades will continue to put this facility and Smithsonian staff at greater risk of a security incident.

PROJECT TITLE: Replace Center Core Finishes and Lighting
INSTALLATION: National Museum of American History (NMAH)
LOCATION: Washington, DC

FY 2021 COST ESTIMATE (Thousands of Dollars): \$3,000

BUILDING BACKGROUND:

The National Museum of American History, *Kenneth E. Behring Center* (NMAH), opened to the public in 1964, and is one of the Smithsonian's most visited museums. This classic modern building (752,000 gross square feet) contains a variety of exhibitions that explore America's technological, scientific, cultural, and political history. A 2006 master plan generated a series of public space renewal projects, clarifying circulation, modernizing building systems and finishes, and incorporating innovative black box galleries for exhibit installations. To date, renewal of public floors one, two, and three, totaling approximately 240,000 square feet in the center core and West Wing of the Museum, is complete. The future East Wing public space renewal project will begin in FY 2026. An updated master plan, completed in 2018, contains recommendations for continued modernization of building systems, renovations of the spaces on the remaining floors of the building primarily containing workspaces, collections storage and food service, and improvements to the extensive grounds surrounding the Museum, including flood protection.

PROJECT JUSTIFICATION:

This project is necessary to address safety and maintenance items in the public space center core and to improve the visitors' experience.

PROJECT DESCRIPTION:

The Smithsonian requests \$3.0 million in FY 2021 to replace finishes and enhance lighting in the public space center core. This will include replacing the glass floor finish, which is frequently subject to cracking at gallery thresholds and at the treads and landings of the monumental stair, with a more durable floor finish, as well as enhancing the lighting in the dark area beneath the stair. This project will also replace difficult-to-maintain finishes and lighting at the ceilings in the east elevator concourse.

PROGRESS TO DATE:

Design began in FY 2018 and will be completed in FY 2020. The construction contract will be awarded in FY 2021.

IMPACT OF DELAY:

Delaying this project will continue to put visitor and staff safety at risk due to frequent cracking and breaking of glass floor finishes in these public areas. These surfaces cannot be repaired rapidly because replacement parts must be custom ordered and have long lead times.

PROJECT TITLE: Replace MXL Fire-Alarm Panels
INSTALLATION: National Museum of American History (NMAH)
LOCATION: Washington, DC

FY 2021 COST ESTIMATE (Thousands of Dollars): \$2,700

BUILDING BACKGROUND:

The National Museum of American History, *Kenneth E. Behring Center* (NMAH), opened to the public in 1964, and is one of the Smithsonian’s most visited museums. This classic modern building (752,000 gross square feet) contains a variety of exhibitions that explore America’s technological, scientific, cultural, and political history. A 2006 master plan generated a series of public space renewal projects, clarifying circulation, modernizing building systems and finishes, and incorporating innovative black box galleries for exhibit installations. To date, renewal of public floors one, two, and three, totaling approximately 240,000 square feet in the center core and West Wing of the Museum, is complete. The future East Wing public space renewal project will begin in FY 2026. An updated master plan, completed in 2018, contains recommendations for continued modernization of building systems, renovations of the spaces on the remaining floors of the building primarily containing workspaces, collections storage and food service, and improvements to the extensive grounds surrounding the Museum, including flood protection.

PROJECT JUSTIFICATION:

This project is necessary to replace obsolete fire-alarm panels to improve public and staff safety.

PROJECT DESCRIPTION:

The Smithsonian requests \$2.7 million in FY 2021 to replace the existing MXL fire-alarm panels with new fire panels that comply with current building and life-safety codes.

PROGRESS TO DATE:

Design began in FY 2017 and will be completed in FY 2020. Funds permitting, construction will be awarded in FY 2021.

IMPACT OF DELAY:

Delaying this project will increase the risk of failure of these obsolete fire-alarm panels, for which replacement parts are no longer manufactured.

PROJECT TITLE: Improve Lower Level Workplace Pilot
INSTALLATION: National Museum of American History (NMAH)
LOCATION: Washington, DC

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$2,200
<u>FUTURE-YEAR FUNDING:</u>	<u>\$2,150</u>
Total	\$4,350

BUILDING BACKGROUND:

The National Museum of American History, *Kenneth E. Behring Center* (NMAH), opened to the public in 1964, and is one of the Smithsonian’s most visited museums. This classic modern building (752,000 gross square feet) contains a variety of exhibitions that explore America’s technological, scientific, cultural, and political history. A 2006 master plan generated a series of public space renewal projects, clarifying circulation, modernizing building systems and finishes, and incorporating innovative black box galleries for exhibit installations. To date, renewal of public floors one, two, and three, totaling approximately 240,000 square feet in the center core and West Wing of the Museum, is complete. The future East Wing public space renewal project will begin in FY 2026. An updated master plan, completed in 2018, contains recommendations for continued modernization of building systems, renovations of the spaces on the remaining floors of the building primarily containing workspaces, collections storage and food service, and improvements to the extensive grounds surrounding the Museum, including flood protection.

PROJECT JUSTIFICATION:

This project is necessary to consolidate the Museum’s Office of Building Renovation and Exhibition Services, Museum Resources, the Office of Audience Engagement, and the Office of Curatorial Affairs to create room on the upper floors for collections storage swing space. This is to prepare for Phase IV of the Public Space Renewal Project (PSRP) of the East Wing public space. Construction is expected to begin in FY 2026.

PROJECT DESCRIPTION:

The Smithsonian requests \$2.2 million in FY 2021 to renovate 8,500 square feet of space on the lower level that currently houses the Graphic Department and vacated spaces. This will include architectural, structural, electrical, and HVAC upgrades.

PROGRESS TO DATE:

Design began in FY 2018 and will be completed in FY 2020. The construction contract award is expected in FY 2021.

IMPACT OF DELAY:

Delaying this project will impair the Museum’s ability to make more room available on the upper levels for swing space for collections storage necessary to clear the East Wing before the PSRP IV Renovation Project.

PROJECT TITLE: Replace Air-Handling Unit (AHU)-1 through AHU-4
INSTALLATION: National Museum of the American Indian (NMAI-NY)
LOCATION: New York City, New York

<u>FY 2021 COST ESTIMATE</u> (Thousands of Dollars):	\$5,500
<u>FUTURE-YEAR FUNDING:</u>	<u>\$4,500</u>
Total	\$10,000

BUILDING BACKGROUND:

The National Museum of the American Indian in New York (George Gustav Heye Center) opened on October 30, 1994 and occupies approximately 80,000 square feet of the Alexander Hamilton U.S. Custom House Building in lower Manhattan. The NMAI-NY occupies portions of the basement, first, and second floors. The Smithsonian NMAI-NY has its own chiller plant, heating plant, and air-handling systems dedicated to serving only the portions of the building occupied by the NMAI program. The building is operated by the General Services Administration (GSA) and the Smithsonian holds a 99-year lease. The balance of the building is occupied by other U.S. Government tenants.

The United States Custom House at 1 Bowling Green, New York, New York dates from 1907 and was designed by architect Cass Gilbert. It is a national Historic Landmark listed on the National Register of Historic Places. This beaux arts monument to sea trade, the United States Customs Service, and the City of New York, is as rich in historic associations as it is in architectural details and intelligent planning. Its siting in an open and historic space, unashamed exuberance, internationality and pride make this very large building an important cultural artifact and easy to admire.

PROJECT JUSTIFICATION:

Air-handling units (AHUs) 1–4 were installed in the initial construction of the NMAI-NY in the 1990s and serve the galleries and support space in the basement, first, and second floors. They are approximately 25 years old and are at, or past, most estimates of useful air-handling unit service life. Reliability and increased maintenance due to age are issues with the operation of the AHUs.

PROJECT DESCRIPTION:

The Smithsonian requests \$5.5 million in FY 2021 to begin replacing the four main AHUs. This project will also replace and enlarge the existing heating water plant to support the conversion from steam to hot water for the new AHU preheat coils. Sequential implementation is proposed for FYs 2021–2022 and will be accomplished by first replacing AHUs 2 and 4 in the west mechanical room, followed by replacement of AHUs 1 and 3 in the east mechanical room. To maintain a continuous flow of conditioned air to the Museum, a temporary air handler located outside the building will shift from the west side of the building to the east side in support of the work sequence. The new AHUs will efficiently deliver conditioned air and supplement the new chillers and cooling towers recently installed and brought on line through a predecessor project. After the AHU replacement is completed, a significant improvement to the energy use profile of the total system is expected.

PROGRESS TO DATE:

A study, completed in April 2017, provided requirements and the basis of design for new AHUs to replace the existing ones, as well as the timing, sequence, and logistics of installing the replacements. Construction documents based on these requirements were initiated in 2018 and completed in 2019.

IMPACT OF DELAY:

Air-handling equipment will continue to degrade, and increased maintenance will be required. Collections in the exhibition spaces and visitor comfort will be at higher risk due to potential failures and emergency shut-downs. The energy efficiency anticipated from a fully renewed HVAC system will not be achieved.

PROJECT TITLE: Replace Fire-Alarm Panels
INSTALLATION: National Museum of the American Indian (NMAI-DC)
LOCATION: Washington, DC

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$2,000
<u>FUTURE-YEAR FUNDING:</u>	<u>\$1,500</u>
	Total
	\$3,500

BUILDING BACKGROUND:

The National Museum of the American Indian was created by Congress in 1989 as the 16th Museum of the Smithsonian Institution. The NMAI is the only national museum dedicated to the Native peoples of North, South, and Central America. Its educational mission is to preserve, present, and celebrate the Native cultures of the Americas.

With campuses in New York City, Washington, DC, and Suitland, Maryland, the NMAI has one of the largest and most extensive collections of Native American art and artifacts in the world — approximately 800,000 objects representing more than 10,000 years of history, from more than 1,000 indigenous cultures throughout the Western hemisphere. The exterior of the building reflects traditional Indian culture by facing east toward the rising sun, reflecting Native American tradition, and the landscaping contains indigenous plants from areas where Indians once lived. Water flows around three sides of the building, adding to the illusion of water-worn limestone on the curved exterior. More than 40 boulders surround the building, representing ancestors of the Native Americans. Designed by Douglas Cardinal of the Canadian Blackfoot tribe and architecture firms GBQC and Polshek Partnership, the Museum opened to the public in 2004.

PROJECT JUSTIFICATION:

The Museum’s existing Siemens MXL fire-alarm system has been discontinued as of October 2018, which means spare parts are difficult to obtain. The MXL fire-alarm control panels need to be upgraded to the XLS series panels. The graphic annunciator panels and LCD displays at the main and south entrances also need to be upgraded with new internal components and new LCDs. Additionally, initiating devices are becoming obsolete and require replacement.

PROJECT DESCRIPTION:

The Smithsonian requests \$2.0 million in FY 2021 to replace and upgrade the 14 fire-alarm panels, two annunciator panels, and all other required elements for the NMAI-DC facility, including initiating devices. In order to install a future mass-notification system throughout the Smithsonian Institution, the design of the new fire-alarm panels will incorporate the capacity for a mass-notification system into the panels.

PROGRESS TO DATE:

Architecture and engineering design services for the full fire-alarm panel and initiating device replacement are at the 35 percent design stage and will be at 65 percent and ready for design assist procurement by the fourth quarter of FY 2020.

IMPACT OF DELAY:

An aging and out-of-date system runs the risk of failure and the possibility of endangering collections, visitors, and staff. In the worst-case scenario, a malfunctioning fire-alarm system could shut down the building.

PROJECT TITLE: Building Envelope — Replace Roof and Exterior Wall Panels
INSTALLATION: Hirshhorn Museum and Sculpture Garden (HMSG)
LOCATION: Washington, DC

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$12,900*
<u>PRIOR-YEAR FUNDING:</u>	\$8,500*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$3,400*</u>
Total	\$24,800*

* Does not include funding in Facilities Planning and Design

BUILDING BACKGROUND:

The Hirshhorn Museum and Sculpture Garden (HMSG), the Smithsonian Institution's Museum of modern and contemporary art, was designed by architect Gordon Bunshaft, FAIA, of Skidmore, Owings, and Merrill, and opened to the public in 1974. The Museum is located at the northwest corner of 7th Street and Independence Avenue, SW, and the Sculpture Garden is north of the Museum across Jefferson Drive. The building is cylindrical in shape, 231 feet in diameter, and raised 14 feet above a paved plaza, on four concrete piers. The building is clad with precast concrete panels with crushed pink granite aggregate. The center of the drum is a circular courtyard with a large, shallow, bronze fountain. The Museum building has four above-ground stories and a lower level below the plaza that surrounds the building.

PROJECT JUSTIFICATION:

This project is necessary to replace building envelope components which have reached the end of their useful life. The roof is more than 25 years old, and the section located directly above collections storage on the fourth floor occasionally leaks and is in need of replacement. The galvanized steel attachments for the exterior concrete wall panels have deteriorated and are beginning to corrode. The exterior wall lacks insulation and a vapor barrier, which causes problems with condensation and poor thermal performance.

PROJECT DESCRIPTION:

The Smithsonian requests \$12.9 million in FY 2021 to replace the roof and exterior wall panels at the HMSG. This is a multi-year funded project that will begin in FY 2020. The project includes replacing the precast concrete panels and their attachment system, adding insulation and a vapor barrier at the exterior wall, and replacing the roof and balcony storefront system to ensure continuity of waterproofing. Future building envelope projects will include replacement of waterproofing at the plaza and new glazing at the lobby and courtyard windows when the Museum closes for major revitalization of the building systems.

PROGRESS TO DATE:

A study of the building envelope was completed in FY 2017, followed by testing in FY 2018 to obtain additional information. Construction drawings were completed in January of 2020.

IMPACT OF DELAY:

Continued corrosion of the exterior panel attachment system creates the risk of panels becoming detached and falling to the plaza below, causing a public safety hazard. Water damage to the collections on the fourth floor could result if replacement of the roof is delayed.

PROJECT TITLE: Modernize Elevators
INSTALLATION: Hirshhorn Museum and Sculpture Garden (HMSG)
LOCATION: Washington, DC

FY 2021 COST ESTIMATE (Thousands of Dollars): \$3,400*

FUTURE-YEAR FUNDING: \$700*

Total \$4,100*

* Does not include funding in Facilities Planning and Design

BUILDING BACKGROUND:

The Hirshhorn Museum and Sculpture Garden (HMSG), the Smithsonian Institution's Museum of modern and contemporary art, was designed by architect Gordon Bunshaft, FAIA, of Skidmore, Owings, and Merrill, and opened to the public in 1974. The Museum is located at the northwest corner of 7th Street and Independence Avenue, SW, and the Sculpture Garden is north of the Museum across Jefferson Drive. The building is cylindrical in shape, 231 feet in diameter, and raised 14 feet above a paved plaza, on four concrete piers. The building is clad with precast concrete panels with crushed pink granite aggregate. The center of the drum is a circular courtyard with a large, shallow, bronze fountain. The Museum building has four above-ground stories and a lower level below the plaza that surrounds the building.

PROJECT JUSTIFICATION:

The passenger and freight elevators at the Museum are 20 years past their life expectancy and have frequent breakdowns. Many of the parts are becoming obsolete or difficult to obtain, which creates a delay in repairs. There is only one passenger elevator and one freight elevator, with no redundancy if an elevator breaks down.

PROJECT DESCRIPTION:

The Smithsonian requests \$3.4 million in FY 2021 to modernize the elevators at the HMSG. This is a multi-year funded project that begins in FY 2021. Major steel parts in the hoist-way will remain, but the controls, motors, and cabs will be replaced. The elevators and machine rooms will be brought up to current building codes, and the passenger elevator will become compliant with the Americans with Disabilities Act (ADA).

PROGRESS TO DATE:

A Vertical Transportation Study was funded in FY 2018 and is now completed. This study was a comprehensive analysis of the deficiencies of the current elevators, the escalators, and the loading dock lifts. Design for modernization will begin in October of 2020. Escalator repair and replacement of the loading dock lifts will be separate projects.

IMPACT OF DELAY:

Continued delay of modernization of the elevators poses the risk of more frequent breakdowns with longer repair times. The passenger elevator is the only means of access for visitors with strollers and people with disabilities to the galleries on the lower level, second and third floors. A functional freight elevator is essential for moving art and for the daily operations of the Museum.

PROJECT TITLE: Refurbish Elevators and Escalator
INSTALLATION: Quadrangle
LOCATION: Washington, DC

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$600
<u>FUTURE-YEAR FUNDING:</u>	<u>\$1,000</u>
Total	\$1,600

BUILDING BACKGROUND:

The Quadrangle Building, which comprises the National Museum of African Art, the Arthur M. Sackler Gallery, and the Ripley Education Center, is a three-story underground building that opened to the public in 1987. There are pavilion entrances to the three facilities located in the Haupt Garden, the structure's green roof. The 389,000-square-foot building was designed by Shepley, Bullfinch, and Abbott, architects.

PROJECT JUSTIFICATION:

The building's elevators and escalators are original to the building and more than 30 years old. Although the elevators most used by the visiting public have been upgraded, those in staff areas have not, nor has the public escalator. The escalator and the staff elevators break down with increasing frequency, inconveniencing both visitors and staff.

PROJECT DESCRIPTION:

The Smithsonian requests \$600,000 in FY 2021 to initiate the refurbishment of the Quadrangle elevators and escalator.

PROGRESS TO DATE:

Planning for the work is being led by the vertical transportation division of the Smithsonian's Office of Facilities Maintenance and Reliability.

IMPACT OF DELAY:

If not funded, the required equipment upgrades will be further postponed, increasing the probability of catastrophic failure of these essential systems.

PROJECT TITLE: Quad and Freer Electronic Security System
INSTALLATION: Quadrangle
LOCATION: Washington, DC

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	<u>\$4,500</u>
Total	\$4,500

BUILDING BACKGROUND:

The Quadrangle Building, which comprises the National Museum of African Art, the Arthur M. Sackler Gallery, and the Ripley Education Center, is a three-story underground building that opened to the public in 1987. There are pavilion entrances to the three facilities located in the Haupt Garden, the structure's green roof. The 389,000-square-foot building was designed by Shepley, Bullfinch, and Abbott, architects. The 225,000-square-foot Freer Gallery of Art, the Smithsonian's first Museum dedicated to the fine arts, was designed by Charles Platt and opened to the public in 1923.

PROJECT JUSTIFICATION:

The Quadrangle and the Freer Gallery of Art are linked facilities and do not have dependable, comprehensive electronic security systems. Existing devices and equipment are obsolete and do not meet Smithsonian security design standards.

PROJECT DESCRIPTION:

Work includes the removal and replacement of existing security devices and replacing them with new security devices required by the Smithsonian's security design criteria, as well as minimal electrical and architectural finish and hardware modifications necessary for the security equipment to be powered and installed within the existing buildings. The Smithsonian requests \$4.5 million in FY 2021 to upgrade the electronic security system.

PROGRESS TO DATE:

The design of the system will be completed in FY 2020.

IMPACT OF DELAY:

If the work is not funded, the building occupants and collections will face increased security risks.

PROJECT TITLE: Refurbish National Museum of African Art (NMAfA) Education Center
INSTALLATION: Quadrangle
LOCATION: Washington, DC

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	<u>\$1,000</u>
Total	\$1,000

BUILDING BACKGROUND:

The Quadrangle Building, which comprises the National Museum of African Art, the Arthur M. Sackler Gallery, and the Ripley Education Center, is a three-story underground building that opened to the public in 1987. There are pavilion entrances to the three facilities located in the Haupt Garden, the structure's green roof. The 389,000-square-foot building was designed by Shepley, Bullfinch, and Abbott, architects.

PROJECT JUSTIFICATION:

The Museum's library, education facilities, and administrative areas have not been updated since the building's opening in 1987. Public access to the library and education facilities is compromised.

PROJECT DESCRIPTION:

The Smithsonian requests \$1.0 million in FY 2021 to fund the reconfiguration of the public entrance to the library, education facilities, and administrative offices.

PROGRESS TO DATE:

The design of the proposed remodeling will be completed in FY 2020.

IMPACT OF DELAY:

If not funded, public access to the library and education facilities will continue to be compromised, making it more difficult for visitors to use these resources.

PROJECT TITLE: Replace Gallery Lighting
INSTALLATION: Donald W. Reynolds Center (DWRC)
LOCATION: Washington, DC

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$3,500
<u>PRIOR-YEAR FUNDING:</u>	\$4,500
<u>FUTURE-YEAR FUNDING:</u>	<u>\$3,500</u>
Total	\$11,500

BUILDING BACKGROUND:

Originally constructed as the Patent Office Building in 1840, the Donald W. Reynolds Center is an excellent example of a Greek Revival public office building. The South Wing is the original building and is distinguished by a monumental Greek Doric-style portico. The East, West, and North Wings, added between 1852 and 1867, expanded the building to occupy two entire blocks between 7th and 9th Streets and between F and G Streets NW, Washington, DC. The total gross square footage is 669,931 square feet. A major renovation of the building was completed in 2006 by Hartman Cox. In 2007, the center courtyard was enclosed by a glass canopy designed by Norman Foster.

PROJECT JUSTIFICATION:

The track lighting at the Reynolds Center overheats, causing a hazardous situation. Repairing the track requires replacement parts; however, the current type of track lighting used is no longer being manufactured and parts are no longer available for repairs. Track lighting throughout the building must be replaced. The new LED light fixtures will provide greater flexibility and improved energy efficiency.

PROJECT DESCRIPTION:

The Smithsonian requests \$3.5 million in FY 2021 to continue replacement of the existing track lighting in the galleries and other locations at the Reynolds Center with a new LED track lighting system. This is a multi-year funded project that began in FY 2019 and will be completed in FY 2022.

PROGRESS TO DATE:

Design for the new lighting system was completed in March of 2019. A detailed schedule was developed for the sequence of work in the galleries and has been coordinated with exhibit dates and museum programs. Installation of the new lighting system in the third-floor galleries was completed in October of 2019. Installation of lighting in the first-floor café, gift shops, and corridors began in late January of 2020.

IMPACT OF DELAY:

Without the funds requested, there could be potential damage to the collections and safety risks to staff and visitors due to fire. Sensors have been installed to provide a warning that the light track is overheating, but the risk needs to be eliminated by replacing the track and fixtures.

PROJECT TITLE: Galeta, Replace and Improve Facilities (Phase 2)
INSTALLATION: Smithsonian Tropical Research Institute (STRI)
LOCATION: Panama

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$2,500*
<u>PRIOR-YEAR FUNDING:</u>	\$1,700*
<u>FUTURE-YEAR FUNDING:</u>	<u>\$6,500*</u>
Total	\$10,700*

* Does not include funding in Facilities Planning and Design

BUILDING BACKGROUND:

The Galeta Marine Station is located near the Caribbean terminal of the Panama Canal and the city of Colon. It serves as a laboratory, marine and wetland environmental monitoring station, as well as an education and outreach center for STRI. The site includes several small dormitories, a laboratory building, a small administration structure, and support buildings.

PROJECT JUSTIFICATION:

The buildings at Galeta Marine Station are located directly on an eroding shoreline and are experiencing seawater infiltration during high tides and windy conditions. In addition, the existing laboratory and dormitories are located in old, outdated buildings that are not compliant with current building codes. Among many deficiencies, they do not have a fire-suppression system and the current sanitary and potable water systems are substandard.

PROJECT DESCRIPTION:

The Smithsonian requests \$2.5 million in FY 2021 for Phase 2 of this project, which includes the installation of a new wastewater treatment plant and sanitary system that will serve current and future facilities. As part of STRI's Facilities Master Plan, the existing dormitories and laboratory will be replaced with code-compliant structures to safely host the research, education, and outreach activities at Galeta. A fire-protection system will be installed to provide full sprinkler coverage to new and existing buildings. Additional infrastructure work includes a new wastewater system and upgrades to the existing potable water and main electrical systems. Subsequent phases for this project will incorporate a replacement laboratory/ administration building (Phase 3), and a replacement dormitory building (Phase 4).

PROGRESS TO DATE:

Design is ongoing and the construction contract for Phase 1 is scheduled to be awarded by the end of FY 2020. Phase 2 will begin construction in FY 2021.

IMPACT OF DELAY:

The Galeta Marine Station requires major renovations at many essential facilities, including the laboratory, administration building, and dormitories. Basic infrastructure services like sanitary and potable water urgently need upgrades. To meet Smithsonian standards for fire protection and life safety, a fire-suppression system must be installed at existing facilities and included in the designs for future facilities. Delaying this project will increase maintenance costs and impair STRI's ability to conduct research and educational programs at Galeta, and potentially endanger visitors and staff.

PROJECT TITLE: Tupper, Renovate Kitchen and Dining Area
INSTALLATION: Smithsonian Tropical Research Institute (STRI)
LOCATION: Panama

FY 2021 COST ESTIMATE (Thousands of Dollars):

\$ 400*

* Does not include funding in Facilities Planning and Design

BUILDING BACKGROUND:

The Tupper Center for Research and Conference, inaugurated in 1990, includes a staff cafeteria and dining space for staff and visitors. Through the years, these dining facilities have been occupied by various concessionaries. Although originally envisioned to serve light meals such as salads and sandwiches, the need for more diverse food options required small renovations to more intensively use the space to serve cafeteria-style hot meals.

PROJECT JUSTIFICATION:

The cafeteria space needs a complete renovation to replace the mechanical, life-safety, and fire-protection systems to meet code compliance.

PROJECT DESCRIPTION:

The Smithsonian requests \$400,000 in FY 2021 to renovate and expand the kitchen and dining areas. Since the ongoing Tupper renovation project will provide additional exterior dining space, the kitchen and service areas will be renovated to better accommodate the food storage and cooking functions. Exhausts and air-conditioning systems will be completely revamped, as will the fire-detection and fire-suppression systems.

PROGRESS TO DATE:

A scope of work for design services is being prepared and design funds have been requested for FY 2020.

IMPACT OF DELAY:

Delaying this project will continue to impact STRI's ability to obtain food service operators, few of which are willing to operate within the limitations of the current space. A new and improved cafeteria with modern systems and bigger spaces will provide STRI staff and visitors a better experience, with a diversity of meal options within the Smithsonian's main campus in the Republic of Panama.

PROJECT TITLE: Tupper, Replace and Reinforce Library Roof
INSTALLATION: Smithsonian Tropical Research Institute (STRI)
LOCATION: Panama

FY 2021 COST ESTIMATE (Thousands of Dollars):

\$ 300*

* Does not include funding in Facilities Planning and Design

BUILDING BACKGROUND:

The Tupper Center's Library Building was built in the 1980s as part of the Tupper Campus Complex. It has served for many years as one of the most complete and diverse libraries in the world for tropical biology publications, with enormous historical and scientific research value. The building is made up of two main wings: the library-reading and office area, and the storage-deposit area for books, other publications, and special collections.

PROJECT JUSTIFICATION:

Preservation of this facility and the publications within it is essential to STRI's historical mission. Maintenance repairs have continued through the years to stop water from leaking into the reading space wing, but the roof material and its entire construction is reaching the end of its projected lifespan.

PROJECT DESCRIPTION:

The Smithsonian requests \$300,000 in FY 2021 to begin replacing and reinforcing the library roof. The project will also require a structural evaluation of the existing framing system, which will support the new roofing material.

PROGRESS TO DATE:

A scope of work for design services is being prepared and design funds have been requested for FY 2020.

IMPACT OF DELAY:

Delaying this project will increase maintenance costs for immediate repairs and for temporary solutions implemented to keep the roof from leaking. Water leakages will create a variety of safety hazards to STRI's staff and visitors and could damage precious historical and research publications and books inside the building.

PROJECT TITLE: Gamboa, Refurbish Santa Cruz Building
INSTALLATION: Smithsonian Tropical Research Institute (STRI)
LOCATION: Panama

FY 2021 COST ESTIMATE (Thousands of Dollars):

\$1,300*

* Does not include funding in Facilities Planning and Design

BUILDING BACKGROUND:

STRI has a research facility at Gamboa, which is located on the east bank of the Panama Canal, 17 miles north of Panama City and 13 miles south of Barro Colorado Island (BCI), is midway between both sites, and provides an excellent location for terrestrial scientific investigation.

PROJECT JUSTIFICATION:

Given the increased activity of STRI at Gamboa, generated by the recently constructed laboratory building, there is a need to establish a maintenance operations center at this site. Furthermore, with the Gamboa dock less than a mile away from the new lab building, the new maintenance center will allow the Smithsonian Facilities office to operate more efficiently at both the Gamboa and BCI sites.

PROJECT DESCRIPTION:

The Smithsonian requests \$1.3 million in FY 2021 to retrofit approximately 550 square meters of the old Santa Cruz school building into maintenance shops for the Smithsonian Facilities Gamboa branch. The building was originally a three-story wooden structure on a concrete foundation, but today only the concrete ground floor, columns, and masonry walls remain. In 2012, the building was retrofitted and roofed for the temporary field office and warehouse of the Gamboa Lab project contractor.

PROGRESS TO DATE:

The construction documents for this project are nearing completion.

IMPACT OF DELAY:

Delaying the project will prevent STRI's maintenance unit from establishing a much-needed centralized operation at Gamboa to support the new Gamboa research laboratory as well as BCI's motor vehicle and marine fleet.

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

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$800
<u>PRIOR-YEAR FUNDING:</u>	\$1,700
<u>FUTURE-YEAR FUNDING:</u>	<u>\$3,200</u>
Total	\$5,700

PROJECT BACKGROUND:

The Smithsonian Astrophysical Observatory (SAO) is located at the summit of Mt. Hopkins, at an elevation of 8,550 feet, reachable only by Mt. Hopkins Road, a 12-mile-long, unimproved, single-lane access road. The road was constructed by the Smithsonian more than 50 years ago to accommodate traffic by SAO research faculty, staff and students, as well as contractors and some members of the public. Telescopes are sited on the summit peaks. SAO activities on Mt. Hopkins require access to and from its facilities at the Base Camp (located at 4,500 feet) and the summit to conduct basic operations, research, and educational activities that form its core mission.

PROJECT DESCRIPTION:

The Smithsonian requests \$800,000 in FY 2021 to stabilize the road and replace the metal culverts with concrete culverts to mitigate life-safety issues. The surface of the single-lane road is largely unpaved, outsloped to the canyons 1,300 feet below, and is uneven with numerous switchbacks. Several sections are sloped at a 24-percent grade, which is well outside the anticipated capability of drivers, standard vehicles and pedestrians. Severe weather is commonplace, and the road requires frequent grading and maintenance to provide a minimum level of safety. Most crucially, in addition to ongoing repair and replacement/extension of guardrails, SAO has identified six sections of the road that have been stabilized against collapse by 60–70-year-old landing mats and steel cables. There has been significant movement and rupture of this system that must be corrected immediately. In addition, the road has numerous 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.

PROGRESS TO DATE:

Design is complete. Construction for the first two of the prioritized six sections was completed in FY 2019, and the contract for the third section was awarded in FY 2019 and construction started in October of 2019. The requested funds will continue to rectify this significant safety hazard.

IMPACT OF DELAY:

Until funding is available to complete the necessary road work, SAO staff, visitors, and scientists will continue to face increased life-safety risks when driving to and from the Observatory.

PROJECT TITLE: Install Emergency Generator, Phase 2 (AZ)
INSTALLATION: Smithsonian Astrophysical Observatory (SAO)
LOCATION: Amado, Arizona

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$600
<u>PRIOR-YEAR FUNDING:</u>	<u>\$75</u>
Total	\$675

PROJECT BACKGROUND:

SAO's Fred Lawrence Whipple Observatory in Arizona conducts world-renowned astrophysical research from the MMT (Multiple Mirror Telescope) building on the summit of Mt. Hopkins and from its Base Camp facility. Currently, the MMT has emergency generator capability but the Base Camp does not. It is essential for the Base Camp facility to operate life, fire, safety, communications and other full operational functions with emergency systems in place. Additionally, because the two facilities are remote from each other, and both are located in high wildfire risk areas, the system will ensure better communication and improve staff and public safety.

PROJECT DESCRIPTION:

The Smithsonian requests \$600,000 in FY 2021 to install a complete emergency generator system at the Base Camp.

PROGRESS TO DATE:

Design will be completed in FY 2020.

IMPACT OF DELAY:

Without adequate emergency power generation, the Base Camp's ability to respond to critical life-safety threats will be severely compromised, creating a danger to staff and public visitors.

PROJECT TITLE: Replace Packaged Air-Conditioning Unit (PACU) at SMA Control Building (HI)
INSTALLATION: Smithsonian Astrophysical Observatory (SAO)
LOCATION: Summit of Maunakea, Hawaii

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$2,000
<u>PRIOR-YEAR FUNDING</u>	<u>\$335</u>
Total	\$2,335

PROJECT BACKGROUND:

The SAO's Submillimeter Array (SMA) Control Building, located at the 13,476-foot summit of Maunakea, is world-recognized for leading-edge astrophysical research and discovery of our universe through examination of submillimeter wavelengths. This capability is possible through an extensive computer facility within the building, which requires cooling to maintain accuracy and reliability. The PACU is responsible for this critical function. It is 15 years beyond its expected lifespan and all available spare parts are now gone.

PROJECT DESCRIPTION:

The Smithsonian requests \$2.0 million in FY 2021 to install a new PACU to ensure continued research and reliability to meet the mission of SAO.

PROGRESS TO DATE:

Design will be completed in the third quarter of FY 2020.

IMPACT OF DELAY:

A failure of this system will shut down the entire facility for a minimum of nine months, and result in the loss of all ongoing scientific research as well as delays in planned research.

PROJECT TITLE: Consolidate Maintenance Facilities
INSTALLATION: Smithsonian Environmental Research Center (SERC)
LOCATION: Edgewater, Maryland

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$4,000
<u>PRIOR-YEAR FUNDING</u>	\$1,000
<u>FUTURE-YEAR FUNDING:</u>	<u>\$3,500</u>
Total	\$8,500

PROJECT BACKGROUND:

The substantial expansion of the SERC facilities during the last decade has increased SERC's maintenance needs campus-wide and has placed an increasing burden on the existing facilities maintenance resources. This need was identified by the Smithsonian Office of Facilities Management and Reliability (OFMR) in 2004 and validated again in the 2008 SERC Master Plan. This need is now vital to support existing facilities as well as future mission-critical initiatives.

PROJECT DESCRIPTION:

The Smithsonian requests \$4.0 million in FY 2021 to begin Phase One of the project, which consolidates grounds maintenance functions (previously at the Research Core) along the Dock Road location, allowing de-intensification of the Research Core, and to prepare the site by installing utilities, lighting, staging areas, communications, and stormwater management systems. Later, Phase Two will renovate the auto-shops and hazmat functions. In addition to reducing utility and maintenance costs, the project will revitalize maintenance response, enhance physical safety, build future flexibility, increase the lifespan of equipment, support sustainable operations, streamline operations, and increase productivity.

PROGRESS TO DATE:

Design will be completed in FY 2020.

IMPACT OF DELAY:

The impact of a delay will be continued loss of productivity, advanced decline of equipment and structures, longer response times to requests for service, and increased cost of all maintenance activities at SERC.

PROJECT TITLE: Install Site Infrastructure for Green Village
INSTALLATION: Smithsonian Environmental Research Center (SERC)
LOCATION: Edgewater, Maryland

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$1,500
<u>PRIOR-YEAR FUNDING</u>	<u>\$220</u>
Total	\$1,720

PROJECT BACKGROUND:

The Smithsonian Environmental Research Center relies on the active participation of visiting scientists who work at the Edgewater facility for periods from a few weeks to six months or more. There are no on-site family housing facilities; therefore, these scientists and their families are left to find housing on their own, which severely discourages participation. The Green Village is a fully sustainable project at SERC, envisioned to be zero-net-energy consumption and designed as a public/private partnership to provide six two-story, two-family, grant-funded housing units for visiting scientists. The units will be approximately 1,200 square feet each, and a future 24-unit Citizen's Scientist Lodge will also be constructed. The housing units, and lodge, will be built along a central utility corridor. The housing units will be completely funded with grant money, but the required utility corridor will be built using federal funding. All maintenance for the Green Village will be offset by rent.

PROJECT DESCRIPTION:

The Smithsonian requests \$1.5 million in FY 2021 to construct all required utility infrastructure, transportation and paving systems, lighting and communications, grading, landscaping, and stormwater management systems.

PROGRESS TO DATE:

Design is under way and will be completed in the second quarter of FY 2020.

IMPACT OF DELAY:

The impact of a delay will be a later start construction date of the Green Village build-out, which has raised more than \$600,000 in grant funds for the first two housing units. A delay will put these funds at risk, as well as compromise future grant funding currently in progress.

PROJECT TITLE: Implement Stormwater Management Campus Plan, Phase 1
INSTALLATION: Smithsonian Environmental Research Center (SERC)
LOCATION: Edgewater, Maryland

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$400
<u>PRIOR-YEAR FUNDING</u>	<u>\$85</u>
Total	\$485

PROJECT BACKGROUND:

As identified in the 2008 SERC Comprehensive Facilities Master Plan, and pursuant to current federal Clean Water Act regulations, SERC has prioritized environmentally responsible stormwater management responses which are now reflected in the current Stormwater Management Campus Plan. This plan identified the Reed Education Center site, at the foot of the waterfront's Dock Road, as the highest priority. Continued flooding has entered the Reed Center, which is frequented by between 5,000–7,000 schoolchildren a year, and mitigation has been necessary to prevent mold from forming on surfaces.

PROJECT DESCRIPTION:

The Smithsonian requests \$400,000 in FY 2021 to construct all required stormwater management mitigation necessary to protect the site and structures. This will involve relocating existing drainage patterns, constructing bioswales as necessary, repaving as required to re-route stormwater away from the Reed Center, and repairing/removing/replacing drains, culverts and outfalls.

PROGRESS TO DATE:

Design is under way and will be completed in FY 2020.

IMPACT OF DELAY:

The impact of a delay will be continued deterioration of the Reed Education Center and resultant risk to the visitors and staff using the structure, as well as continued non-compliance with current government mandates.

PROJECT TITLE: Replace MSC Air-Handling Units (AHUs)
INSTALLATION: Suitland Collections Center
LOCATION: Suitland, Maryland

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$5,000
<u>PRIOR-YEAR FUNDING:</u>	\$5,259
<u>FUTURE-YEAR FUNDING:</u>	<u>\$19,000</u>
Total	\$29,259

BUILDING BACKGROUND:

The Museum Support Center (MSC) at the Smithsonian Institution's Suitland Collections Center (SCC) is the Smithsonian's largest collections storage facility. Opened in 1983, the three-story structure has five separate storage areas (Pods), as well as labs and office areas to support the care and analysis of the Institution's valuable collections of objects and documents. The storage pods and offices are separated by an access corridor (the Street) that allows movement of objects within the building.

PROJECT JUSTIFICATION:

Eleven of the air-handling units (AHUs) supporting the heating, ventilation, and air-conditioning (HVAC) system in Pods 1, 2, and 4, the Street, and the lab/office areas are original to the building and have exceeded their useful lives. They urgently require replacement.

PROJECT DESCRIPTION:

The Smithsonian requests \$5.0 million in FY 2021 to continue replacing the lab/office AHUs. The lab/office AHUs are first priority, due to the numerous changes in the space use during the past 37 years. Pod AHUs will be replaced one at a time to ensure that the collections environment is maintained in the facility throughout the process. Additional funding in FYs 2022–2024 will be used to finish replacing the remaining AHUs.

PROGRESS TO DATE:

Design for pod AHU replacement was completed in June of 2017. Lab/office AHU design is 95 percent complete, and the final design was completed in January of 2020.

IMPACT OF DELAY:

Failure to replace the AHUs in a timely manner will put the facility's collections environment, and the priceless objects contained in the pods, at risk.

PROJECT TITLE: Replace Museum Support Center (MSC) Botany Greenhouse
INSTALLATION: Suitland Collections Center
LOCATION: Suitland, Maryland

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$2,000
<u>PRIOR-YEAR FUNDING:</u>	\$1,284
<u>FUTURE-YEAR FUNDING</u>	<u>\$5,000</u>
Total	\$8,284

PROJECT DESCRIPTION:

The Smithsonian requests \$2.0 million in FY 2021 to replace the National Museum of Natural History (NMNH) Botany Greenhouse at its Suitland Collections Center. This work is necessary due to the upcoming Museum Support Center (MSC) Pod 6 addition, which is scheduled to begin construction in FY 2023. The Pod 6 project will extend onto the site of the existing Botany Greenhouse. An addition to the existing Smithsonian Gardens greenhouse complex on the Suitland campus will be made to accommodate the NMNH greenhouse contents.

PROGRESS TO DATE:

The design for this project is currently at the concept phase. The design will be completed in FY 2021.

IMPACT OF DELAY:

Failure to construct an addition to existing Smithsonian greenhouse infrastructure before the existing NMNH greenhouse is demolished will result in the need to lease greenhouse space to continue NMNH's research into botany-related science, making the work more expensive to accomplish.

PROJECT TITLE: Upgrade Garber Fire-Protection Systems
INSTALLATION: Suitland Collections Center
LOCATION: Suitland, Maryland

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$1,500
<u>PRIOR-YEAR FUNDING:</u>	<u>\$137</u>
Total	\$1,637

PROJECT DESCRIPTION:

The Smithsonian requests \$1.5 million in FY 2021 to upgrade the fire protection in 11 buildings at the Suitland Collections Center Garber facility. The buildings, which house Smithsonian collections, are 40–50 years old and do not meet current codes and standards for fire protection. The project will upgrade the fire-alarm and fire-protection systems in each building to meet the latest codes and standards.

PROGRESS TO DATE:

The design work for this project was completed in FY 2016.

IMPACT OF DELAY:

Failure to upgrade the fire-protection systems in the collection storage buildings means that the collections in those buildings will continue to be poorly protected by decades-old fire-alarm and protection systems, thereby putting priceless objects and specimens at risk.

PROJECT TITLE: Decontaminate and Dispose of Garber Containers
INSTALLATION: Suitland Collections Center
LOCATION: Suitland, Maryland

FY 2021 COST ESTIMATE (Thousands of Dollars): \$500

Total \$500

PROJECT DESCRIPTION:

The Smithsonian requests \$500,000 in FY 2021 to remove the Center for Folklife and Cultural Heritage (CFCH) and the National Museum of American History (NMAH) collection items from 12 temporary containers that are contaminated with asbestos. The project includes decontaminating the collections, moving the items to safe locations, and safely disposing of the containers.

PROGRESS TO DATE:

The planning for this work is complete.

IMPACT OF DELAY:

Failure to decontaminate the collections and dispose of the containers will continue to delay access to the collection items, as well as leave the collections exposed to hazardous conditions in dilapidated containers. It would also pose an ongoing health risk to Smithsonian staff at the facility.

PROJECT TITLE: Repair Miller-Fox Façades
INSTALLATION: Cooper Hewitt, Smithsonian Design Museum (CHSDM)
LOCATION: New York, New York

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$3,000
<u>FUTURE-YEAR FUNDING:</u>	<u>\$3,000</u>
Total	\$ 6,000

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. In 1996, the adjacent Miller and Fox houses were acquired and a major renovation to link the houses to the Mansion was begun, creating the full campus that presently houses the Museum.

PROJECT JUSTIFICATION:

The façade elements of the Cooper Hewitt Miller and Fox houses have deteriorated and become a source of water intrusion and structural concern. Stone coping and decorative elements require repair, masonry mortar joints require repointing and, in some cases, rebuilding due to instability. Copper clad bows and bays have aged and become a source of water and air leakage. Window frames have deteriorated from winter condensation and some need to be replaced. Numerous water intrusion events have occurred in recent years and risk disruption to staff areas and danger to collections.

PROJECT DESCRIPTION:

The Smithsonian requests \$3.0 million in FY 2021 to begin the first sequence of the Miller-Fox façade and envelope repairs. The first sequence will include the areas of highest risk, including the unstable masonry parapet. Because scaffolding will be necessary, the work of several trades will progress one façade at a time. This will include brick and stone masonry repairs, copper bows and bays sheathing repairs, and window repairs/replacements.

PROGRESS TO DATE:

Construction documents for the repair of the copper façade bows and bays were completed in 2017. The A-E design contract for the masonry and window repairs will be awarded in the second quarter of FY 2020 and completed in the first quarter of FY 2021.

IMPACT OF DELAY:

Delaying this project will continue to risk damage to collections areas and interruptions to staff operations due to water intrusion. Resulting condensation will remain unmitigated.

PROJECT TITLE: Add Exterior Lighting, Power and Accessibility
INSTALLATION: Cooper Hewitt, Smithsonian Design Museum (CHSDM)
LOCATION: New York, New York

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	<u>\$2,100</u>
Total	\$2,100

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. In 1996, the adjacent Miller and Fox houses were acquired and a major renovation to link the houses to the Mansion was begun, creating the full campus that presently houses the Museum.

PROJECT JUSTIFICATION:

The CHSDM Mansion lacks night lighting to accent the architectural character of the building and highlight and identify the Museum along the Fifth Avenue "Museum Mile." Existing security lighting is crude and not well paired with the security camera installation to be included with this project. The available power in the garden is inadequate for the many special events that occur. Special event power needs include food preparation equipment, lighting, audiovisual and media facilities. Larger events require permits for a portable power generator to stage activities at the Fifth Avenue location. The 90th Street accessible lift for staff and visitors is not reliable and requires frequent maintenance. It is usually out of service and not available for those with disabilities. A new fully accessible entrance through the garden into the Miller house security lobby is needed, enabling the removal of the high-maintenance and unreliable exterior lift. The Mansion-accessible lift (LULA Elevator #5) is often not working and parts are no longer available. The Museum Café sales area and dining bridge is excessively hot in the summer and cold in the winter, causing discomfort to the employees and visitors.

PROJECT DESCRIPTION:

The Smithsonian requests \$2.1 million in FY 2021 to provide several campus improvements. Exterior and night lighting will be improved by adding exterior architectural lighting to the base of the Mansion and the inefficient security light wall packs will be replaced with focused, parapet-mounted security lighting that is compatible with the newer generation of security cameras to be installed. Additionally, the project will make existing campus power sources available to the garden for special events by installing conduit and panel boxes on the Miller House walls.

The project also includes a fully accessible staff/ visitor entrance through the garden and into the staff entrance lobby of the Miller House. This includes a new intercom at the garden gate, appropriate accessible hardware and hold-open devices at the lobby door, and removal of the existing exterior mechanical lift, as well as restoration of the

historic Miller House stairs that were removed to install the lift. The accessible lift (LULA #5) in the Mansion lobby will be replaced with a reliable, new lift.

Finally, the project will provide split-system heating and cooling for the Café sales area and the dining bridge to temper the indoor air during extreme summer and winter weather conditions.

PROGRESS TO DATE:

An architecture and engineering (A/E) concept study for the exterior Mansion lighting was completed in FY 2019, providing various options and preliminary cost estimates. An A/E schematic design and cost estimate, including all elements of the project scope, was delivered in August of 2019. Final design will commence in the second quarter of FY 2020 and complete design is expected by the fourth quarter of FY 2020.

IMPACT OF DELAY:

If this project is not funded, security and night lighting will continue to be less than optimal, people with disabilities coming to the staff entrance on 90th Street will continue to navigate a challenging work-around, using the existing intercom and requiring a security guard to escort them into the building through the garden. The existing lift will continue to be an eyesore for the CHSDM neighbors. Visitors and staff entering through the Mansion will continue to experience unreliable performance from the accessible lift. Special events in the garden will continue to require leasing and permitting for temporary power generators. Staff in the Café sales area will continue to experience excessive heat in the summer and bitter cold in the winter.

PROJECT TITLE: Improve Courtyard Accessibility
INSTALLATION: Freer Gallery of Art
LOCATION: Washington, DC

FY 2021 COST ESTIMATE (Thousands of Dollars): \$2,500

Total \$2,500

BUILDING BACKGROUND:

The 225,000-square-foot Freer Gallery of Art was constructed between 1916 and 1923 on the National Mall to house the art collections of Charles Lang Freer. It was the first Smithsonian Museum devoted to the fine arts.

PROJECT JUSTIFICATION:

The Museum courtyard is several steps below the first floor level and is not accessible to visitors using wheelchairs. As a result, the public cannot be given access to the courtyard.

PROJECT DESCRIPTION:

The Smithsonian requests \$2.5 million in FY 2021 to install a ramp, which will feature a design to be compatible with the architecture of the landmarked building.

PROGRESS TO DATE:

Design will be completed in FY 2020.

IMPACT OF DELAY:

Without the construction of a ramp, the courtyard cannot be used by the visiting public.

PROJECT TITLE: Install Transfer Switch
INSTALLATION: Herndon Data Center
LOCATION: Herndon, Virginia

FY 2021 COST ESTIMATE (Thousands of Dollars):

\$2,650

BUILDING BACKGROUND:

This facility, located at 380 Herndon-Spring Park in Herndon, houses the Office of the Chief Information Officer (OCIO) and includes 53,000 square feet of the Smithsonian's centralized computer network Data Center equipment, offices, the Institution's network help call center, and support spaces.

PROJECT JUSTIFICATION:

The transfer switch is necessary to eliminate a single point of failure for the entire Smithsonian Data Center and network operations by allowing the emergency generators and the Uninterrupted Power Supply (UPS) to bypass the main switchgear to keep the facility operational.

PROJECT DESCRIPTION:

The Smithsonian requests \$2.65 million in FY 2021 to install a transfer switch and associated electrical components to allow the Smithsonian Data Center, located in a leased facility in Herndon, Virginia since 2005, to continue to function should the main switchgear fail. Currently, all electrical backup systems energize the Data Center through the main switchgear. Should the main switchgear become inoperable, the entire Smithsonian computer network, Voice-over Internet Protocol (VoIP) telephone system, and Data Center will shut down entirely. This transfer switch will also allow for regular maintenance of the main switchgear.

PROGRESS TO DATE:

Design began in FY 2019 and will be completed in FY 2020. Construction will be awarded in FY 2021.

IMPACT OF DELAY:

Delaying this project will put the Smithsonian computer network, Voice-over Internet Protocol (VOIP), and the Data Center at risk of catastrophic failure if the main switchgear becomes inoperative.

PROJECT TITLE: Replace Fire-Alarm Panels
INSTALLATION: Multiple Facilities
LOCATION: Institution-wide

<u>FY 2021 COST ESTIMATE (Thousands of Dollars):</u>	\$2,000
<u>PRIOR-YEAR FUNDING:</u>	\$6,000
<u>FUTURE-YEAR FUNDING:</u>	<u>\$4,000</u>
Total	\$12,000

PROJECT DESCRIPTION:

The Smithsonian requests \$2.0 million in FY 2021 to continue the phased replacement of MXL fire-alarm panels with XLS panels in facilities across the Institution. Current MXL fire-alarm panels have been discontinued and the parts will cease to be available once supplies run out. The old MXL panels will be salvaged and used for parts until all panels are upgraded to XLS. As many as 75 panels at various facilities throughout the Smithsonian require eventual replacement. For some facilities, the fire-alarm panel replacements are being incorporated in larger renovation projects. However, for facilities where no large renovation projects are planned in the near future, these funds will be used for stand-alone fire-alarm panel replacement projects. Thus far, panel replacements were completed at the Donald W. Reynolds Center (DWRC) and have begun at the National Zoological Park (NZIP) Rock Creek Park campus in Washington, DC. In FY 2020, panel replacements will take place at the National Museum of the American Indian in New York (NMAI-NY) and will be initiated at the Garber facilities on the Suitland Collections Center campus. In FY 2021, fire-alarm panel replacements for the rest of the Garber buildings at the Suitland Collections Center campus and at the National Air and Space Museum's Udvar-Hazy Center (NASM-UHC) will take place. The program will continue with future-year funding for fire-alarm panel replacements at the remaining buildings at both NZIP sites at Rock Creek in Washington, DC and Front Royal, Virginia. The new fire-alarm panels will have the capability to link to future mass-notification systems. Improved mass-notification systems, in turn, will permit the use of specific emergency notification messages about events such as active shooters, fires, and terror attacks in buildings throughout the Institution.

PROJECT TITLE: Building Projects Less than \$1,000,000 and Miscellaneous Repairs
INSTALLATION: Multiple Locations
LOCATION: Institution-wide

FY 2021 COST ESTIMATE (Thousands of Dollars): \$8,900

PROJECT DESCRIPTION:

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

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

FY 2021 COST ESTIMATE (Thousands of Dollars): \$8,000

PRIOR-YEAR FUNDING: \$7,000

PROJECT DESCRIPTION:

This request includes costs for permanent construction management and cost-engineering staff, program/project managers, five (5) contract specialists, and term and temporary staff required to perform specialized work associated with Facilities Capital Program projects. A total of 53 FTEs will be funded from the \$8.0 million.

Construction management staff supervise and administer construction contracts. They directly supervise construction contractors to ensure quality work is performed safely, resolve issues that arise during construction, negotiate change orders, approve payments, and perform other administrative functions as contracting officers' technical representatives (COTRs). Cost engineers develop Independent Government Estimates for every stage of project development, as well as analyze consultant-prepared construction cost estimates and contractor cost proposals for construction contract awards and change orders. This request also funds contract specialists who support the procurement process for acquiring the necessary contract services to execute the Facilities Capital Program by providing essential expertise to ensure the timely award of planning, design, and construction contracts.

FACILITIES PLANNING AND DESIGN

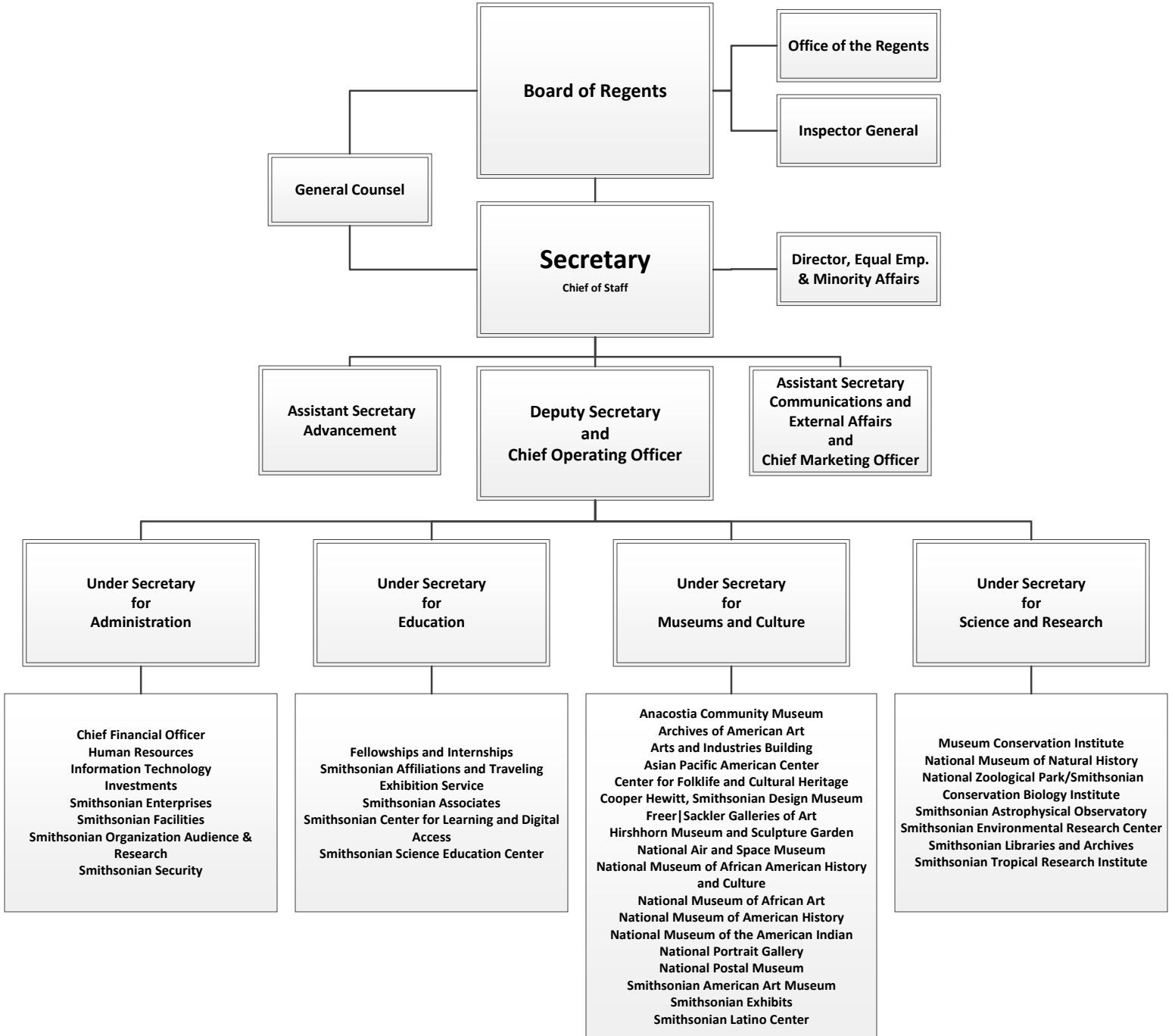
Feasibility studies, needs assessments, and design for capital projects are required before site work can take place. This category includes all costs for contract facility master planning, preliminary and final design for all revitalization and construction projects, special studies, and a small amount for facility engineering, capital leveraging, and research activities, such as those functions performed at the Department of Defense and the National Aeronautics and Space Administration (NASA). The funding will enable development of project baselines, including costs, scope, and schedules, prior to receiving funds to perform the work.

In order to plan and design ahead of Capital Program execution, funding of approximately 15 percent of the following year's program is required each year. The funding requested for FY 2021 will complete designs for projects planned for FY 2022 and will provide necessary planning and design to the 35 percent stage for most projects included in the planned FY 2023 program. 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 **\$50,900,000** for planning and design in FY 2021. These funds will be used to complete design for the Revitalization of the Historic Core, which includes the Smithsonian Institution Building (Castle) and the Arts and Industries Building (\$27.0 million). The request will also continue design for the new Museum Support Center-Suitland Pod 6 collections storage building (\$1.0 million), which will be shared with the National Gallery of Art under a unique partnership agreement. These funds will also be used for design work for major revitalization projects at the National Zoological Park (\$2.5 million); the National Museum of Natural History (\$2.0 million); the National Museum of American History (\$1.5 million); and the Hirshhorn Museum and Sculpture Garden (\$1.0 million). In addition, this request includes funding to prepare master plan updates for the National Museum of Natural History (\$1.0 million), and the National Zoological Park (\$1.0 million) and prepare designs for numerous smaller revitalization projects, including security upgrades, space utilization studies, and master planning (\$13.9 million), to guide future facilities decisions and ensure more effective use of existing space.

SMITHSONIAN INSTITUTION

FEBRUARY 2020



VISITS TO THE SMITHSONIAN
FYs 2015–2019

<u>MUSEUM</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>
MALL					
SI Castle	1,103,499	1,094,311	1,131,280	1,082,016	955,949
A&I Building ¹	0	56,427	64,343	18,329	27,514
Natural History	7,049,730	6,942,276	6,103,289	5,177,357	4,228,940
Air and Space	6,902,206	7,354,352	7,120,722	6,382,500	3,869,046
American Indian	1,307,568	1,120,359	1,157,460	1,109,424	985,781
Freer Gallery ²	389,113	88,989	0	294,866	300,066
Sackler Gallery	155,998	187,473	195,051	142,548	153,213
African Art	226,743	209,239	165,343	144,175	130,414
Ripley Center	156,318	155,548	164,853	127,850	150,663
American History	4,100,718	3,849,115	3,914,493	4,026,325	3,061,396
Hirshhorn	658,312	647,915	1,097,847	808,498	982,816
African American History and Culture ³	0	83,802	2,508,403	2,039,364	1,923,563
OFF MALL					
DW Reynolds Center (AA/PG)	1,265,223	1,224,282	1,242,707	2,118,434	1,819,355
Anacostia	32,983	28,458	31,775	37,562	11,038
Cooper Hewitt ⁴	218,840	408,846	355,672	316,732	267,948
American Indian ⁵ (Heye Center/CRC)	514,527	472,124	439,325	417,829	357,554
Renwick ⁶	0	829,735	371,201	795,523	430,101
National Zoo	2,194,194	2,593,559	2,025,148	1,664,579	1,885,116
Postal	401,124	359,562	470,723	525,168	489,120
Udvar-Hazy Center	<u>1,529,293</u>	<u>1,592,416</u>	<u>1,570,706</u>	<u>1,546,780</u>	<u>1,317,082</u>
TOTAL⁷	28,206,389	29,298,788	30,130,341	28,775,859	23,346,675

¹ The Arts and Industries (A&I) Building closed to the public in January of 2004 and hosts special events only.

² The Freer Gallery closed to the public in January of 2016 for renovation and reopened in October of 2017.

³ The National Museum of African American History and Culture opened in September of 2016.

⁴ The Cooper Hewitt, Smithsonian Design Museum closed to the public in October of 2011 for phase two of the Carnegie Mansion renovation project and reopened in December of 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 of 2013 and reopened in November of 2015.

⁷ The drop in visits in FY 2019 is due to the federal Government shutdown (in January of 2019), the partial closure of the National Air and Space Museum for a major renovation project, and a revised counting methodology.

TRUST FUNDS

In addition to support provided by federal appropriations, the Smithsonian Institution receives and generates trust funds to expand and enrich its programs. Trust funds are used to leverage the Smithsonian’s research capacity through partnerships with federal agencies, universities, non-Governmental organizations, industry, and other private organizations, both national and international. Trust funds are raised to renovate and modernize exhibits throughout the Institution. The following provides an overview of the current sources of trust funds.

The Institution’s trust funds include general trust funds with limited or no restrictions on their use, funds restricted by the donor or sponsor, and Government grants and contracts. Projections are subject to the uncertainty of the size of donations, grants, and contracts; to fluctuations in visitor attendance; and to the volatility of the economy, which together directly affect the return on the endowment, short-term interest income, and donor giving, as well as restaurant, magazine, catalogue, and museum shop revenues, memberships, and other business activities. The Institution’s gross operating revenue, less the expenses of the auxiliary activities, represents the net operating revenue available for programmatic and related purposes. The following table summarizes the sources of trust operating funds.

(Dollars in Millions)	FY 2019 Estimates	FY 2020 Estimates
General Trust	89.5	81.5
Donor/Sponsor-Designated	249.2	238.9
Government Grants and Contracts	78.1	81.3
Total Available for Operations	\$416.8	\$401.7

SOURCE AND APPLICATION OF TRUST FUNDS — The following sections describe the sources of each category of trust funds as well as a general account of how they are used.

General Trust Funds — The sources of general trust funds are investment income; payout from unrestricted endowments; net proceeds from the museum shops, catalogues, and food service concessions; sales of Smithsonian books, records, and other products based on designs and objects in the collections; theater/planetarium operations at the National Air and Space Museum; 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 2020 general trust funds total \$81,500,000. 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 2020 are projected to total \$238,900,000. Generally, these funds support a specific 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 2020, Government grants and contracts are projected to total \$81,300,000. Of this amount and the Donor/Sponsor-Designated Funds shown above, \$66,272,000 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 174-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 2020 appropriations language included in the Department of Interior, Environment and Related Agencies Appropriations Act, 2020, Division D of the Further Consolidated Appropriations Act, 2020 (Public Law 116-94, approved December 20, 2019).

Appropriation: Salaries and Expenses

1. For necessary expenses of the Smithsonian Institution, as authorized by law, including research in the fields of art, science, and history;

20 U.S.C. § 50 provides that “...all objects of art and of foreign and curious research, and all objects of natural history, plants, and geological and mineralogical specimens...shall be so arranged and classified...as best to facilitate the examination and study of them...”

20 U.S.C. § 53a provides that “Appropriations are hereby authorized for...the making of solar observations at high altitudes...”

20 U.S.C. § 69 provides that “The Secretary of the Smithsonian Institution is hereby authorized...to continue independently or in cooperation anthropological researches among the American Indians and the natives of lands under the jurisdiction or protection of the United States...”

20 U.S.C. § 75b(b) provides that “The [National Portrait] Gallery shall function as a free public museum for the exhibition and study of portraiture and statuary depicting men and women who have made significant contributions to the history, development, and culture of the people of the United States and of the artists who created such portraiture and statuary.”

20 U.S.C. § 76bb(c) provides that “The Joseph H. Hirshhorn Museum and Sculpture Garden...shall be used for the storage, exhibition, and study of works of art...”

20 U.S.C. § 77a provides that “Said national air and space museum shall...provide educational material for the historical study of aviation and space flight.”

20 U.S.C. § 78 provides that “The Secretary of the Smithsonian Institution is hereby authorized to cooperate with any State, educational institution, or scientific organization in the United States, for continuing paleontological investigations...”

20 U.S.C. § 80m(a)(3) provides that “(a)...the Board [of Regents] may-- ... (3) conduct programs of research and education [in the Museum of African Art]...”

20 U.S.C. §§ 80q-1(b)(1) & (3) provide that “(b)The purposes of the National Museum [of the American Indian] are to-- (1) advance the study of Native Americans, including the study of language, literature, history, art, anthropology, and life;... (3) provide for Native American research and study programs...”

20 U.S.C. § 80r-2(b)(1) provides that “(b) The purpose of the [National] Museum [of African American History and Culture] shall be to provide for-- (1) the collection, study and establishment of programs relating to African American life, art, history and culture that encompass [certain periods of the African American diaspora]...”

2. development, preservation, and documentation of the National Collections;

20 U.S.C. § 50 provides that “...all objects of art and of foreign and curious research, and all objects of natural history, plants, and geological and mineralogical specimens...shall be delivered to such persons as may be authorized by the Board of Regents to receive them, and shall be so arranged and classified...as best to facilitate the examination and study of them...”

20 U.S.C. § 50a provides that “The Smithsonian Institution is . . . authorized to include in its estimates of appropriations such sums as may be needful for the preservation and maintenance of the [John Gellatly art] collection.”

20 U.S.C. § 59 provides that “All collections of rocks, minerals, soils, fossils, and objects of natural history, archaeology, and ethnology...when no longer needed for investigations in progress shall be deposited in the National Museum.”

20 U.S.C. § 69 provides that “The Secretary of the Smithsonian Institution is hereby authorized...to continue independently or in cooperation...the excavation and preservation of archaeological remains.”

20 U.S.C. § 75e(1) provides that “...the Board [of Regents] may-- (1) purchase, accept, borrow, or otherwise acquire portraiture, statuary, and other items for preservation, exhibition, or study.”

20 U.S.C. § 76c(b) provides that “...the Regents are hereby authorized...to acquire (by purchase or otherwise) and sell contemporary works of art or copies thereof...”

20 U.S.C. § 76cc(a) provides that “There is established in the Smithsonian Institution a Board of Trustees...which shall have the sole authority (i) to purchase or otherwise acquire (whether by gift, exchange, or other means) works of art for the Joseph H. Hirshhorn Museum and Sculpture Garden...”

20 U.S.C. § 77a provides that “Said national air and space museum shall...collect, preserve, and display aeronautical and space flight equipment of historical interest and significance...”

20 U.S.C. § 80a(a) provides that “...the Smithsonian Institution shall collect, preserve, and exhibit military objects of historical interest and significance.”

20 U.S.C. §§ 80m(a)(1) & (2) provide that “(a)...the Board [of Regents] may-- (1) purchase, accept, borrow or otherwise acquire additional works of art or any other real or personal property for the Museum [of African Art]; (2) preserve, maintain, restore...or otherwise hold any property of whatsoever nature acquired...”

20 U.S.C. § 80q-1(b)(2) provides that “(b) The purposes of the National Museum [of the American Indian] are to--...(2) collect, preserve, and exhibit Native American objects of artistic, historical, literary, anthropological, and scientific interest...”

20 U.S.C. § 80r-2(b)(3) provides that “(b) The purpose of the [National] Museum [of African American History and Culture] shall be to provide for-- ...(3) the collection and study of artifacts and documents relating to African American life, art, history, and culture...”

20 U.S.C. § 81 provides that “The National Zoological Park is placed under the direction of the Regents of the Smithsonian Institution, who are authorized to transfer to it any living specimens, whether of animals or plants, in their charge, to accept gifts for the park...[and] to make exchanges of specimens...”

3. presentation of public exhibits and performances;

20 U.S.C. § 75b(b) provides that “The [National Portrait] Gallery shall function as a free public museum for the exhibition and study of portraiture and statuary...”

20 U.S.C. § 76c(b) provides that “In order to encourage the development of contemporary art and to effect the widest distribution and cultivation in matters of such art, the Regents are hereby authorized to...conduct exhibitions...”

20 U.S.C. § 76bb(c) provides that “The Joseph H. Hirshhorn Museum and Sculpture Garden...shall be used for the storage, exhibition, and study of works of art...”

20 U.S.C. § 77a provides that “Said national air and space museum shall...collect, preserve, and display aeronautical and space flight equipment of historical interest and significance...”

20 U.S.C. § 80a(a) provides that “...the Smithsonian Institution shall collect, preserve, and exhibit military objects of historical interest and significance.”

20 U.S.C. § 80m(a)(2) provides that “(a)...the Board [of Regents] may--...(2)...display...any property of whatsoever nature acquired [for the Museum of African Art]...”

20 U.S.C. § 80q-1(b)(2) provides that “(b) The purposes of the National Museum [of the American Indian] are to--...(2) collect, preserve, and exhibit Native American objects of artistic, historical, literary, anthropological, and scientific interest...”

20 U.S.C. § 80r-2(b)(3) provides that “(b) The purpose of the [National] Museum [of African American History and Culture] shall be to provide for--...(3) the collection and study of artifacts and documents relating to African American life, art, history, and culture...”

4. collection, preparation, dissemination, and exchange of information and publications;

20 U.S.C. § 53a provides that “Appropriations are hereby authorized for...preparation of manuscripts, drawings, and illustrations for publications.”

5. conduct of education, training, and museum assistance programs;

20 U.S.C. §§ 65a(a)(1),(3) & (4) provide that “(a)The Director of the National Museum under the direction of the Secretary of the Smithsonian Institution shall-- (1) cooperate with museums and their professional organizations in a continuing study of museum problems and opportunities, both in the United States and abroad;... (3) prepare and distribute significant museum publications; (4) perform research on, and otherwise contribute to, the [development of] museum techniques....”

20 U.S.C. § 77a provides that “Said national air and space museum shall...provide educational material for the historical study of aviation and space flight.”

20 U.S.C. § 79a provides that “The purpose of setting aside such an area [Barro Colorado Island] is to preserve and conserve its natural features...thus providing a place where duly qualified students can make observations and scientific investigations for increase of knowledge, under such conditions and regulations as may be prescribed by the [Smithsonian Institution].”

20 U.S.C. § 79e provides that “There are authorized to be appropriated annually...such sums as are necessary for the administration of [the Canal Zone Biological Area] ... and for the maintenance of laboratory or other facilities...”

20 U.S.C. § 80m(a)(3) provides that “(a)...the Board [of Regents] may-- ... (3) conduct programs of research and education [in the Museum of African Art]....”

Section 2 of Public Law 114-151 (May 9, 2016), to protect and preserve international cultural property, provides that the Smithsonian Institution should be included in an interagency coordinating committee to...”consult with governmental and nongovernmental organizations, including... museums, educational institutions, and research institutions, and participants in the international art and cultural property market on efforts to protect and preserve international cultural property.”

6. maintenance, alteration, operation, lease agreements of no more than 30 years, and protection of buildings, facilities, and approaches;

20 U.S.C. § 53a provides that “Appropriations are hereby authorized for the maintenance of the Astrophysical Observatory and...for repairs and alterations of buildings and grounds occupied by the Smithsonian Institution in the District of Columbia and elsewhere...”

20 U.S.C. § 76ee provides that “There is authorized to be appropriated...such additional sums as may be necessary for the maintenance and operation of such [Hirshhorn] museum and sculpture garden.”

20 U.S.C. § 79b(c) provides that “The ...[Smithsonian Institution] shall...(c) be responsible for the construction and maintenance of laboratory and other facilities on the area provided for the use of students authorized to carry on studies within the confines of the area...”

20 U.S.C. § 80m(a)(2) provides that “(a)...the Board [of Regents] may--...(2) preserve, maintain...any property of whatsoever nature acquired [for the Museum of African Art]...”

20 U.S.C. § 81 provides that “The National Zoological Park is placed under the direction of the Regents of the Smithsonian Institution, who are authorized...to administer and improve the said Zoological Park for the advancement of science and the instruction and recreation of the people.” Public Law 101-512 making appropriations for the Department of the Interior and Related Agencies for the fiscal year 1991 extended the maximum term for federal leases from ten years to thirty.

7. not to exceed \$_____for services as authorized by 5 U.S.C. 3109;

5 U.S.C. § 3109(b) provides that “When authorized by an appropriation or other statute, the head of an agency may procure by contract the temporary (not in excess of 1 year) or intermittent services of experts or consultants or an organization thereof, including stenographic reporting services.”

8. and purchase, rental, repair, and cleaning of uniforms for employees,

5 U.S.C. § 5901(a) provides that “There is authorized to be appropriated annually to each agency of the Government of the United States...on a showing of necessity or desirability, such sums as may be necessary to carry out this subchapter.

40 U.S.C. § 6306(c) provides that “The employees designated as special police under subsection (a) [covering the Smithsonian Institution] may be provided, without charge, with uniforms and other equipment as may be necessary for the proper performance of their duties...”

9. \$_____, to remain available until September 30, 20___, except as otherwise provided herein;

Wording added by the Congress in Public Law 111-88 making appropriations for the Department of the Interior and Related Agencies

for fiscal year 2010 to extend the availability for the Salaries and Expenses account from one year to two years unless otherwise provided.

10. of which not to exceed \$_____ for the instrumentation program, collections acquisition, exhibition reinstallation, and the repatriation of skeletal remains program shall remain available until expended;

Wording added by the Congress in Public Law 100-446 making appropriations for the Department of the Interior and Related Agencies for fiscal year 1989 to permit the Institution to establish no-year funding within the Salaries and Expenses account for the development of major scientific instrumentation. Public Law 101-512, making appropriations for the Department of the Interior and Related Agencies for fiscal year 1991, allowed no-year funding to be used for the instrumentation program as well as purchases for museum collections; reinstallation of museum exhibitions; and the repatriation of skeletal remains.

31 U.S.C. § 1301(c)(2) provides that “(c) An appropriation in a regular, annual appropriation law may be construed to be permanent or available continuously only if the appropriation--... (2) expressly provides that it is available after the fiscal year covered by the law in which it appears.”

11. and including such funds as may be necessary to support American overseas research centers:

Wording added by the Congress in Public Law 99-190 making appropriations for Other Related Agencies for fiscal year 1986.

12. *Provided* , That funds appropriated herein are available for advance payments to independent contractors performing research services or participating in official Smithsonian presentations.

31 U.S.C. § 3324(b)(1) provides that (b) “An advance of public money may be made only if it is authorized by-- (1) a specific appropriation or other law...”

13. *Provided further*, That the Smithsonian may expend Federal appropriations designated in this Act for lease or rent payments, as rent payable to the Smithsonian Institution, and such rent payments may be deposited into the general trust funds of the Institution to be available as trust funds for expenses associated with the purchase of a portion of the building at 600 Maryland Avenue, S.W., Washington D.C. to the extent that Federally supported activities will be housed there: *Provided further*, That the use of such amounts in the general trust funds of the Institution for such purpose shall not be construed as Federal debt service for, a Federal guarantee of, a transfer of risk to, or an obligation of the Federal Government: *Provided further*, That no appropriated

funds may be used directly to service debt which is incurred to finance the costs of acquiring a portion of the building at 600 Maryland Avenue, S.W., Washington D.C., or of planning, designing, and constructing improvements to such building: *Provided further*, That any agreement entered into by the Smithsonian Institution for the sale of its ownership interest, or any portion thereof, in such building so acquired may not take effect until the expiration of a 30 day period which begins on the date on which the Secretary submits to the Committees on Appropriations of the House of Representatives and Senate, the Committees on House Administration and Transportation and Infrastructure of the House of Representatives, and the Committee on Rules and Administration of the Senate a report, as outlined in the explanatory statement described in section 4 (in the matter preceding division A of the consolidated Act), on intended sale.

Wording added by the Congress in Department of Interior, Environment and Related Agencies Appropriations Act, 2020, as enacted by Division D of the Further Consolidated Appropriations Act, 2020 (Public Law 116-94, approved December 20, 2019).

Appropriation: Facilities Capital

1. For necessary expenses of repair, revitalization, and alteration of facilities owned or occupied by the Smithsonian Institution, by contract or otherwise, as authorized by section 2 of the Act of August 22, 1949 (63 Stat. 623),

20 U.S.C. § 53a provides that “Appropriations are hereby authorized...for repairs and alterations of buildings and grounds occupied by the Smithsonian Institution in the District of Columbia and elsewhere...”

20 U.S.C. § 81 provides that “The National Zoological Park is placed under the direction of the Regents of the Smithsonian Institution, who are authorized...to administer and improve the said Zoological Park for the advancement of science and the instruction and recreation of the people.”

Public Law 108-108, making appropriations for the Department of the Interior and Related Agencies for fiscal year 2004, established the Facilities Capital appropriation. The appropriation includes activities formerly financed through the Repair, Restoration and Alteration of Facilities appropriation and the Construction appropriation.

2. and for construction,

20 U.S.C. § 53a provides that “Appropriations are hereby authorized...for repairs and alterations of buildings and grounds occupied by the Smithsonian Institution in the District of Columbia and elsewhere...”

3. including necessary personnel,

Wording added by Congress for clarification in Public Law 108-7 making appropriations for the Department of Interior and Related Agencies for fiscal year 2003.

4. \$ _____ to remain available until expended,

31 U.S.C. § 1301(c)(2) provides that “(c) An appropriation in a regular, annual appropriation law may be construed to be permanent or available continuously only if the appropriation--... (2) expressly provides that it is available after the fiscal year covered by the law in which it appears.”

5. of which not to exceed \$ _____ shall be for services as authorized by 5 U.S.C. 3109.

5 U.S.C. § 3109(b) provides that “When authorized by an appropriation or other statute, the head of an agency may procure by contract the temporary (not in excess of 1 year) or intermittent services of experts or consultants or an organization thereof, including stenographic reporting services.”



Smithsonian Institution

The Board of Regents

November 21, 2019

The Honorable Betty McCollum
Chair, Subcommittee on Interior, Environment and Related Agencies
Committee on Appropriations
U. S. House of Representatives
Washington, D.C. 20515

Dear Madam Chair:

I am pleased to send you the Smithsonian Institution's Office of the Inspector General's Semiannual Report to Congress for the period of April 1, 2019 to September 30, 2019. The report highlights the audit and investigation activities of the Office of the Inspector General for this six-month period and fulfills the Institution's requirements under Section 5(a) of the Inspector General Act of 1978. Also included is the Smithsonian's response as required by Section 5(b) of the Act.

Sincerely,

A handwritten signature in black ink that reads "Risa Lavizzo-Mourey MS".

Risa J. Lavizzo-Mourey, M.D.
Chair, Audit and Review Committee of the Board of Regents
Smithsonian Institution

Enclosures



Smithsonian Institution

Lonnie G. Bunch III
Secretary

November 19, 2019

The Honorable Betty McCollum
Chair, Subcommittee on Interior, Environment and Related Agencies
Committee on Appropriations
U.S. House of Representatives
Washington, D.C. 20515

Dear Madam Chair:

This letter serves as the Smithsonian's management response to the enclosed Smithsonian Office of Inspector General's (OIG) Semiannual Report to Congress for the period of April 1, 2019 to September 30, 2019.

The period began with 21 open audit recommendations and the OIG issued 9 audit recommendations during the period for a total of 30. Our staff was able to close 9 recommendations (30%) leaving 21 open recommendations at the end of the period.

Table 1 (enclosed) provides an update on the status of unimplemented corrective actions from previous semiannual reporting periods, reflected on pages 8-10 of the Inspector General's semiannual report, regarding the Smithsonian's privacy program, personnel security, physical security, and protection of sensitive information.

We are committed to working with the Inspector General to ensure that the Institution's operations are economical, efficient, and effective, as well as free from fraud and abuse. We will continue to cooperate with the OIG to ensure that all Smithsonian Institution programs and operations meet the highest standards.

Sincerely,

Enclosures

MANAGEMENT RESPONSE

**TABLE 1
CORRECTIVE ACTIONS ON RECOMMENDATIONS MADE IN PREVIOUS SEMIANNUAL REPORTING PERIODS**

Audit Report Date	Title of Audit	Progress on Actions
3/14/2016	Audit of the Smithsonian Institution’s Privacy Program (OIG-A-16-04-6, March 14, 2016)	<p>In process and on track. During the PII inventory process, the Privacy Office identified approximately 289 paper records and 132 IT Electronic Systems requiring privacy risk assessments. In addition, Management identified and prioritized systems (both IT and paper) for assessment based on risk level; and collaborated with key stakeholders to configure the automated governance, risk compliance tool (Archer) to assess all paper record systems moving forward. Management is in the process of completing the requisite assessment and is on track for completion by April 1, 2020.</p>
	<p>The Smithsonian Privacy Officer (SPO) ensures a PIA is completed for all systems containing PII.</p>	

Audit Report
Date

Title of Audit

Progress on Actions

9/27/2017

Physical Security: The Office of Protection Services (OPS) Needs to Strengthen Training, Medical and Physical, and Equipment Requirements for Armed Security Guards and Improve Oversight of Unarmed Contract Guards (OIG-A-18-08, September 18, 2018)

The Director of OPS:

(1) assess the costs and benefits of adopting the ISC's best practice to require semi-annual firearms qualifications for all armed security guards;

(1) **Management submitted a closure request on 7/17/2019.** Management (OPS) completed its cost benefit evaluation of adopting the ISC's best practice to require semi-annual firearms qualifications for all armed security guards. Similarly, it identified staffing levels and funding requirements, as well as, alternative solutions that would be required to achieve the optimal level of support.

Audit Report
Date

Title of Audit

Progress on Actions

9/27/2017 **Personnel Security: Actions Needed to Strengthen the Background Investigation Process (OIG-A-18-09, September 20, 2018)**

The Director of Human Resources (OHR) should develop and implement policies and procedures to do the following:

- (1) designate and document position risk and sensitivity for all human resource offices;
- (2) include a requirement that Trust positions receive a sensitivity designation; and
- (3) monitor compliance of position risk and sensitivity designations conducted by all human resource offices.

(1), (2) and (3). **In process and on track.** Management (OHR) is updating Smithsonian Directive (SD) 212 and 213, Chapter 731, as well as developing a procedural document, to clarify the position risk and sensitivity documentation requirements for federal and trust position descriptions. Revisions to the SD will also clarify that OHR has oversight for these designations across all Smithsonian human resource offices (ie., those smaller offices located within Smithsonian Enterprises, Smithsonian Astrophysical Office, and the Smithsonian Tropical Research Institute), and will monitor compliance. Position descriptions previously in existence without this documentation have been updated to include the appropriate risk and sensitivity designations, and all newly established position descriptions include this information. Target date for completion of these is March 31, 2020.

The Director of Office of Protection Services (OPS) should do the following:

- (4) develop and implement procedures to establish time frames to schedule post-employment background investigations, monitor compliance with the newly established time frames, provide post-employment background investigations for temporary employees

(4) **Management submitted a closure request on 9/25/2019.** Management (OPS) established time frames to schedule post-employment background investigations and developed and began monitoring metric compliance with the newly established time frames. Management

whose appointment extends past 180 days, and review data in the Identity Management System to help ensure that it is accurate and complete;

(5) conduct the required level of background investigations for the sampled employees who did not have a post-employment background investigation scheduled;

(6) conduct the required level of background investigations for those employees without a record of one.

The Chief Operating Officer and Under Secretary for Finance and Administration should do the following:

(7) develop and implement a policy to require (a) all employees and affiliated individuals to undergo a background investigation prior to being granted computer system access, and (b) OCIO to independently verify with OPS that an investigation was completed.

began providing post-employment background investigations for temporary employees whose appointment extends past 180 days, developed Identity Management System quality check procedures, and began its audits as of April 1, 2019.

(5) **Management submitted a closure request to the OIG on 9/25/2019.** Management (OPS) verified the appropriate background investigation for each of the sampled employees who did not have a post-employment background investigation scheduled from the three HR offices, and conducted the appropriate background investigations.

(6) **In process and on track.** Management (OPS) received the position description designations for the sampled employees who did not have a post-employment background investigation scheduled from the three HR offices, and is in the process of verifying the appropriate background investigation for each. Target date for completion is January 31, 2020.

(7) **In process and on track.** Management (OCIO and OPS) updated SI policy and procedures to require backgrounds checks prior to the granting of computer network access. The policy (SD 224) is being vetted through the Smithsonian policy approval process. Management is also in the process of implementing the revised procedures regarding OCIO's verification of investigation completion. Target date for completion is November 30, 2019.

(8) identify all employees and affiliated individuals who have computer system access but have not received background investigations and ensure that they receive background investigations.

(8) **In process and on track.** Management (OCIO and OPS) has been working to validate the list of individuals who currently have computer system/network accounts against the background investigation records, and to begin the process of conducting appropriate background checks for the identified personnel. Target date for completion is March 31, 2020.

The Directors of the Office of Protection Services and the Smithsonian Tropical Research Institute (STRI) should:

(9) develop and implement background investigation policies and procedures for all STRI's locally hired Panamanian employees.

(9) **In process and on track.** Management (OPS and STRI) completed the first draft of background investigation policies and procedures for all of STRI's locally hired Panamanian employees and is continuing to vet and refine the documents. Target date for completion is March 31, 2020.

Audit Report
Date

Title of Audit

Progress on Actions

9/27/2017

Fiscal Year 2017 Independent Evaluation of the Smithsonian Institution's Information Security Program (OIG-A-19-01, October 10, 2018)

The Director of Office of Protection Services (OPS) should do the following:

(1) improve security incidence response at the Smithsonian.

(1) **In process and on track.** Management (OPS) completed the risk assessment and implementation of improvements. In addition to the efforts by the Director of the affected office, Management re-keyed offices and added door guards to minimize break-in vulnerability. Protection Service personnel are working with the building management at the facility to finalize identification of alarm points in order to separate out notification and response procedures. Target date for completion is November 30, 2019.

Adjustments for FY 2020
(Dollars in Thousands)

Unit	FY 2020 Enacted	Reorganizations and Reprogrammings	FY 2020 Revised Estimate
	\$000s	\$000s	\$000s
MUSEUMS AND RESEARCH CENTERS			
<i>Unlocking the Mysteries of the Universe</i>			
National Air and Space Museum	20,110	0	20,110
Smithsonian Astrophysical Observatory	24,745	0	24,745
Major Scientific Instrumentation	4,118	0	4,118
Universe Consortium	184	0	184
<i>Subtotal, Unlocking the Mysteries of the Universe</i>	49,157	0	49,157
<i>Understanding and Sustaining a Biodiverse Planet</i>			
National Museum of Natural History	49,789	0	49,789
National Zoological Park	28,066	0	28,066
Smithsonian Environmental Research Center	4,357	115 1	4,472
Smithsonian Tropical Research Institute	14,702	0	14,702
Biodiversity Consortium	1,543	0	1,543
<i>Subtotal, Understanding and Sustaining a Biodiverse Planet</i>	98,457	115	98,572
<i>Valuing World Cultures</i>			
Arthur M. Sackler Gallery/Freer Gallery of Art	6,273	0	6,273
Center for Folklife and Cultural Heritage	3,484	0	3,484
Cooper Hewitt, Smithsonian Design Museum	5,086	0	5,086
Hirshhorn Museum and Sculpture Garden	4,544	0	4,544
National Museum of African Art	4,854	0	4,854
World Cultures Consortium	792	0	792
<i>Subtotal, Valuing World Cultures</i>	25,033	0	25,033
<i>Understanding the American Experience</i>			
Anacostia Community Museum	2,405	85 2	2,490
Archives of American Art	1,933	0	1,933
National Museum of African American History & Culture	33,117	0	33,117
National Museum of American History, Behring Center	25,478	0	25,478
National Museum of the American Indian	33,648	237 3	33,885
National Portrait Gallery	6,646	0	6,646
National Postal Museum	1,581	250 4	1,831
Smithsonian American Art Museum	10,389	23 5	10,412
American Experience Consortium	600	0	600
<i>Subtotal, Understanding the American Experience</i>	115,797	345	116,392
TOTAL, MUSEUMS AND RESEARCH CENTERS	288,444	710	289,154

Adjustments for FY 2020
(Dollars in Thousands)

Unit	FY 2020 Enacted	Reorganizations and Reprogrammings	FY 2020 Revised Estimate
	\$000s	\$000s	\$000s
MISSION ENABLING			
Program Support and Outreach			
Outreach	9,333	0	9,333
Communications	2,839	0	2,839
Institution-wide Programs	23,284	0	23,284
Smithsonian Exhibits	3,169	0	3,169
Museum Support Center	1,906	0	1,906
Museum Conservation Institute	3,359	0	3,359
Smithsonian Libraries and Archives	14,458	0	14,458
Subtotal, Program Support and Outreach	58,348	0	58,348
Office of the Chief Information Officer	54,247	200 \6	54,447
Administration	37,324	-400 \1,2,6	36,924
Office of the Inspector General	4,077	0	4,077
Facilities Services			
Facilities Maintenance	114,545	0	114,545
Facilities Operations, Security, and Support	236,673	-510 \3,4,5	236,163
TOTAL, MISSION ENABLING	505,214	-710	504,504
GRAND TOTAL, SMITHSONIAN INSTITUTION	793,658	0	793,658

Footnotes for FY 2020 Estimate:

- \1 Transfer of \$115,000 from Administration to Smithsonian Environmental Research Center to fund a safety officer.
- \2 Transfer of \$85,000 from Administration to Anacostia Community Museum for operational support.
- \3 Transfer of \$237,000 from Smithsonian Facilities, Operations, Security and Support to National Museum of the American Indian for security requirements.
- \4 Transfer of \$250,000 from Smithsonian Facilities, Operations, Security and Support to National Postal Museum for security requirements.
- \5 Transfer of \$23,000 from Smithsonian Facilities, Operations, Security and Support to Smithsonian American Art Museum to support storage lease.
- \6 Transfer of \$200,000 from Administration to Office of the Chief Information Officer to support privacy function.